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ABSTRACTS

Speaker Abstracts

S-1

MYTHS AND REALITY OF TESTOSTERONE THERAPY

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Testosterone has held a position of great interest and curiosity among healthcare professionals, the lay public and particularly the media for decades. In fact, from ancient times when a clear association between sexual function and products of the testes was uncovered, leading to castration of the harem guards, testosterone has been accorded special properties and powers. The controversy surrounding testosterone use has continued into modern times as well. In the not too distant past, attempts at ingesting homogenates from monkey testes with the belief that a myriad of illnesses would be cured to present day conjecture of some, that all men exposed to exogenous testosterone are playing with fire.

While myths abound, the truth relating to the anabolic effects of testosterone are modest. Its role in inducing prostate disease, hypertrophy and potentially being fuel to prostate cancer has led many primary care physicians to shy away from the potential good it can produce among those with true hypogonadism.

In this presentation a critical evaluation of the current literature relating to the myths and reality of testosterone supplementation in the fields of sexual function and dysfunction will be reviewed. The strength of the findings and their direct clinical application highlighted to provide the practising physician with a balanced viewpoint of the existing evidence.

S-2

THE POLITICAL DILEMMA OF ANDROPAUSE: CANADIAN THIRD PARTY PAYER ATTITUDES TOWARD HORMONE REPLACEMENT THERAPY. CANADIAN SOCIETY FOR THE STUDY OF THE AGING MALE (CSSAM) CONSENSUS DOCUMENT ON TESTOSTERONE THERAPY IN MEN

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The healthcare system in Canada provides universal access to the consumer. A complex integration exists between various levels of government in which the management of healthcare is controlled by the provinces, but follows guidelines set out by the Canada Health Act. This guarantees universality and portability of the system. The provinces have the freedom to designate the classes of medication eligible and can specify which medications within given classes they will cover.

Health and Welfare Canada is the Federal department responsible for maintaining the health of Canadians. Its mandate requires that all recommendations are scientifically valid and evidence based. In the field of drug therapy, it is responsible for ensuring that balance is maintained between risk and benefits of drug therapy.

Health and Welfare Canada recently investigated regulatory issues surrounding Testosterone Therapy in Aging Males. At issue was the risk/benefit ratio of hormone replacement therapy (HRT) in men with age-related hypogonadism (ARH). The absence of consensus on terminology and the lack of data supporting benefits in this population, led to the recommendation that testosterone not be covered under the universal health plan and that the indication should be removed from the labelling of testosterone products.

CSSAM subsequently convened an international consulting group of experts to evaluate the existing data and conclusions arrived at by Health and Welfare Canada. The consensus report and the process of developing this document will be presented.

S-3

LATE ONSET HYPOGONADISM (LOH) – THE SCOPE OF THE PROBLEM IN ASIA

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Testosterone Deficiency Syndrome (TDS) or Symptomatic Late Onset Hypogonadism (SLOH) was first reported in the literature about 60 years ago. However, extensive clinical research has only been carried out in the last 15 years or so. Numerous recent studies continue to validate the extent and significance of TDS or SLOH in the general male population. These include multi-ethnic studies of 2003 Petaling Jaya Men's Health Study and the 2006 Subang Men's Health Research.

Overall at least one fifth of men above 40 years old suffer from TDS or SLOH. Besides sexual dysfunction, TDS affects other important bodily systems and functions, and these include haematopoiesis, bone mineralization, central nervous system (CNS) (behaviour and mood), carbohydrate and lipid metabolism, calcium haemostasis and prostate growth. Common disabilities associated with adult TDS include frailty (contributed by anaemia, musculoskeletal changes, and osteoporosis), cardiovascular system diseases (related to lipid and carbohydrate abnormalities), CNS changes (behaviour and mood) and sexual dysfunction (erectile dysfunction (ED), libido and ejaculatory problems).

In Asia, the reported prevalence of LOH ranges from 10% to 40%. This prevalence is set to rise rapidly as the aging population (>65 years) in Asia will increase 4-fold in the next 50 years. As most Asian countries are still in economic transition, the aging male population is needed and expected to remain in the workforce into their 70s. Identifying and treating LOH in the Asian male may be crucial for Asian countries to sustain economic growth.

Recent epidemiological studies have shown the association of obesity, metabolic syndrome and diabetes mellitus with low serum testosterone. All these risk factors are known to be associated with sexual dysfunction. As the prevalence of obesity, diabetes mellitus and metabolic syndrome in Asia is rapidly rising, the issue of LOH in Asia will gain in importance. Further, sexual dysfunction in Asia is viewed as loss of ego, power and dignity. Preservation of sexual function in the Asian context is therefore vital as it extends beyond the ability to engage in sexual activity.

The challenge in Asia is to determine the true impact of clinically significant LOH in the aging male population.

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More research is urgently needed to understand the issues of LOH on men's health and aging in Asia.

S-4

ARE THERE ANY ALTERNATIVES TO TESTOSTERONE (T) TREATMENT FOR HYPOGONADAL OLDER MEN?

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Older men have hypothalamic-pituitary-testis dysfunction (low serum T levels and disordered gonadotropin secretion). Androgen substitution in older men is indicated when there are clinical signs or symptoms of hypogonadism and serum total, free, or bioavailable T levels below the reference range for young adult men. Once these criteria are met, the older man is administered T either as oral, buccal, transdermal, intramuscular preparation or as subdermal implants. Secondary hypogonadism seen in aging, obesity, pain medications and chronic illnesses has encouraged new therapeutic approaches. DHEA administered orally at 50 mg/day does not have any significant effects on sexual function, body composition, bone mineral density, mood or quality of life. Transdermal dihydrotestosterone does not appear to have any advantage over administration of T. Human chorionic gonadotropin injections will stimulate T production and induce or maintain spermatogenesis; older men respond with an increase in T levels and small improvements in lean mass and muscle strength. Older men may have a lower acute response to clomiphene citrate (a partial oestrogen receptor antagonist), but in studies with enclomiphene older men responded with increases in FSH, LH and free T levels; other anti-oestrogens also increase T. In recent years, aromatase inhibitors have been used in older men resulting in increases in serum LH and testosterone without adverse effects on bone metabolism. Long-term RCT are lacking both for clomiphene and aromatase inhibitors. The newest experimental approach to androgen replacement in older men will use selective androgen receptor modulators (SARMs) to provide orally administered tissue selective alternative to T; SARMs provide the potential for beneficial effects while reducing some of the risks of androgens.

S-5

WILL SELECTIVE ANDROGEN RECEPTOR MODULATORS (SARMS) WORK FOR OLDER MEN?

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Stimulation of prostate growth and particularly prostate cancer is the major concern with T treatment of older men with clinical androgen deficiency. Ideally, androgen therapy in older men would provide all the beneficial effects (e.g. on body composition, bone, sexual and brain function) without adverse effects (e.g. on the prostate). Approaches to achieve tissue-selective androgen actions include: combining T with a 5 α-reductase inhibitor (5α-RI) to reduce conversion of T to dihydrotestosterone (DHT) and prostate stimulation; tissue-selective anabolic steroids (such as MENT); and orally-active, non-steroidal SARMs. The mechanism of tissue-selective androgen activity of SARMs is poorly understood, but may involve lack of active metabolism to DHT and estradiol and/or differential recruitment of co-regulators. SARMs exhibit greater muscle relative to prostate stimulatory effects in animals, but it is not clear how these differential tissue actions translate to humans. Early studies in humans that suggest SARMs have anabolic effects on body composition and physical performance are promising, but long-term effects on prostate growth are not known. Short-term co-administration of T with a 5α-RI has been demonstrated to improve body composition, physical performance and bone mineral density without stimulating prostate size or PSA. It is likely that combined administration of T with a 5αRI, anabolic steroids and SARMs will work as anabolic agents in older men to stimulate muscle growth, but their long-term effects on physical performance and the treatment and prevention of the frailty in older men, and more importantly, their safety with respect to prostate and cardiovascular risks are not yet known.

S-6

GASTRIC DISTENSION ATTENUATES THE HYPOTENSIVE RESPONSE TO INTRADUODENAL GLUCOSE IN HEALTHY OLDER SUBJECTS

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Background and aims. Postprandial hypotension (PPH) is an important clinical problem in the elderly and is associated with an increased incidence of falls, stroke and angina. The magnitude of the fall in blood pressure (BP) relates to the rate of gastric emptying (GE), whereas gastric distension may attenuate the fall in BP. We evaluated the effects of gastric distension on the BP and heart rate (HR) responses to intraduodenal (ID) glucose in healthy older subjects.

Methods. Eight subjects (65–76 yr) were studied on 3 days. BP and HR were measured during ID infusion (t = 0–60 min) of (i) 50 g glucose in 300 ml saline ('ID glucose'), (ii) 50 g glucose in 300 ml saline with 500 ml water IG ('IG water and ID glucose') or (iii) ID saline infusion with 500 ml water IG ('IG water and ID saline'), followed by ID saline (t = 60–120 min). GE of IG water was measured by ultrasound.

Results. Systolic BP was greater ($p < 0.05$) with 'IG water and ID saline' than 'IG water and ID glucose' and less ($p < 0.05$) with 'ID glucose' than 'IG water and ID glucose'. HR was higher ($p < 0.01$) with both 'IG water and ID glucose' and 'ID glucose' than 'IG water and ID saline'. GE was faster (T50 (mean ± SEM): 41.0 ± 4.0 min versus 77.7 ± 8.3 min; $p = 0.006$) with 'IG water and ID saline' than 'IG water and ID glucose'.

Conclusions. We conclude that gastric distension markedly attenuates the hypotensive response to ID glucose in healthy older subjects. Water consumption before a meal, accordingly, represents a simple approach to the management of PPH.

S-7

ANALYSIS OF DIFFERENCES OF COMPREHENSIVE GERIATRIC ASSESSMENT BETWEEN ELDERLY ONCOLOGIC MEN AND ELDERLY ONCOLOGIC WOMEN IN A UNIVERSITY HOSPITAL

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Background and aims. The incidence of cancer increases with age. A comprehensive geriatric assessment (CGA) has been used during the past 15 years to estimate the functional reserve and the life expectancy of an older person. We have tested the performance of a new CGA and the differences between sex in oncologic patients in the University Hospital in Elche.

Methods. Between June 2006 and January 2007, 73 oncologic patients older than 74 years were enrolled. They were analysed in activities of daily living (ADL) measured by the Barthel Scale (BS), instrumental activities of daily living (IADL) measured by the Lawton-Brody Scale (LBS), cognitive evaluation measured by the Pfeiffer Test (PT), number of geriatric syndromes, and medication intake. The first three items were correlated to sex. A Chi-squared test was used for statistical analysis; p-value < 0.05 was considered significant.

Results. Median age 78,30 years (SD 3,93). 50.7% female. Kind of tumours: breast cancer (30.1%), lung cancer (20.5%) and colorectal cancer (15.1%); 39.4% of patients had no geriatric syndromes. Very high medication intake 27.3%. 83.1% of patients were not dependent in BS, 26.1% were

not dependent in LBS, and 89.4% of patients had no cognitive deficit. There was no statistically significant association between sex and cognitive deficit (measured by PT) (male 9.7%; female 11.4%; $p = 0.302$); nor between sex and BS < 65 (male 5.9%; female 6.1%; $p = 0.198$); nor between sex and LBS > 8 (male 25.1%; female 25.9%; $p = 0.215$).

Conclusion. Old men with cancer do not have higher values in BS, LBS or PT than women of similar age.

S-8

BENEATH THE ILLNESS ICEBERG: THE MAGNITUDE OF UNMET UROLOGIC NEED IN THE GENERAL US POPULATION. RESULTS FROM THE BOSTON AREA COMMUNITY HEALTH (BACH) SURVEY

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Introduction and objective. The notion of an 'illness iceberg' is used by epidemiologists to describe the distribution of disease in the general population – only a small proportion is above the surface (presented to and diagnosed by a physician) while most remains below the surface (symptoms lack salience, inadequate health insurance discourages presentation and incorrect diagnosis). Despite the high prevalence of urologic symptoms (e.g. symptoms suggestive of painful bladder syndrome, prostatitis, lower urinary tract symptoms (LUTS), weekly urine leakage, frequency, urgency, nocturia, or overactive bladder) and their impact on quality of life, many never receive the benefit of effective pharmacologic therapies. Using data from a population-based random sample of adults we: (1) Describe the prevalence of urologic symptoms; (2) Estimate the proportion using effective pharmacologic therapies; and (3) Describe the variation by race/ethnicity, age, gender, socio-economic status and health insurance status.

Methods. Analysis was performed on data from the Boston Area Community Health (BACH) Survey which used a stratified 2-stage cluster design to sample 5,503 adults aged 30–79 years from Boston, Massachusetts (2301 men; 3,202 women; 1,767 Black, 1,877 Hispanics and 1,859 Whites).

Results. About half of BACH participants have at least one symptom. Men and women are equally likely to have LUTS (AUA symptom index of 8+). Medications for LUTS include anticholinergics, selective and non-selective alpha blockers, and 5-alpha reductase inhibitors. Three per cent of BACH respondents are taking one of these drugs including those with LUTS (8.8% presumably with less severe symptoms than if they were not taking medication) and those without LUTS (1.6% presumably the medication has reduced the respondents' symptoms). More men (4%) than women (2.1%) and more Whites (3.6%) than Blacks (2.3%) or Hispanics (1.6%) are taking these medications. Socioeconomic status and health insurance status did not affect the likelihood of taking these medications. Medication use increased with age (0.6% 30–39 to 8.4% 70–79).

Conclusions. (1) Symptoms suggestive of urologic conditions are common in the general population; (2) Only a small proportion (3%) are using medications that are effective for urologic symptoms; (3) Differences between subjects with treated and untreated urologic symptoms are described. Our results have important implications for health services research and patient education.

S-9

ASSOCIATION OF LOWER URINARY TRACT SYMPTOMS AND CHRONIC ILLNESSES

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Introduction. There is increasing evidence of an association between lower urinary tract symptoms (LUTS) and chronic illnesses. The objective of this study is to determine whether symptom severity and duration influence these associations.

Methods. The Boston Area Community Health (BACH) Survey used a multistage stratified random sample to recruit 5,503 adults age 30–79 in three race/ethnic group. Urinary symptoms (incomplete emptying, intermittency, weak stream, straining, frequency, urgency, and nocturia) used in the calculation of the American Urological Association symptom score were included in the analysis. Symptom severity was defined as: no symptoms, mild (rarely, a few times) and severe symptoms (fairly often to almost always). Symptom duration was categorized as having the symptom for <1 year or ≥ 1 year. Co-morbid conditions included in the analysis were heart disease, type 2 diabetes, hypertension, and depression.

Results. Statistically significant associations were observed between depression and all seven symptoms of the AUA symptom score among both men and women. Among men, increased severity and duration of nocturia were associated with increased odds of heart disease, while among women a similar pattern was observed in the association of nocturia and diabetes. Among men severe intermittency was associated with increased odds of heart disease, while severe urgency was associated with increased odds of diabetes. Increased risk of hypertension was observed only among women reporting severe urgency for ≥ 1 year.

Conclusion. The results demonstrate that the association between urinary symptoms and chronic disease is influenced by the severity and duration of these symptoms.

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S-10

DOES AMERICA'S INCREASING WAISTLINE ALSO INCREASE THE LIKELIHOOD OF UROLOGIC SYMPTOMS? RESULTS FROM THE BOSTON AREA COMMUNITY HEALTH (BACH) STUDY

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Introduction and objective. The proportion of Americans who are overweight has been increasing. Currently 70% of Americans aged 30–79 are overweight and 35% are obese. Using a population-based random sample of residents of Boston, Massachusetts, we investigate the joint association of age and adiposity on the prevalence of urologic symptoms.

Methods. The Boston Area Community Health (BACH) study used a multi-stage cluster design to sample 5,503 adults aged 30–79 (2301 men, 3,202 women; 1,767 Black, 1,877 Hispanic, 1,859 White). Interviewers measured the respondent's height, weight, waist and hip circumference and inquired about a number of urologic symptoms using validated questionnaires. Responses are weighted inversely proportional to their probability of selection. Analyses were conducted in S-Plus and fit a generalized additive model, by gender, with a nonparametric fit to age, an adiposity measure, and the interaction of age and adiposity.

Results. The best fitting model usually included waist or hip circumference rather than body mass index or waist to hip ratio. For men, the association of urologic symptoms and adiposity is often U shaped (as compared to women where the prevalence of urologic symptoms tends to increase with increasing adiposity). As an example, the prevalence of nocturia is least for men with a waist circumference of 80 (105) cm at age 30 (80).

Conclusions. If obesity continues to increase in the US, there will be more people with urologic symptoms then previously predicted. These results suggest that some urologic symptoms may be eliminated through weight reduction.

S-11

RACE/ETHNIC VARIATIONS IN THE INCLINATION TO SEEK CARE FOR UROLOGIC SYMPTOMS. RESULTS FROM THE BOSTON AREA COMMUNITY HEALTH (BACH) SURVEY

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Introduction and objective. Previous research has identified variations in the inclination to seek care for urologic symptoms

and suggested that these differences are a function of race/ethnicity. We investigated whether these differences are more importantly influenced by socioeconomic status (SES) and/or health insurance status, which could explain observed variations in the inclination to seek care for urologic symptoms.

Methods. The Boston Area Community Health (BACH) Survey is a study of urologic symptoms of 5,503 adults aged 30–79 (2301 men, 3,202 women; 1,767 Black, 1,877 Hispanic, 1,859 White participants) randomly sampled from Boston, Massachusetts during 2002–2005. Interviewer administered interviews were conducted, focusing on urologic symptoms, but also including information on anthropometrics, sociodemographics, co-morbidities, and psychosocial characteristics. Participants were asked how important they thought it was to seek care for pain/burning in the bladder, chronic pelvic pain, perineal pain and urine leakage requiring pad wearing measured by a Likert scale ranging from 1–5, 1 being 'not important at all' and 5 being 'extremely important'. Analyses were conducted in SAS and SUDAAN.

Results. All three race/ethnic groups reported that it was important-extremely important to seek care for pain/burning in the bladder (mean: 4.62 (Blacks), 4.48 (Hispanics) and 4.56 (Whites). For pain/burning in the bladder, women felt it was more important to seek care (4.60) relative to men (4.54) and younger people (4.59) felt it was more important than older people (4.53). People with lower SES and those without health insurance indicated it was less important to seek care for pain/burning in the bladder. The same trends emerged by race/ethnicity, age and gender for chronic pelvic pain, perineal pain and pad wearing for urine leakage. Care seeking for wearing a pad due to urine leakage was less important for those who had private health insurance and weekly urine leakage. In multivariate models, race/ethnic differences were neither eliminated nor explained by SES or health insurance status.

Conclusions. Seeking care appeared to be less important among people who were older, lower SES and/or who had no health insurance. Blacks thought it was more important to seek care for urologic pain symptoms and Hispanics thought it was less important. While SES and health insurance explain the race/ethnic differences for Hispanics, they do not for Blacks. Ancillary qualitative work is underway to elucidate these findings.

S-12

ARE COMMONLY USED PRESCRIPTION DRUGS RELATED TO UROLOGIC SYMPTOMS AMONG MEN? RESULTS FROM THE BOSTON AREA COMMUNITY HEALTH (BACH) SURVEY

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Introduction and objective. The extent to which common prescription drugs may be associated with urologic symptoms is unknown. We investigated the association between 25 popular drugs and urologic symptoms among community-dwelling men.

Methods. Analyses were derived from the Boston Area Community Health Survey, an epidemiologic study conducted from 2002–2005 in a population-based random sample from Boston, Massachusetts. Urologic outcomes were measured using the American Urologic Association (AUA) Symptom Index and defined as: voiding disorders (score of 5+ for incomplete emptying, difficulty starting/stopping, weak stream, straining; range 0–20); and storage disorders (score of 4+ for frequency, urgency, nocturia; range 0–15). Multivariate logistic regression and linear models (using a continuous scale), adjusted for relevant risk factors, were used to estimate the association between drugs and urologic outcomes.

Results. 2,301 men were included (mean age 46.9). In logistic models, statins were associated with increased odds of voiding disorders (odds ratio (OR) = 1.77, 95% confidence interval (CI): 1.01–3.11) as were narcotics (OR = 3.45, 95% CI: 1.16–10.23), but the associations were not found in linear models. For storage disorders, statin use was associated with reduced odds (OR = 0.58, 95% CI: 0.34–0.96), while corticosteroids were associated with a nearly three-fold increase in odds (OR = 2.84, 95% CI: 1.44–5.62). These associations persisted in linear models where statins were associated with a −0.68 shift on the scale (95% CI: −1.21– −0.15) and corticosteroids were associated with an increase of 1.06 on the scale (95% CI: 0.19–1.92).

Conclusions. With the exception of statins and corticosteroids, most commonly-used medications were not associated with voiding and storage disorders in this population-based study.

S-13

THE AGING MALE

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Over the past century, the world has seen enormous changes, including the historically unprecedented decline in mortality rates and increase in population, followed by the equally unprecedented decline in fertility rates. This century will see a new set of demographic challenges, including a mix of falling fertility rates alongside persisting worldwide population growth; and the subsequent aging of populations in both developing and developed countries.

The 20th century was the century of population growth; the 21st century will go into the history books as the century of aging. Since the increase of life expectancy at birth does not parallel health expectancy, the rise in morbidity will dramatically increase the burden on national healthcare systems. Strategies that decrease, delay or prevent lung, prostate and colon cancer, cardiovascular disease, and metabolic syndrome are being actively developed.

Preventative strategies should increase health expectancy but will necessitate a quantum leap in multidisciplinary and internationally coordinated research efforts, supported by a new partnership between industry and governments, philanthropic and international organizations. We hope that this collaboration will enrich us with a better understanding of healthy aging, will permit us to help improve the quality of life, will prevent the preventable, and will postpone and decrease the pain and suffering of the inevitable.

S-14

CAN WE DIAGNOSE TESTOSTERONE DEFICIENCY IN OLDER MALES?

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Longitudinal studies have shown that serum testosterone (T) declines with aging in men. Diagnosis of T deficiency in older men poses problems, as lack of energy, sexual dysfunction, mood changes are non-specific and frequently multi-factorial in older men who may have concurrent chronic diseases. The questionnaires that have been developed for the diagnosis of hypogonadism in older men may have adequate sensitivity but lack specificity and are not useful for the diagnosis of T deficiency. Thus the cornerstone for the diagnosis of low T rests on the measurement of serum T. In older men serum sex hormone binding globulin (SHBG) levels increase with age. Men with symptoms suggestive of low T but who have relatively normal serum T levels should have an assessment of the free or bioavailable T. Recent reports have shown that serum levels of T showed a large variation from different laboratories using the same or different methods. Newer methods using mass spectrometry are more accurate than most of the commonly used immunoassays. Free T measurements require accurate serum total T values and can be measured by equilibrium dialysis or by measuring SHBG to calculate free concentrations. Free T measured by analogue immunoassays reflects total T and provides no additional value. Bioavailable T can be assessed by ammonium sulphate precipitation. Clinicians must be aware of the differences in accuracy and reference ranges between methods and laboratories when ordering and interpreting the results and base their diagnosis of T deficiency both on symptoms and the results of these tests.

S-15

TESTOSTERONE REPLACEMENT IN HYPOGONADAL MEN WITH SUBTHRESHOLD DEPRESSION AND CHRONIC ILLNESS

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Background and aims. Hypogonadism and subthreshold depression are common disorders in older men and are associated with increased morbidity and mortality. However, treatment standards for these conditions, particularly subthreshold depression, remain unclear. We hypothesized that testosterone replacement would decrease depression in older, hypogonadal men with subthreshold depression (dysthymia or minor depression) and chronic illness.

Methods. We conducted a 12-week, randomized, double blind study of testosterone (7.5 gm/qd) or placebo gel. The Hamilton Depression Rating Score (HDRS) was the primary outcome measure. Participants ($n = 27$) had a screening testosterone level < 2.8 ng/ml, dysthymia or minor depression, and age > 50 years. At baseline, total testosterone was 2.8[1.0] ng/ml (mean(standard deviation)), HDRS was13.2[4.3], age was 61.7[6.7], and number of medical conditions was 5.4[3.9]. Secondary outcomes were self-reported depression (SCL-20), health-related quality of life (SF-36), and quality of life (short Endicott Quality of Life Scale).

Results. There were no significant differences between groups at baseline. At 12 weeks analyses of covariance, controlling for baseline values, age, and medical morbidity, found that testosterone-treated men ($n = 12$) had increased total and free testosterone ($p < 0.01$) compared to placebo-treated men ($n = 15$). In a similar analysis, testosterone-treated men had decreased HDRS ($p = 0.006$) and a greater percentage of men with remitted depression (67% versus 13%; $p = 0.004$) compared to placebo-treated men. Decreases in HDRS at 12 weeks correlated with higher free testosterone ($p = 0.009$). There were no significant differences in secondary outcome measures between groups and no adverse effects.

Conclusions. Older, hypogonadal men with subthreshold depression and chronic illness had remission of depression with testosterone replacement.

S-16

THE SAFETY AND EFFICACY OF LONG-ACTING TESTOSTERONE UNDECANOATE: EVIDENCE FROM A 'REAL-LIFE' STUDY

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Background and aims. To evaluate the safety and efficacy of injectable testosterone undecanoate (TU) (Nebido®) in the treatment of male hypogonadism, under conditions resembling routine clinical management. In this study, variable injection intervals were permitted and patient exclusion criteria minimized.

Methods. This was an open-label, single-arm study of 96 men aged 18–75 years with symptomatic hypogonadism. Patients underwent six treatment visits. At each treatment visit, patients received a single dose of 1000 mg TU. The second treatment visit was scheduled 6–10 weeks after the first injection; subsequent visits were separated by 10–14 weeks. A follow-up visit occurred 10–14 weeks after the last TU injection. Efficacy endpoints included changes in trough total testosterone (TT) levels, patient satisfaction and health-related quality of life (HRQoL; assessed with the aging males' symptoms (AMS) scale). Safety endpoints included changes in prostate-specific antigen (PSA) levels, hematocrit, carbohydrate metabolism and lipids.

Results. After the second injection, mean serum trough TT levels did not fall beneath the normal physiological range during the study. The majority (92.5%) of patients described themselves as satisfied with treatment, and TU improved HRQoL, with respect to all three AMS domains. Mean ($\pm$SD) serum PSA levels remained close to baseline throughout treatment (baseline: 0.81 ($\pm$0.80) ng/mL; after sixth injection: 1.23 ($\pm$1.33) ng/mL). Mean haematocrit remained with the normal range. Treatment exerted a positive effect on LDL cholesterol levels and glycaemic control.

Conclusions. Intramuscular TU appears to be safe and effective for the treatment of male hypogonadism under real-life clinical conditions.

S-17

PREDICTING CHD/IHD DEATH: METABOLIC SYNDROME VERSUS FRAMINGHAM SCORE: THE RANCHO BERNARDO STUDY

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Background and objectives. To compare the sex-specific predictive value of metabolic syndrome (MetS) and Framingham risk score (FRS) for the 10-year risk of death by coronary heart disease (CHD)/ischemic heart disease (IHD).

Methods. Fasting plasma glucose, lipids, lipoproteins, blood pressure, and waist girth were measured from 1984–1986 in community-dwelling men and women aged 30–79 without known cardiovascular disease. Deaths were ascertained through 2000 (with cause of death data from death certificates). MetS was defined as the presence of $\geqslant 3$ categorical components using NCEP-ATP-III criteria. A high FRS was defined as > 9 for men, > 14 for women, predicting a 10-year CHD event risk $> 20\%$.

Results. Among 665 men, 16.8% had MetS; 34.7% had a FRS > 9 in 1984–1986; 127 (19.1%) had fatal CHD/IHD by 2000. Among 1069 women, 11.9% had MetS; 6.5% had a FRS > 14; 149 (13.9%) had fatal CHD/IHD by 2000. Among men, FRS was significantly better (sensitivity and positive predictive value) than MetS in predicting CHD/IHD deaths. In contrast, among women, sensitivity and positive predictive value were poor with either method.

Conclusion. Among men FRS was a better predictor of CHD/IHD death than MetS. No differences were observed among women, possibly reflecting the smaller proportion of women who had MetS or a high FRS.

S-18

ANDROGENS PLAY A FUNDAMENTAL ROLE IN ERECTILE FUNCTION – PRO

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The risk of developing erectile dysfunction (ED) increases with age. Approximately 26% of men between the ages of 50–69 and 40% of men between the ages of 60–69 will develop some form of ED. In men, androgens decline with age, but a relationship between androgen deficiency and erectile function remains controversial. Men who underwent surgical or medical castration for management of prostate cancer or benign prostatic hyperplasia complained of ED. Patients with ED who did not respond to phosphodiesterase type 5 (PDE 5) inhibitors' therapy alone, experienced significant improvement in erectile function when treated with testosterone.

Our working hypothesis is that testosterone is critical for maintenance of penile corpus cavernosum metabolic, structural and functional integrity, which are critical for veno-occlusion and erectile function. Evidence from animal model studies strongly suggests that androgens are necessary for maintenance of penile veno-occlusive function. Androgen deprivation reduces: a) trabecular smooth muscle cell content, b) expression of endothelial and neuronal nitric oxide synthases, c) PDE 5 expression and activity, and d) produces profound ultra-structural changes in the cavernosal and dorsal

nerves of the penis. In addition, androgen deprivation promotes accumulation of adipocytes in corpus cavernosum, and alters corpus cavernosum architecture with concomitant increase the deposition of connective tissue. These metabolic and functional alterations are reversed or attenuated with testosterone treatment. We conclude that androgen deficiency produces metabolic, structural and functional alterations in the corpus cavernosum resulting in veno-occlusive dysfunction and ED. We therefore suggest that androgens play a fundamental role in erectile physiology.

S-19

ANTI-AGING MEDICINE – THE GOOD, THE BAD AND THE UGLY

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There is consensus in considering the extension of human life expectancy in the last century as a success in medicine and a societal achievement. However, it has also revealed the limits of the management of a growing old population with multiple co-morbidities for which the health systems are not prepared. Hence, the search for ways to prolong health expectancy with effective prevention of disability has become a primary goal in medicine. Besides 'anti-aging' medicine that has been practised by physicians, nurses and other health workers dedicated to the care of older people by attempting to maintain older people active with the best possible quality of life, some gerontologists assert that aging is no longer an unsolved problem of biology. There is currently much promise in research that can provide information about the underlying biology of aging and longevity, but serious research may be mistaken for 'anti-aging' medicine, which argues that the mechanisms of aging and the appropriate interventions to slow, stop, or even reverse the aging process are already known, creating false expectation not only in sick people, but also in healthy people that are everyday more interested in the availability of anti-aging methods. Funding resources for research on the biology of aging are concerned that 'anti-aging' medicine is pseudoscientific and excessively commercially driven. Indeed, 'anti-aging' medicine is a multi-billion dollar industry, often under the control of non-scientists who use terms like 'virtual immortality' and 'an ageless society' to attract customers to untested remedies that have not been studied in controlled clinical trials. Conversely, 'longevity medicine' should apply to all means that would extend healthy life, including health promotion, disease prevention, balanced diet, regular exercise, smoking cessation, as well as advanced medical care and new discoveries that result from basic research.

S-20

THE AGING MALE AFTER THE DIAGNOSIS OF PROSTATE CANCER – HOW DO THE PATIENTS MAKE CURATIVE TREATMENT CHOICES?

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Given our aging population, increasing life expectancy and prevalence of localized prostate cancer, more and more men will be faced with the complicated decisions necessary regarding the management of this onerous disease. The various risks and benefits of both standard and novel experimental treatment options, as well as the numerous sources of patient information available, makes counselling a patient diagnosed with localized prostate cancer a complex and often confusing experience.

In this lecture, the decision points from the healthcare provider's point of view, including efficacy of treatments, side effects and patient co-morbidity will be juxtaposed to the information needs that patients and family members appear to require for decisions regarding management. An understanding of information needs and the general desire for shared decision-making, especially when dealing with early prostate cancer, should facilitate a more satisfying and positive outcome for our patients.

S-21

HORMONAL CHANGES AFTER CRYOSURGERY FOR PROSTATE CANCER

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Background and aims. We have analysed the hormonal profile of 35 men who underwent total prostate cryosurgery for prostate cancer to study the hormonal changes from before and after surgery.

Methods. Hormonal analysis included: total, free, and bioavailable testosterone, serum hormone binding globulin, LH, FSH, estradiol, total oestrogen, progesterone, IGF1, DHEA, PSA, and haematocrit.

Results. Our analysis clearly reveals a rise of the LH and FSH beyond expected changes for their age.

Conclusions. This suggests that the prostate gland may play a part in the endocrine feedback system and may encourage further research in the mechanism of endocrine relationship and post-operative symptoms and morbidity.

S-22

MANAGEMENT

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Various mechanisms have been put forth to explain the change in total muscle mass with aging, including lack of regular physical activity (sedentary lifestyle), alterations in endocrine function (insulin, testosterone, growth hormone/insulin-like growth factor-1, cortisol), a loss of neuromuscular function (denervation or reinnervation), a change in protein metabolism (a deficit between protein synthesis versus degradation), nutrition (primarily amino acids), apoptosis, and disease or trauma. There is also a clear genetic influence.

For persons with sarcopenia, the primary intervention should include resistance exercise. Progressive resistance exercise training increases muscle protein mass and strength in men and women. Targeting the hormonal changes that occur with aging is an attractive intervention. Clinical trials have demonstrated that the administration of testosterone in older individuals modestly increased muscle mass, upper arm strength, bone density and grip strength. Oestrogen and testosterone may also inhibit the production of IL-1 and IL-6, suggesting that decreased levels of these hormones may have an indirect catabolic effect on muscle.

Dehydroepiandrosterone administration has shown conflicting data regarding improvement in muscle mass and strength. Levels of both growth hormone and insulin-like growth factor-I decline with age and has stimulated interest in their potential therapeutic benefit to counter sarcopenia based on their known anabolic effects.

Nutritional supplementation for sarcopenia has been controversial. High protein meals have not enhanced the myofibrillar protein synthesis rate following resistance exercise. Intravenous and oral essential amino acids increase mixed muscle synthesis in healthy older men. Several studies suggest a potential benefit of creatine, especially when combined with exercise. Whether these interventions translate into improvement in sarcopenia is not known.

Branched-chain amino acids do not improve endurance performance, and glutamine supplements do not prevent the down-regulation of the immune system after exercise in healthy athletes. Nutritional supplementation of glutamate or its precursors (glutamine, ornithine, alpha- etoglutarate and branched-chain amino acids) or branched chain amino acids increase nitrogen balance but have not been effective in promoting protein synthesis.

Bed rest reduces muscle protein synthesis and induces a loss of lean body mass, a model that simulates sarcopenia due to inactivity. Continued stimulation of muscle anabolism positively affects the preservation of lean body mass and the amelioration of functional decrement throughout inactivity. However, the loss of lean body mass is exacerbated when coupled with the persistent hypercortisolemia that accompanies trauma. Although essential amino acids promote muscle

anabolism during hypercortisolemia, it is unlikely that a nutritional intervention alone would be effective in maintaining lean body mass during severe stress or prolonged hypercortisolemia.

S-23

EFFICACY OF ORAL TESTOSTERONE REPLACEMENT IN SYMPTOMATIC LATE-ONSET HYPOGONADISM: CLINICAL AND METABOLIC RESPONSES IN A RANDOMIZED, PLACEBO-CONTROLLED STUDY

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Background. The availability of novel improved androgen preparations has led to a resurgence of interest in late-onset hypogonadism (LOH) and its treatment. The objective of this multicentre, randomized, double-blind, placebo-controlled trial was to investigate the effects of oral testosterone undecanoate (TU) on clinical outcomes associated with LOH.

Methods. In 14 study centres in 7 European countries (Austria, Belgium, Germany, France, Netherlands, Switzerland and the United Kingdom), 322 eligible men >50 years with documented testosterone deficiency (calculated free testosterone <0.26 nmol/L) were randomized to treatment for 12 months with placebo, oral TU 80 mg/d, oral TU 160 mg/d or oral TU 240 mg/d in divided doses. The effects of treatment on LOH symptoms were measured using the Aging Males Symptoms (AMS) rating scale. Bone mineral density (BMD), lean body mass (LBM) and body fat mass (BFM) were measured using dual energy X-ray absorptiometry. Prostate safety was monitored using prostate-specific antigen (PSA) and the International Prostate Symptom Score (IPSS).

Results. Oral TU treatment in men with LOH symptoms of moderate severity did not result in statistically significant changes on the total score of the AMS rating scale. The AMS sexual symptoms sub-domain improved statistically significantly with oral TU 160 mg/d at months 6, 9 and 12 ($p < 0.05$). After 12 months, treatment with oral TU was associated with a dose-dependent increment in BMD at the lumbar vertebrae and total hip (240 mg/d), as well as an increase in LBM (80, 160 and 240 mg/d) and a decrease of BFM (160 mg/d). Oral TU had no effects on serum PSA level or IPSS. Oral TU was well tolerated and there were no between-group differences in (serious) adverse events or drop-out rates.

Conclusions. Treatment with oral TU improved objective symptoms of LOH, but was not different from placebo on subjective LOH symptoms (except for sexual function) as assessed with the AMS rating scale. There was no increase of prostate adverse events.

S-24

BENIGN PROSTATIC HYPERPLASIA (BPH): ITS MANAGEMENT

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BPH affects 50% of men in their fifties with an increase in prevalence as they age, rising to 90% when they reach their eighties. Historically, it was thought that prostatic enlargement *per se* was the cause of urinary symptoms. It is now recognized that lower urinary tract symptoms (LUTS) have a more complex relationship with prostatic size. The prevalence and symptoms of BPH will be reviewed.

The issues surrounding indications for treatment will be discussed in the setting of how it bothers the patient. Most patients do not have an absolute indication for treatment (e.g. urinary retention, renal failure) so that the degree of bother is quite subjective, and quite variable for the same set of symptoms. Likewise bother may be greater for the partner than the patient (e.g. nocturia $>$twice per night). For patients in whom treatment is requested or necessary, the options range from watchful waiting through medical therapy, minimally invasive therapy to traditional prostatic resection. This review will focus on medical therapy comparing the different classes of drugs (alpha blockers versus 5 α-reductase inhibitors) and the studies evaluating their effects on long-term outcome. For the minimally invasive therapies, relatively few long-term studies have been performed (microwave thermotherapy, radiofrequency ablation, and laser treatments). Data available for these treatments will also be reviewed.

S-25

PROSTATE CANCER AND TESTOSTERONE

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For several decades it has been assumed that higher T leads to greater growth of benign and malignant prostate tissue, but this view has come under greater scrutiny over the last several years. Although there are as yet no large-scale, long-term controlled studies of T therapy to provide a definitive assessment of risk, numerous smaller clinical trials as well as population-based longitudinal studies consistently fail to support the historical idea that T therapy poses an increased risk of prostate cancer or exacerbation of symptoms due to benign prostatic hyperplasia. This lack of prostate risk despite increased serum T appears to be explained by data showing that exogenous T does not raise intra-prostatic concentrations of T or dihydrotestosterone, suggesting a saturation model. In contrast, there is mounting evidence that low serum T is associated with greater prostate cancer risk, and more worrisome features of prostate cancer. In conclusion, the available evidence strongly suggests that T therapy is safe for the prostate. Given that the population at risk for testosterone deficiency overlaps with the population at risk for prostate cancer, it is still strongly recommended that men undergoing T therapy undergo regular monitoring for prostate cancer.

S-26

THE PROGRESSION OF NOCTURIA: A PROSPECTIVE LONGITUDINAL STUDY IN MEN AGED 65 TO 103 YEARS

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Background and aims. Describe the progression of nocturia in a random sample of men, assessed in 1992 and 2003.

Methods. In 1992, 5,556 men (65–99 years) were randomly selected from the Population Register. They received a postal questionnaire about nocturia and other LUTS. The response rate was 74% ($n=4{,}113$). The responding men who were still available were re-assessed in 2003, using the same questionnaire technique.

Results. In 2003, 936 of 1,237 available men, aged 76–103 years, responded (76%). Complete data on nocturia were available for 534 men, on both occasions. The results are shown in the table. Nocturia once was reported by 64% ($n=342$) in 1992 and 31% ($n=165$) 2003. Over 60% of the men ($n=114+53+19+20$) reporting nocturia once, in 1992, reported nocturia twice or more in 2003. The percentage number of men having nocturia five times or more, increased from 2% ($n=11$) to 7% ($n=36$).

Conclusions. Nocturia is common, and the number of nightly micturitions increase with age. These data reflect the dynamic progression of nocturia in men in the later stages of life.

S-27

THE PROGRESSION OF OVERACTIVE BLADDER SYMPTOMS: A PROSPECTIVE LONGITUDINAL STUDY IN MEN AGED 65 TO 103 YEARS

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Background and aims. To re-assess in 2003 the prevalence of overactive bladder symptoms (OAB) in a random sample of men, initially assessed in 1992.

Methods. In 1992, 5,556 men (65–99 years) were randomly selected from the Population Register. They received a postal questionnaire about urinary incontinence (UI), OAB, and other lower urinary tract symptoms. The response rate was 74% ($n = 4{,}113$). The men who responded and who were still available were re-assessed in 2003, using the same questionnaire technique. On both occasions, the presence or absence of OAB symptoms were classified as follows: No OAB symptoms = No OAB; OAB without UI = OAB-UI; and OAB with UI = OAB + UI. OAB and UI were assessed according to the current ICS definitions.

Results. In 2003, 936 of 1,237 available men, aged 76–103 years, responded (76%). Complete data regarding OAB and UI were available for 636 men from both 1992 and 2003. The results are shown in the table. OAB symptoms were reported by 131 + 24 men (24.4%) in 1992 and 276 + 70 (54.4%) in 2003. Over 50% of the men with no OAB symptoms in 1992 reported OAB symptoms in 2003 ($n = 202 + 39$).

Conclusions. The prevalence of OAB symptoms increased markedly in the same men assessed longitudinally over this 11-year period. The data reflect the dynamic progression of OAB symptoms in men in the later stages of life.

S-28

HEART FAILURE IN THE ELDERLY – GENDER AND OUTCOMES IN CHRONIC HEART FAILURE

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Background. Most heart failure patients are older adults and most heart failure related deaths and hospitalizations occur in older adults. Older men are more likely to develop heart failure than older women. However, to what extent gender plays a role in the natural history of heart failure is not well known.

Methods. Of the 7,788 ambulatory chronic heart failure patients who participated in the Digitalis Investigation Group trial, 5,862 (75%) were men and 1,926 (25%) were women. Propensity scores for being women were calculated for each patient and were used to match 1,669 pairs of men and women. The impact of gender on mortality and hospitalization during 40 months of median follow-up was assessed using matched Cox regression analyses.

Results. All-cause mortality occurred in 502 female and 595 male patients (hazard ratio (HR) = 1.22, 95% confidence interval (CI) = 1.06–1.39, $p = 0.004$. Compared to women, men with heart failure had significantly higher risk of death from cardiovascular causes (HR = 1.18, 95% CI = 1.01–1.37, $p = 0.037$). No significant association was found between gender and hospitalization due to all causes (HR = 0.97, 95% CI = 0.87–1.08, $p = 0.538$) or cardiovascular causes (HR = 0.91, 95% CI = 0.81–1.02, $p = 0.121$). Interestingly, hospitalization due to unstable angina was significantly decreased in men with heart failure (HR = 0.72; 95% CI = 0.58–0.90; $p = 0.003$).

Conclusion. Men with chronic heart failure were more likely die than women. However, there were no differences in hospitalization rates, except for those due to unstable angina, which was lower in men.

S-29

SUBCLINICAL THYROID DYSFUNCTION AND MORTALITY: AN ESTIMATE OF RELATIVE AND ABSOLUTE EXCESS MORTALITY BASED ON DATA SEARCHES AND TIME-TO-EVENT META-ANALYSES

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Background and aims. If, and to what extent, patients with subclinical hyper- or hypothyroidism are more (or less) likely to die than euthyroid control subjects remains a matter of controversy.

Methods. Time-to-event meta-analyses and life-table methodology.

Results. Based on seven prospective cohorts (290 patients) with subclinical hyperthyroidism, random-effects meta-analyses estimated that the pooled hazard ratio (HR) for all-cause mortality was 1.72 (95% confidence interval (CI), 1.35–2.19; $p < 0.0001$). Using the pooled HR and standard life-table methods applied to a US reference population, we estimated that a white US woman, when diagnosed with subclinical hyperthyroidism at age 60, has an excess mortality of 1.1%, 3.0%, and 7.1% at 2, 5, and 10 years after diagnosis, respectively. Likewise, a white US man, has an excess mortality of 1.7%, 4.6%, and 10.1%, respectively.

For the nine prospective cohorts (1,580 patients) with subclinical hypothyroidism, the observed heterogeneity (Q test $p = 0.006$; $I^2 = 63\%$) disappeared after pooling cohorts in predefined subgroups: the pooled HR for all cause mortality was 1.03 in cohorts from the community (95% CI, 0.78–1.35; $p = 0.83$), and 1.76 (95% CI, 1.36–2.30; $p < 0.001$) in cohorts of patients with comorbidities.

Conclusions. Patients with subclinical hyperthyroidism demonstrate an almost two-fold increase in relative mortality from all causes versus euthyroid control subjects. The absolute excess mortality after diagnosis depends largely on age, but also on gender. Beyond the age of sixty, excess mortality increases dramatically and is always higher among men than among women with subclinical hyperthyroidism. For patients with subclinical hypothyroidism, the relative risk of all-cause mortality is increased only in patients with comorbidities.

S-30

OBESITY IN THE OLDER MALE

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The onset of obesity in most men tends to occur in young adulthood, and progresses through middle age. Body weight may decrease after the age of 65, but fat mass usually does not, and tends to become more viscerally distributed. Muscle mass peaks between the third and fourth decade and declines thereafter, accompanied by reductions in strength as a result of factors which include decreased physical activity, inadequate nutrition, vascular disease, increased cytokines and declines in anabolic hormone levels. Men with 'sarcopenic obesity' are at highest risk of obesity related disease and complications relating to frailty.

Energy expenditure decreases by around 165 kcal/decade, primarily due to changes in voluntary physical activity and, to a lesser extent, a reduction in resting metabolic rate. Reductions in energy expenditure are greatest in obese men, and men with the highest energy expenditures have the lowest abdominal fat mass. Intense physical activity is associated with higher lean body mass with increasing age. Overall energy intake may decrease with advancing age, but probably to a lesser extent than energy expenditure. There is a correlation between

increasing energy intake from fat and decreased energy from fibre and increasing fat mass in middle aged and older men.

Higher BMI values are associated with higher mortality in middle-aged men due to cardiovascular disease and cancers. Afro-American men have a lower BMI related mortality risk compared with Caucasian men possibly related to greater lean body mass and levels of physical activity. Excess visceral fat and metabolic syndrome confer a marked increase in cardiovascular (CV) risk, particularly when associated with obstructive sleep apnoea, a situation also associated with low plasma androgens and increased cytokines thereby compounding the age related decrease in lean body mass. While the CV risks of an increased BMI flatten out over the age of 65, problems such as mobility, frailty, reduction in cognitive function and dementia become more prominent.

Preventing an increase in obesity in middle age men, with regular physical activity and healthy nutrition, should be a public health priority.

S-31

CORRELATES OF LOW TESTOSTERONE AND SYMPTOMATIC ANDROGEN DEFICIENCY IN A POPULATION-BASED SAMPLE: RESULTS FROM THE BOSTON AREA COMMUNITY HEALTH (BACH) SURVEY

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Introduction. Risk factors for low testosterone and symptoms of androgen deficiency (AD) may be modifiable. We sought to identify demographic, anthropometric and medical correlates of low testosterone and symptomatic AD among community-dwelling men.

Methods. Analyses were derived from the Boston Area Community Health Survey, an epidemiologic study conducted from 2002–2005 in a population-based random sample from Boston, Massachusetts. Data were collected by face-to-face interview from 2002–2005; a venous blood sample was also collected. Multivariate logistic regression was used to estimate odds ratios (ORs) and 95% confidence intervals (CIs) for associations of a wide range of covariates with (1) low testosterone and (2) symptomatic AD. The operational definition of 'low testosterone' was serum total testosterone <300 ng/dl and free testosterone <5 ng/dl; symptomatic AD was defined as the additional presence of symptoms: any of low libido, erectile dysfunction, or osteoporosis; or 2 or more of sleep disturbance, depressed mood, lethargy, or diminished physical performance.

Results. Data were available for 1,822 men. Factors positively correlated with low testosterone included age (OR = 1.03, 95% CI: 1.01–1.05); low per-capita income ($\leq$\$6,000 per household member) (OR = 2.39, 95% CI: 1.18–4.83); and waist circumference (per 1 cm increase) (OR = 1.05, 95% CI: 1.04–1.07). Only age (OR = 1.03, 95% CI: 1.00–1.06), waist circumference (OR = 1.07, 95% CI: 1.04–1.09) and self-reported health status were associated with our construct of symptomatic AD. In both models, waist circumference was most strongly associated.

Conclusions. Our study identifies waist circumference as a potential modifiable risk factor for low testosterone and symptomatic AD.

S-32

SYMPTOMATIC ANDROGEN DEFICIENCY: PREVALENCE, NATURAL HISTORY AND TREATMENT PATTERNS IN A COMMUNITY-BASED SAMPLE

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Introduction. While much is known about the basic epidemiology of low testosterone levels in men, comparatively less is known about symptomatic androgen deficiency (AD) (low testosterone plus clinical symptoms).

Methods. Using data from population-based studies (the Boston Area Community Health (BACH) Survey and the Massachusetts Male Aging Study (MMAS)), this presentation provides a broad view of some key recent epidemiologic data on symptomatic AD.

Results. Crude prevalence of symptomatic AD in MMAS was 6–12% and in BACH, 6%. Prevalence increased significantly with age in both studies. Among men with follow-up data in the MMAS, the likelihood of symptomatic AD increased markedly for those subjects who had exhibited symptomatic AD previously (OR = 3.8 (95% CI: 1.9–7.4)). However, 56% of subjects who exhibited symptomatic AD experienced remission over time, suggesting an unstable health state. In the BACH Survey, 88% of men with symptomatic AD were not being treated with testosterone therapy. While men with untreated AD were more likely to report no insurance and lower socioeconomic status, these men also reported a higher mean number of annual visits to healthcare providers and were more likely to seek regular care than men without AD.

Conclusions. MMAS and BACH provide key data on the epidemiology of symptomatic AD in men. While less common than the prevalence of low testosterone (by definition), changes in population demographics will cause the number of men with symptomatic AD to rise dramatically in the coming decades. Importantly, a significant proportion of these men are not being treated.

S-33

THE ROLE OF TESTOSTERONE AND ESTRADIOL LEVELS IN AGE-RELATED DECLINES IN PHYSICAL FUNCTION AMONG MEN

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Introduction. Aging in men is accompanied by substantial declines in physical function. While the testosterone and estradiol increase body composition and physical strength in men, it is unknown whether these improvements translate into improved physical function. We tested a model of aging, hormones, body composition, strength, and physical function with data obtained from men enrolled in the Boston Area Community Health/Bone (BACH/Bone) Survey.

Methods. Early morning serum testosterone was measured by immunoassay and estradiol by LC-MS/MS, strength by hand dynamometer, and lean and fat mass by dual-energy X-ray photon absorptometry (DXA). Physical function was measured by a summated index (derived from walk and chair stands test). A total of 810 BACH/Bone subjects (aged 30–79) had data available on the measures of interest. Path analysis was used to test pathways from age to physical function via hormones, body composition, and strength.

Results. Grip strength and physical function declined strongly with age. For instance, 10 y of aging was associated with a 0.49-point (scale: 0–7) decline in physical function. Age differences in total testosterone and estradiol were relatively weak in comparison to age differences in their free fractions. Weak age-adjusted correlations were observed between testosterone and estradiol and measures of physical function. Path analysis, however, revealed a positive association between testosterone and lean mass, and a strong negative association between testosterone and fat mass. Lean and fat mass, in turn, were strongly associated with grip strength and physical function.

Conclusions. The age related decline in serum testosterone among men affects physical strength and functional outcomes via its effects on lean and fat mass.

S-34

SEX STEROIDS, BODY COMPOSITION AND HIP GEOMETRY IN AGING MEN

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Introduction. Previous studies have indicated an association between elevated circulating testosterone (T) or estradiol (E2) concentrations and elevated bone mineral density (BMD),

implying that T or E2 plays a role in the etiology of fracture. BMD, however, is not a direct measure of the strength of bone, which depends not only on the amount of bone material present but also its architectural arrangement.

Methods. Using data on 808 adult men enrolled in the Boston Area Community Health/Bone (BACH/Bone) study, we examined T and E2 in relation to the geometry of the proximal femur at three sites: the narrow neck (NN), intertrochanter (IT), and shaft (S). Hip geometry parameters were obtained from dual X-ray absorptiometry images using the Hip Structural Analysis technology. These measures included site-specific assessments of BMD; outer diameter; cross sectional area (CSA); and section modulus (Z), an index of bending strength. Analyses adjusted for subjects' age, height, total body lean mass (LM) and fat mass (FM), and level of physical activity, the latter measured by the validated Physical Activity Scale for the Elderly (PASE).

Results. There were significant cross-sectional age trends in free T and E2 In age-adjusted models, total and free E2 were positively associated with hip strength parameters, while testosterone was not. Further adjustment for age and other parameters (LM, FM, height, PASE) was sufficient to remove most associations.

Conclusions. Circulating estradiol and proximal femur strength exhibit a strong positive association, one that is mediated by age and body composition.

S-35

GROWTH HORMONE AND AGING

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Aging is associated with decreased growth hormone (GH) secretion and dynamic response. With advancing age, GH secretion declines at a mean rate of 14% per decade in normal adults after 20 years of age. Age related changes in body composition resemble those occurring in GH deficiency (GHD) state in adults. It has been proposed that recombinant human growth hormone (rhGH) replacement may reverse these 'aging' changes in the older adult. Replacement of rhGH in healthy elderly persons has been reported to improve the body composition, but there are some adverse effects. rhGH therapy has been found to be useful in several clinical conditions, including malnutrition in the elderly. However, the use of rhGH is associated with an increase in mortality in critically ill patients. At present, the risk of replacement of growth hormone appears to outweigh its potential benefits in the general healthy elderly and critically ill adults. However, a short course of low-dose rhGH replacement can be used in malnourished older adults with serious adverse effects.

S-36

EPIDEMIOLOGY OF AGING MALES IN AUSTRALIA

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Compared with women, Australian men have higher rates of physical and psychological disease and death, and are also less likely to adopt a healthier lifestyle.

The Men in Australia Telephone survey (MATeS) studied a representative sample ($n = 5{,}990$) of Australian men (40 years and older) obtained by contacting a random selection of households with unbiased sampling stratified by age and state. A response rate of 78.5% was achieved. A computer-assisted telephone interview was administered to explore relationship issues, general and reproductive health and related knowledge and beliefs.

The Florey Adelaide Male Aging Study (FAMAS) is a multi-disciplinary population cohort study examining the health and health-related behaviours of 1,195 randomly selected men, aged 35–80 years, and living in the north-west regions of Adelaide. It employs a broad range of questionnaires and clinic-based procedures in assessing the biomedical, socio-demographic, behavioural, physical and psychological interactions that contribute to the health and health-related behaviours of men.

Together these studies find a high burden of reproductive health disorders, chronic physical and psychological disease and a high prevalence of risk factors for the development of cardiovascular disease, diabetes mellitus and sexual and lower urinary tract dysfunction and poor composition with a concomitant risk of frailty and dependence.

A number of socio-demographic factors are associated with a significant increase in disease risk including: low income status, lack of education, unemployment, high waist circumference, elevated cholesterol, a family history of obesity or cardiovascular disease and being unmarried.

Although over 80% of the men in these studies visited their general practitioners over the previous 12 months, this was mostly for review of established disease, or an acute health crisis and there was a low level of specific enquiry on the part of both men and their healthcare practitioners in relation to other health issues.

Taken together these data highlight the need for gender focused healthcare at a practitioner level, and a specific men's health strategy at a public health level so that doctors visits are better utilized, the most vulnerable men are targeted, and systematic as well as opportunistic strategies are employed to effectively educate men more about their health.

S-37

EPIDEMIOLOGY OF AGING MALES – SINGAPORE

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Aging affects every human compartment and in an integrated manner. The effects of aging are dependent on diverse parameters including genetic, physiological, socio-economical, and geopolitical factors. Hence, the net impact of aging is different in different people groups. An epidemiological study was carried out in more than 500 healthy Singaporean Chinese men.

Age was found to impact various physiological, anthropometric, physical, biochemical, hormonal and functional parameters in these men. Cognitive functions such as reaction time and short-term memory were better in younger than older men. Adiposity was higher in older than younger men, and androgen levels were higher in younger than older men.

Some peculiar trends were observed and these might be specific to the cohort of Singaporean Chinese men. For example, older men exercise significantly more frequently and intensely, and were less stressed at work and had better sense of wellbeing than their younger counter parts.

It was noted that lifestyle and other physiological factors could modulate some age dependent effects on some physiological and functional capacities. Among the lifestyle parameters studied, the regularity and intensity of exercise had significant beneficial effects on hormone levels, blood pressure, cognitive function and adiposity. Perceived work stress, spousal relationship, sleep duration, and androgen levels have significant associations with sexual functions, adiposity, sense of well being and physical tone and strength. The observations imply that it is possible to negate some of the adverse effects of aging by promotion of relevant lifestyle changes and perhaps some form of hormone augmentation therapies.

S-38

CHARACTERISTICS OF MEDICAL SEEKING BEHAVIOUR AMONG LOH AND ED OUTPATIENT CLINICS IN A JAPANESE UNIVERSITY HOSPITAL

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Background and aims. LOH syndrome has been attracting much interest because of decreasing QOL among middle-aged males. Better understanding of the difference between LOH and ED outpatients concerning medical seeking behaviours will help to offer proper medical services for patients.

Methods. Patients who have visited LOH and ED outpatient clinics at St Marianna University Hospital were enrolled into this study during from Jan 2002 to Jan 2006. Numbers of patients of LOH and ED clinics were 252 (Age: 42.0 $\pm$ 5.0 y) and 70 (36.4 $\pm$ 6.1 y), respectively. Self-administered questionnaires including the International Index for Erectile Dysfunction 5 (IIEF5), Aging Males' Symptom (AMS) score, SF36, Hospital Anxiety and Depression Score (HADS), Total-Testosterone and Free Testosterone were gathered from all participants. This study was approved by ethical committee of St Marianna University.

Results. The prevalence of severe ED ($<$IIEF5 score 8) in ED outpatients (24/36, 66.7%) was significantly higher than in LOH outpatients (39/78, 50%). AMS psychological domain and AMS-somatovegative domain in LOH outpatients (13.2 $\pm$ 4.7, 20.6 $\pm$ 5.4) were significantly higher than in ED outpatients (9.9 $\pm$ 5.0, 15.2 $\pm$ 5.0), respectively. HAD scores in LOH outpatients were significantly higher than in ED outpatients. All eight sub-domain scores of SF36 in LOH outpatients showed significantly lower than in ED outpatients. No statistical differences were observed in total testosterone and free testosterone between LOH and ED outpatients.

Conclusions. Patients who visited LOH clinics were considered to have lower anxiety, depression and QOL scores compared with ED outpatients. These findings suggested LOH outpatient clinics support not only physical but also mental care in their treatment.

S-39

RETIREMENT IS BOTH GENDER SPECIFIC AND CULTURALLY BOUND

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Background and aims. Prior to the enactment of the National Insurance Scheme Act in 1966, retirement was not a commonly accepted phenomenon in the Jamaican culture. Men who had not contributed to this scheme would not be prepared for retirement, cultural conditioning favoured 'working until death'. To examine the practices and patterns currently among Jamaican men age 55 years and over could bring understanding.

Methods. A quantitative survey of 2,000 men age 55 years and over in one parish of Jamaica using cluster sample methodology.

Results. Sixty six per cent (66.5%) of respondents had no plan to retire; while 16.6% did not think about it, 14.4% were self employed and would work until they died and 2.5% said their children would take care of them. Of those who had a plan the major factors considered were where they would live (89.4%); this was followed by (8.4%) concerned with whom they would live, while healthcare was considered by only 2.2% of men.

Conclusions. Men have generally not had well thought-out retirement plans and this in the light of changing family structures (shift away from extended family systems), increasing life expectancy, increasing economic uncertainties and the epidemiological transition with increasing morbidity from chronic non-communicable disease and their attendant healthcare costs. There are implications for healthcare and social security policies particularly in the context of the developing world.

S-40

TESTOSTERONE ADMINISTRATION IN ADDITION TO EXERCISE AND DIET ENHANCE THERAPEUTIC EFFECTS IN MEN WITH TYPE 2 DIABETES WITH SUBNORMAL TESTOSTERONE

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Background and aims. Men with metabolic syndrome (MetS) and type 2 diabetes mellitus (DM2) have low testosterone. Healthy diet and regular exercise are important for treatment of DM2. This study tested the potential therapeutic effects of testosterone (T) administration in addition to exercise and dietary modification in men with MetS and newly diagnosed DM2, all with subnormal total T ($<$300 ng/dL).

Methods. 32 men (35–70 years) with MetS + DM2 followed a physician-guided 18-month moderate exercise programme (3×30 min walking $+3 \times 15$ min muscle training per week) and a Mediterranean type diet. Sixteen out of 32 patients received also transdermal T gel (50 mg T/day) to restore T levels to the low-normal range. Follow-up was 18 months.

Results. Mean plasma total T in the diet + exercise only group were 196 ng/dL at baseline and 212 ng/dL at 18 months after the intervention ($p < 0.01$). Mean plasma TT in the diet + exercise + T gel group were 198.2 ng/dL at baseline and 404.1 ng/dL at 18 months ($p < 0.01$). Exercise + diet had beneficial effects in their own right on waist circumference*, on HbA1c, triglycerides*, HDL*, on blood pressure*, adiponectin, CRP and proinsulin*. In men with additional T treatment, beneficial effects were significantly larger on most of the variables (marked with *).

Conclusions. Regular exercise plus a healthier Mediterranean-type diet had significant beneficial effects in men with MetS and DM2. Restoring T levels to the low-normal range significantly enhanced the therapeutic effects of exercise and diet alone.

S-41

TESTOSTERONE TREATMENT IMPROVES MUSCLE STRENGTH AND PHYSICAL FUNCTION IN PRE-FRAIL AND FRAIL ELDERLY MEN: A RANDOMISED PLACEBO-CONTROLLED STUDY

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Background and aims. Testosterone (T) improves muscle strength in hypogonadal men. It is unclear if testosterone has similar effects in pre-frail and frail elderly men with low T. We conducted a randomized double-blind placebo-controlled parallel group study to determine the effects of T on muscle mass and strength, physical function and quality of life in pre-frail and frail elderly men.

Methods. 262 pre-frail and frail elderly men, mean age (range) 74 (65–89) yrs received testosterone (25–75 mg/d) or placebo gel for 6 months. Outcome measures included muscle strength ((primary end points – isometric peak torque, knee extension (EIMPT) and flexion (FIMPT)), physical function tests, lean mass (DXA) and quality of life.

Results. T at baseline was 10.9 $\pm$ 3.1 and 11 $\pm$ 3.2 mean (SD) nmol/L in active and placebo groups. T increased to 22.9 $\pm$ 10 nmol/L in the active with no change in placebo group (11.3 $\pm$ 5.2 nmol/L). EIMPT improved by 6% ($p = 0.042$) in active and 3% ($p = 0.17$) in placebo group. Men who reached target T during treatment achieved higher EIMPT (10% increment) versus those that did not (2%). Physical function tests improved but did not reach statistical significance. Lean mass increased (1.07 kg, $p < 0.0001$) and physical function domain improved in active versus placebo group.

Conclusions. This is the first study to demonstrate improvement in muscle strength, lean mass and physical function in pre-frail and frail elderly men treated with transdermal testosterone.

S-42

THE NATURAL HISTORY OF TESTOSTERONE DEFICIENCY IN MEN AND OUTCOMES ASSOCIATED WITH TESTOSTERONE THERAPY: A MULTI-NATIONAL PATIENT REGISTRY

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Background and aims. Male hypogonadism is a clinical disorder consisting of reduced circulating testosterone levels in addition to characteristic symptoms of testosterone deficiency. Despite the prevalence and potential impact of the problem, little is known about the natural history of testosterone deficiency in men. Current treatment approaches include a variety of hormonal therapies, although little information is available about the extent of their use, and long-term efficacy and safety.

Methods. A multi-national patient registry is being developed based on current guidelines from the Agency for Healthcare Research and Quality (AHRQ). Participants in the registry include men with: (1) late-onset hypogonadism; (2) hypogonadism secondary to medical illness; and (3) classical hypogonadism (e.g. Klinefelter's syndrome). A total of 1,000 patients will be enrolled based on 3 levels of stratification: (1) Geographic (US versus Europe); (2) Age (<40 yr, 40–59 yr, and >60 yr); and (3) among those 40 $<$ yr treatment status at baseline (treated versus untreated).

Results. Patients will be observed at baseline, 3 months, and yearly thereafter. Data collection will include a complete medical history, physical examination, blood sampling, and patient questionnaire. In addition, comprehensive assessment of prostate health outcomes will be performed.

Conclusions. In addition to providing much-needed data on the natural history of hypogonadism, the registry will serve as a resource for ancillary studies of genetic or other biomarkers for testosterone deficiency in men, in addition to providing a network of investigators and patients for future cost-efficient clinical trials.

S-43

TESTOSTERONE, MEMORY AND COGNITION. COMPLEX INTERACTIONS AND POTENTIAL RISK FACTORS FOR AGING

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Background and aims. Natural age related declines in testosterone (T) are associated with decrements in cognitive abilities independent of health status. Low T levels over time are associated with increased risk for developing Alzheimer's disease (AD). These findings suggest that men with low T levels are most at risk for age related cognitive decline and AD and therefore most likely to benefit from T supplementation to prevent the development of AD or age associated cognitive decline.

Methods. Studies in our laboratory as well as others provide support that both hypogonadal and eugonadal men demonstrate cognitive improvements from T supplementation for brief treatment periods (6–12 weeks), when assessed at a supraphysiological or peak level. However, not all studies have reported beneficial effects of T supplementation. In addition to behavioural changes, T may reduce further cognitive decline due to effects on pathophysiological biomarkers related to AD. Androgens may also have a role in modulating AD onset and progression in MCI individuals due to interactions with apolipoprotein E*4 (APOE*4) as androgens protect against the cognitive declines observed in transgenic APOE mice.

Results. Findings from studies of T supplementation in older men and Alzheimer's disease and MCI patients and their effects on cognition will be reviewed with particular emphasis on dose, design and measurement issues. Findings from our own laboratory (Cherrier) will also be discussed, including the role of estradiol in cognition for men.

Conclusions. Finally, the potential therapeutic benefit and adverse effects of T supplementation will be reviewed.

S-44

IS CALCULATED BIOAVALAIBLE TESTOSTERONE A RELIABLE VALUE?

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Background and aims. In some studies, bioavailable testosterone (BT) is calculated (cBT) from the mass action law, and in others BT is assayed (aBT) by immunoassay or mass spectrometry (GC/MS). The aim of the study was to evaluate the influence on cBT, of affinity constant values of T to SHBG and of androgens that also bind to SHBG.

Methods. In 503 healthy men aged 20–74 years, androgens were assayed; total testosterone (TT), dihydrotestosterone (DHT), and Δ5-androstenediol (Δ5-A-diol) by GC/MS, BT was assayed after ammonium sulphate SHBG precipitation. SHBG was measured by radio immunoassay (RIA). BT was also calculated according to Vermeulen's equation.

Results. Aging brings on decrease in TT (slight), BT and Δ5-A-diol (significant), no variation in DHT and an increase in SHBG serum levels. Among the 142 men under 40 years, the lower normal limit was between 2.25–2.70 nmol/L for aBT. The lower cBT limit was two-fold higher than aBT. Optimizing the affinity constants in Vermeulen's equation, cBT close to aBT was obtained. However, when young and older subjects were paired for the same SHBG and TT levels; a significant lower aBT in older subjects was found pointing out the role of the declining concentration in serum Δ5-A-diol in old men, on BT calculation.

Conclusions. The lower normal serum aBT level in normal men is between 2.25 and 2.70 nmol/L. The higher serum cBT levels in men, recently reported in aging male, could be due to the choice of inadequate association constants of TT for serum proteins and to the age related decline of Δ5-androstenediol concentration.

S-45

FREQUENCY AND CLUSTERING OF SYMPTOMS OF ANDROGEN DEFICIENCY IN OLDER MEN WITH AND WITHOUT LOW BLOOD TESTOSTERONE LEVELS

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Background and aims. There is little population-based information on the prevalence or degree of overlap of symptoms commonly attributed to low testosterone levels in older men.

Methods. In 2003, we mailed the Androgen Deficiency in Aging Males (ADAM) questionnaire of Morley to older male members of the Rancho Bernardo Study (RBS) cohort.

Results. A total of 671 RBS men responded; 350 were 65 years of age or older (range 65–100), 235 of whom had testosterone measured using archived samples obtained in 1999–2001. Rates of 'yes' responses for the 11 ADAM questions ranged from 12% to 81%; 59% reported 1 or more symptoms of sexual dysfunction, more than 50% reported impaired physical function or loss of vitality, and 39% reported psychological symptoms. Overall, 76% answered yes to 3 or more ADAM questions, 55% answered yes to 4 or more, and 1 in 4 men qualified for 2 or more symptom categories. There was a higher prevalence of men with low testosterone (defined as the lowest tertile, <360 ng/dl) in each symptom group. An increasing number of symptom categories (zero to four) was associated with a stepwise decrease in testosterone levels (p for trend $= 0.04$) and a progressive increase ($p = 0.03$) in the prevalence of low testosterone.

Conclusions. These results suggest that clusters of symptoms identify more men with low testosterone levels than single symptoms.

S-46

ESTRADIOL AND METABOLIC SYNDROME IN OLDER MEN: THE INCHIANTI STUDY

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Background and aims. Metabolic syndrome (MetS) is a risk factor for cardiovascular disease and its prevalence increases with age. In older men, MetS has been associated with low testosterone which could be explained by an increased conversion in estradiol (E2), resulting in decreased testosterone/estradiol ratio. Although the role of E2 in men is still debated, few studies show a positive association between E2 and artery disease. However, no study has tested the association of E2 and MS in older men. Therefore we investigated the relationship between estradiol, testosterone/estradiol ratio and MS.

Methods. 452 men had complete data on E2, testosterone, insulin, SHBG, IL-6 and albumin. Free testosterone and free E2 were calculated by Vermeulen formula. Total testosterone/total estradiol ratio was calculated. MetS was classified according to ATP-III criteria. Multivariate analyses were used to test the relationship between hormones and MetS.

Results. Participants with MetS had significantly higher free and total E2 ($p < 0.001$) ($p = 0.003$) and lower total testosterone/total E2 ratio ($p < 0.001$). After adjusting for age, smoking, alcohol, physical activity, IL-6 and insulin, testosterone/E2 ratio was negatively associated with MetS ($p = 0.0004$) whereas log (total E2) ($p = 0.01$), and log (free E2) ($p = 0.0003$) were positively associated with MetS. After further adjustment for BMI, Log (free E2) (beta $\pm$ SE, 0.08 ± 0.03 $p = 0.021$) and testosterone/estradiol ratio (-0.0003 ± 0.0001, $p = 0.013$) but not log (total E2), were associated with MetS.

Conclusions. In older men high E2 and low testosterone/estradiol ratio are associated with MS, independent of potential confounders. BMI is one possible mediator of this relationship.

S-47

SEXUAL COUNSELLING FOR PATIENTS WITH DYSFUNCTIONAL EJACULATORY DISORDERS

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Background and aims. In recent years, sexual disorders like dysfunctional ejaculation seem to be on a rise and among those, erectile disorders are the most frequent problem discussed. This problem shows 30% of incidence among the patients coming to the Urology operative unit of Villa Sofia Hospital in Palermo. Among those, patients with delayed or impossible ejaculation (anejaculation/anorgasmia) have been described regularly.

Methods. From 2000 to today we have managed a list of 460 patients with ejaculation disorders. Of these patients, 70% showed fast ejaculation with range variability from ante PORTAM to a few minutes, while 25% of patients presented delayed or impossible ejaculation and the remaining 5% had various sexual disorders.

Results. Of the patients with fast ejaculation 40% presented prostatitis conditions and needed antibiotic therapy, these patients reported an improvement of the management of the ejaculation condition within a period of about 2 months. 30% of the patients exhibited an inflammation of the prostate or inflammation of the prostate skin. In this case the antibiotic therapy did not change the ejaculation timing and it was necessary to integrate a cycle of behavioural therapy of ejaculatory reflex. 30% of patients which did not present organic causes have requested behavioural therapy advice. Among the patients with delayed ejaculation, over 50% was accountable to pharmacological therapy, while the remaining were advised to follow analytical therapy.

Conclusions. Our working group of andrologist, urologists and psychotherapists has obtained resolution of 80% of the patients' condition, with better response in the cases of fast ejaculation problems.

S-48

MEN WITH ERECTILE DYSFUNCTION HAVE HYPOGONADISM DUE TO VARIED CHRONIC ILLNESSES

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Background and aims. The prevalence of hypogonadism increases with age, as does the prevalence of ED. Multiple articles in the literature show the increased incidence of ED and hypogonadism in diabetes. There is little data on other conditions. We wish to evaluate the incidence of hypogonadism in men with ED who had a wide variety of medical and psychological chronic illnesses.

Methods. Testosterone levels were measured in 990 consecutive men who presented for consultation for ED. The definition of hypogonadism was a total T < 300 ng/dL, or a free T < 10 pg/mL; two thirds of the men met both criteria.

Results.

Condition	N	# Hypo.	(%)	#1° Hypo	(%)	# 2° Hy
DM	229	78	(34.0)	12	(5.2)	66
HTN	354	109	(30.8)	15	(4.2)	94
ASCAD	197	69	(35.0)	17	(8.6)	52
Asthma	42	19	(45.2)	1	(2.4)	18
Seizures	53	18	(34.0)	3	(5.7)	15
OSA	42	27	(64.3)	2	(4.8)	25
Roh↑	140	38	(27.1)	7	(5.0)	31
Anx/Dep	208	77	(37.0)	17	(8.2)	60
Wrk Stress	197	86	(43.6)	6	(3.0)	80

Conclusions. Multiple chronic illnesses, especially sleep apnea, are associated with a high incidence of hypogonadism in ED. The vast majority of the men have secondary hypogonadism. It is postulated that emotional and medical stresses will suppress gonadotropin production from the hypothalamic/pituitary area. Men with ED should have testosterone levels checked.

S-49

QUALITY OF LIFE AFTER CURATIVE ABLATHERM-HIFU TREATMENT FOR PROSTATE CANCER

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Background and aims. Prostate cancer treatment is a major topic of research in a continuous effort to get better and reliable outcome with minimal invasive therapy, preservation of QOL and minimizing co-morbidity. With Ablatherm-HIFU (EDAP) we are able to localize and preserve neurovascular

bundles in selected cases, adding QOL by preserving potency and sexual function without jeopardizing treatment outcome.

Methods. The clinical outcome of the first 500 fully evaluable biopsy proven T1/3a prostate cancer patients with a mean follow-up of 36 months (12–72) have been analysed. 1/3 of patients with unilateral tumour and normal potency had a unilateral nerve sparing treatment (ULNST).

Results. 95% reach nadir PSA <1 ng/ml within 1 month after treatment. 78% show BDFS with PSA <1 during the entire follow-up period after 1 single HIFU treatment. No difference between full treatment and ULNST group. 6 ULNST had a second HIFU for local recurrence. No major complications: stricture/sloughing 8%, stress incontinence $<2\%$. Potency preservation was possible in 75% of patients after ULNST, 33% after full treatment and 8% in the T1/3a group. Normal erections can be obtained with satisfying sexual intercourse and dry orgasm with high patient and partner satisfaction. PDE-5 inhibitors are active after HIFU.

Conclusions. Ablatherm-HIFU proves to be a safe, minimal invasive and possibly curative treatment option for patients with localized prostate cancer, preserving maximal QuOL. Retreatment is possible and safe. Nerve sparing procedures are safe and efficient in selected patients. Continued monitoring of follow-up studies is mandatory.

S-50

ANDROGEN DEFICIENCY, ITS EFFECTS

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In older men, the relationship between low serum testosterone (T) and the relatively non-specific symptoms and signs of androgen deficiency is complicated and not as clear as in young men with severe androgen deficiency. Co-morbid illnesses may cause manifestations that mimic androgen deficiency, but certain chronic illnesses and medications may cause low T levels. The degree of androgen deficiency in older men is often mild, resulting in a situation similar to sub-clinical hypothyroidism. Improvement in manifestations consistent with androgen deficiency with T treatment would support a contribution of low T to these non-specific manifestations. Except for effects on body composition, the results of short-term trials of T treatment on most other endpoints in older men have been inconsistent, possibly related to inclusion of men with normal T levels or men without symptoms or signs of androgen deficiency, insufficient statistical power for certain endpoints, and/or differences in T levels maintained during treatment. A randomized clinical trial in older men with unequivocally low T levels and well-defined manifestations of androgen deficiency who are treated with T to maintain normal T levels and evaluated with sensitive outcome measures is the most appropriate study design to define the clinical and physiological effects of androgen deficiency in older men. Finally, low T levels are associated with depression, Alzheimer's disease, diabetes, cardiovascular disease and mortality, but these associations do not imply causal relationships. Sufficiently-powered, long-term randomized clinical trials are not available to assess the potential benefits (and risks) of T treatment on these important clinical outcomes.

S-51

ANDROGEN ACTIONS AND EFFECTS

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Testosterone (T) action is dependent on T production in the Leydig cells, on total T in circulation, on sex hormone binding globulin (SHBG) determining the biologically active free T and on the androgen receptor (AR) in the target tissues. ARs are present in almost all tissues, making T a universal hormone influencing almost all body functions. A defective AR caused by inactivating mutations leads to androgen insensitivity syndrome (AIS). More subtle changes in T action are caused by the CAG repeat polymorphism in exon 1 of the AR. The length of the CAG repeats determines the transactivation activity of the AR and thus T action. A shorter number of CAG repeats is responsible for higher T activity, whereas longer CAG repeats cause less T activity. In cases of extreme CAG repeat length (e.g. >37), spinal and bulbar muscular results atrophy. In normal men the length of the CAG repeats co-determines bone density, lipid metabolism, body composition, vascular endothelial function, hair pattern, sperm production and personality traits. Klinefelter patients bear two X-chromosomes; one is inactivated to varying degrees and the CAG repeat polymorphism of the other active X-chromosome determines several phenotypic traits such as height, gynecomastia and personality. CAG repeats also appear to be responsible for pharmacogenetic aspects of T action. In response to T treatment prostate growth and haemoglobin production are more pronounced in hypogonadal patients with shorter CAG repeats than in those with longer CAG repeats.

Poster session: Late hypogonadism

P-52

TESTOSTERONE THERAPY IMPROVES BODY COMPOSITION AND QUALITY OF LIFE IN MEN WITH LATE-ONSET HYPOGONADISM: A LARGE, RANDOMIZED, PLACEBO-CONTROLLED STUDY

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Background and aims. Late-onset hypogonadism (LOH) is a clinical and biochemical syndrome characterized by typical symptoms and a deficiency in serum testosterone. This study assessed the efficacy and safety of a transdermal hydroalcoholic 1% testosterone gel (Testogel®) in men with LOH.

Methods. This was a multicentre, randomized, placebo-controlled, double-blind study. Men aged 50–80 years fulfilling the clinical and biochemical criteria for symptomatic LOH received either placebo ($n=179$) or testosterone gel ($n=183$; 5–7.5 g/day, equivalent to 50–75 mg/day testosterone). The primary efficacy variable was the change from baseline in lean body mass, assessed by dual-energy X-ray absorptiometry, after 6 months. Secondary variables included fat mass, total body mass, health-related quality of life (HRQoL; assessed using the aging males' symptoms (AMS) scale) and serum lipid levels.

Results. Mean ($\pm$SD) lean body mass increased significantly following 6 months' testosterone therapy versus placebo ($+1.29$ (± 2.04) kg and $+0.02$ (± 1.38) kg in testosterone and placebo groups, respectively; $p<0.0001$). Testosterone associated increases in lean body mass were observed irrespective of age and baseline serum total testosterone levels. Reductions in fat mass were significantly greater in the testosterone group compared with placebo (-1.13 (± 2.12) kg and -0.09 (± 1.66) kg, respectively; $p<0.0001$). Total body mass did not change significantly following treatment. Testosterone therapy significantly improved HRQoL (AMS total score changes: testosterone, -10.8 (± 10.1); placebo, -6.9 (± 10.5); $p<0.05$), and improvements in lipid parameters were also observed. No unexpected safety issues were identified.

Conclusions. Six months' treatment with 1% testosterone gel is effective and well tolerated in men with LOH.

P-53

PREVALENCE OF LATE-ONSET HYPOGONADISM IN LATVIA: A PRELIMINARY STUDY

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Background and aims. Life expectancy (LE) of Latvian men is one of the lowest in Europe: 64 years. Hereby we aimed to investigate whether it can be associated with late-onset hypogonadism (LOH).

Methods. 76 men attending their general practitioner's office for a biannual check-up were asked to fill in AMS score forms. Men were divided into 3 groups according to their age: group I (40–49, $n = 20$), group II (50–59, $n = 29$), and group III (> 59, $n = 27$). Prevalence of symptoms between groups was compared by Fisher's exact test.

Results. 69.7% of all men showed impairment according to AMS score. 32% had little impairment according to AMS total sum score, 33% – moderate, and 5% – severe. There was a tendency that LOH symptoms were more prevalent in groups II and III, as compared to group I, and there was also a trend that men with little impairment are most prevalent in group II, whilst those with moderate impairment are most prevalent in group III (Table I), however, no statistically significant differences were found in either total sum scores or psychological, somato-vegetative and sexual subscale scores between different age groups.

Conclusions. LOH symptoms were found in 2/3 of Latvian men in the age group of 40 years and older. It should be elucidated: 1) whether these numbers are representative for the larger general unselected population; 2) which of these men can benefit from the testosterone replacement therapy (TRT); 3) in long term: whether TRT can prolong LE of Latvian men.

Table I. Prevalence of men with Aging Male Symptoms (AMS) scores in different age groups.

Impairement according to AMS total sum score	Group I n = 20	Group II n = 29	Group III n = 27
No	45%	21%	30%
Little	25%	45%	22%
Moderate	20%	34%	41%
Severe	10%	0%	7%

Group I: age 40–49; group II: age 50–59; group III: age > 59.

P-54

ASSOCIATION OF THE LEVEL SERUM CORTISOL AND TESTOSTERONE IN A GROUP WITH LATE-ONSET HYPOGONADISM

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Background and aims. Late-onset hypogonadism (LOH) in the aging male is associated with decrease of hormonal profiles such as free testosterone. Generally, androgens don't produce only sexual effects including libido, erectile dysfunction, but also non-sexual effects including lean muscle mass, visceral adiposity, osteoporosis, and depressive mode. Cortisol production derived from adrenaline is maintained with age. And this hormone is thought of as the 'stress hormone'. To evaluate the sexual functions and biomarkers, the relationship between questionnaires and biological agents such as testosterone and cortisol in the serum and salivary were studied.

Methods. The study included 105 patients from among patients who visited our clinic for elderly males. The age range was 32–72 (mean 49 $\pm$ 4.5, median 52). All patients gave full informed consent to participate in this study. Saliva and serum samples were collected in the morning (9:00 am–11:00 am). Bioavailable T (Bio-T) and F (Bio-F) are determined by separation of the SHBG bound steroid. Levels of non-SHBG-bound T and F and salivary testosterone (Sa-T) and cortisol (Sa-F) were measured by means of LC-MS/MS directly. To evaluate sexual dysfunction, the IIEF5 is used as questionnaire. Statistical analysis was performed using Pearson's correlation coefficient test.

Results. The free T and Sa-T were significantly correlated with age ($r = 0.73$, $p < 0.01$). The reduction of bio-F and Sa-F correlated negatively with the IIEF5 score ($p < 0.05$). However, there was significantly no association with the reduction of bio-T and Sa-T with total IIEF score ($p < 0.05$).

Conclusions. According to IIEF5, the sexual function is not significantly related to the reduction of T, but significantly correlated with cortisol.

P-55

ANALYSING REAL-TIME TOTAL SERUM TESTOSTERONE TOGETHER WITH THE ADAM QUESTIONNAIRE – A METHOD TO IDENTIFY LATE-ONSET HYPOGONADISM IN CLINICAL PRACTICE?

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Background and aims. To study whether the ADAM questionnaire together with 'real time' total s-testosterone (TT) using, a small photospectrometric analyser (FAST-PACK-system® by Qualigen®), is a method to identify patients with possible late-onset hypogonadism (LOH) in clinical practice.

Methods. All consecutive non-testosterone treated males, attending a urologic clinic, answered a self-administered questionnaire, including the reason for their visit, presence of concomitant diabetes and the 'ADAM questionnaire'. Blood pressure, waist circumference and BMI were recorded. Regardless of time of day, TT was analysed at the clinic at the time of the visit, using the FAST-PACK-system®. All patients with a TT < 12 mmol/ml and at least one positive answer on the ADAM-questionnaire were re-tested with a morning TT. Those who still had a TT < 12 mmol/ml were considered as having a possible LOH.

Results. Of 402 men, mean age 60.4 (20–88), 131 (31%) had TT < 12 mmol/ml and at least one positive answer on the ADAM-questionnaire and were retested. Eighty-five, (21%) still had a low TT. Of these 85, mean age 59,5 (21–83), 16% had diabetes, 47% had subjective erectile dysfunction (ED), a mean waist circumference of 102.4 cm (81–132), a mean BMI 26.0 (18–40) and 84% had more than one positive answer on the questionnaire. Of the remaining 317 males, mean age 61,5 (20–88) ($p < 0.001$), 12% had diabetes, 40% had self-reported ED, a mean waist circumference of 99.4 cm (77–147) ($p = 0.0124$) mean BMI 26.7 (16–42) and 88% had more than one positive answer on the questionnaire.

Conclusions. In clinical practice a significant number of patients with consistently low TT and symptoms indicating LOH are identified, when 'real time' TT is analysed using the FAST-PACK-system® together with the ADAM questionnaire.

Poster session: Testosterone in the older male

P-56

A COMPARISON OF TESTOSTERONE MEASUREMENTS BY RADIOIMMUNOASSAY AND LIQUID CHROMATOGRAPHY TANDEM MASS SPECTROMETRY

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Background and aims. Motivated by the current interest in, and likely future importance of, mass spectrometry for measuring testosterone (T), we compared liquid chromatography tandem mass spectrometry (LC-MS/MS) with radioimmunoassay (RIA) using samples from community-dwelling men.

Methods. T was measured once by RIA (Diagnostic Product Corporation, Los Angeles, CA) and twice by LC-MS/MS in 617 blood samples from 108 randomly selected men, 30–80 years old in Boston, MA (median: 6 samples/subject; range: 2–6). Transformation to base 10 logarithms eliminated the positive correlation between intra-individual variation and intra-individual hormone level.

Results. Average T levels varied widely among subjects (5th-95th percentiles on RIA: 197–759 ng/dL). On average, results

from RIA and LC-MS/MS differed by <2.1% but the difference was considerably more variable at T < 250 ng/d L than at T > 250 ng/dL (SD of the difference: 0.43 and 0.45 log10 versus 0.13 and 0.20 log10). The difference also varied with the mean of the three results ($p < 0.02$) with RIA tending to produce the higher values at T < 400 ng/dL and the lower values at T > 400 ng/dL. The intra-individual standard deviation – more clinically relevant than assay variation alone because it also includes biological variation – was higher on LC-MS/MS than on RIA (0.1426 and 0.1134 log10 versus 0.0615 log10). More values <250 ng/dL were obtained by LC-MS/MS than by RIA (14.9% and 17.0% versus 10.5%; $p < 0.01$ for each LC-MS/MS versus RIA).

Conclusions. The results, combined with previous work showing that LC-MS/MS accurately measures T at low concentrations, suggests that T by RIA may under-diagnosis low testosterone levels.

P-57

THE IMPORTANCE OF ANDROGEN RESISTANCE IN TESTOSTERONE DEFICIENCY SYNDROME

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Background and aims. Central to the diagnosis and treatment of testosterone deficiency syndrome in the adult male is the remarkable paradox that there is very poor correlation between the characteristic symptoms and levels of serum androgens. The aim is to present an evidence-based working hypothesis to resolve this confusing clinical paradox.

Methods. A review of the possible mechanisms in testosterone deficiency syndrome was carried out and a hypothesis to explain this paradox and associated problems in the diagnosis and clinical management of androgen deficiency established on the basis of a review of the literature. Mechanisms by which androgen deficiency could arise were studied at five different levels:

1) Impaired androgen synthesis or regulation;
2) Increased androgen binding;
3) Reduced tissue responsiveness;
4) Decreased androgen receptor activity;
5) Impaired transcription and translation.

Results. As with insulin in maturity onset diabetes mellitus, there can be both insufficient production, and variable degrees of resistance to the action of androgens operating at several levels in the body simultaneously, with these factors becoming progressively worse with aging, adverse life-style, other disease processes, and a wide range of medications.

Conclusions. Using this model, androgen deficiency can be redefined as an absolute or relative deficiency of androgens or their metabolites according to the needs of that individual at that time in his life. There are important ways in which the considerations raised by this hypothesis affect the aetiology, terminology, diagnosis and treatment of androgen deficient states.

P-58

DO STATINS AFFECT ANDROGEN LEVELS IN MEN? RESULTS FROM THE BOSTON AREA COMMUNITY HEALTH (BACH) SURVEY

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Background and aims. Statins are the most popular prescription medications in the United States. Some data suggest statins may affect cancer risk and/or disease severity. Because cholesterol is a required intermediate in sex steroid synthesis, it is possible that statins influence prostate cancer risk through effects on steroid hormone metabolism. We investigated whether levels of circulating androgens varied by statin exposure in a population-based epidemiologic study, the Boston Area Community Health (BACH) Survey.

Methods. We measured serum total testosterone (TT), free testosterone (FT), sex hormone binding globulin (SHBG), dehydroepiandrosterone sulphate (DHEAS) and luteinizing hormone (LH). Statin exposure was collected by participant self-report and/or interviewer-recorded information. Multivariate linear models were constructed to account for potential confounding of any statin use-androgen relationship.

Results. Among 1,824 men, the prevalence of statin use was 12.6% (95% confidence interval (CI): 10.5–15.0%). On average, statin users were older, had larger BMI, more chronic illnesses, and used more medications. We found no relationship between statin use and FT, DHEAS, or LH. A significant association between statin use and serum TT concentrations was initially observed but was not robust to covariate control in a multivariate model that included age, BMI, time since waking, and history of cardiovascular disease and diabetes: (−5.3%, 95% CI: −13.0%–3.0%). For SHBG, a significant decrease in levels among statin users was observed in multivariate models adjusted similarly: (−10.6%, 95% CI: −11.7%– −1.6%).

Conclusions. In this sample, it is unlikely that statins affect circulating androgens and prostate cancer risk through a hormonal mechanism.

P-59

TESTOSTERONE CAUSES DIRECT RELAXATION OF HUMAN CORPUS CAVERNOSUM BY POTASSIUM CHANNEL OPENING ACTION

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Background and aims. Human studies designed to examine a possible direct vasodilator effect of testosterone on penile arterial circulation are lacking. We investigated the effect of testosterone on contractile tone of human corpus cavernosum.

Methods. Testosterone was added (10 nM – 300 mM) cumulatively to organ baths after precontraction with KCl (45 mM) and phenylephrine (PE, 10 mM). Testosterone - induced relaxations were tested in the presence of cyclooxygenase inhibitor indomethacin (10 mM), nitric oxide synthase inhibitor N-[omega]-nitro-L-arginine methyl ester (L-NAME, 100 mM), non-selective large conductance Ca^{2+}-activated and voltage–sensitive K^+ channel inhibitor tetraethylammonium (TEA, 1 mM), ATP-sensitive K^+ channel inhibitor glibenclamide (GLI, 10 mM) and voltage-sensitive K^+ channel inhibitor 4-aminopyridine (4-AP, 1 mM).

Results. Testosterone produced relaxation in human corpus cavernosum. Cumulative concentrations of testosterone (10 nM – 300 mM) elicited concentration-dependent relaxation of 45 mM KCl-induced active tone in corpus cavernosum (Emax: 64.3 + 3.2% of KCl-induced contraction). Except for GLI, the relaxation to testosterone is affected by neither K^+ channel inhibitors (TEA, $BaCl_2$ and 4-AP), nor L-NAME and indomethacin.

Conclusions. We report for the first time that supraphysiological concentrations of testosterone induces relaxation in human corpus cavernosum. This response may occur in part via ATP-sensitive K^+ channel opening action.

P-60

THE DECLINE OF SERUM TESTOSTERONE LEVELS IN COMMUNITY-DWELLING ELDERLY MEN: DESCRIPTIVE DATA AND PREDICTORS OF CHANGE DURING 4-YEAR FOLLOW-UP

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Background and aims. Aging in men is associated with progressive declining serum testosterone (T) levels. However, it's unclear whether this continues until old age. This study was designed to investigate changes in T levels over time, their relationship with clinical and genetic characteristics, and predictors of these changes.

Methods. A population-based, longitudinal, 4-year observational study in community-dwelling men (71–86 yrs). 221 men were included and followed on a yearly basis. Hormone levels were assessed by immunoassay. Relationships with baseline characteristics were assessed by cross-sectional analyses. Using mixed-effects modelling for longitudinal analyses, predictors of the changes were explored.

Results. Total T (TT), free T and non-SHBG bound T (BioT) levels decreased with aging, the decline in BioT being most pronounced. No changes in SHBG or estradiol (E2) levels were observed. Luteinizing (LH) and follicle stimulating hormone (FSH) levels increased during follow-up. Subjects who gained weight displayed a greater decline in TT levels. However, baseline body composition was not predictive for changes in T levels, neither was general health status. Baseline E2 and FSH levels were independently associated with a faster decline in T levels. Carriers of a 'TA'-allele of the oestrogen receptor alpha gene (ERα) SNP's PvuII and XbaI displayed a slower decline of TT and BioT.

Conclusions. In elderly men with already low T levels, a continued decline can be observed. The association with FSH appears to reflect testicular mechanisms of age-related decline in T production, whereas the predictive effects of E2 and ERα-polymorphisms might bear relevance to changes in neuro-endocrine regulation of T production.

P-61

ESTRADIOL AND INFLAMMATORY MARKERS IN OLDER MEN: THE INCHIANTI STUDY

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Background and aims. A wealth of data suggests that, in older men, testosterone and inflammatory markers are inversely related. We previously reported that lower testosterone is strongly associated with higher soluble interleukin-6 receptor (sIL-6r). However, it is not known whether this relationship is direct or mediated by estradiol.

Methods. After excluding participants taking glucocorticoids ($n = 9$), antibiotics ($n = 6$) androgens ($n = 1$) or those with recent hospitalization ($n = 2$), we used in the analysis 399 men 65 year older from Invecchiare in Chianti (InCHIANTI) population with complete data on BMI, estradiol, testosterone, IL-6, TNF-alpha and C-reactive protein (CRP). Testosterone was determined by radioimmunoassay (RIA). Estradiol was measured by RIA with a minimum detectable concentration of 2.2 pg/mL. Serum TNF-alpha, IL-6, sIL-6r and CRP were measured by high-sensitivity ELISAs. Multivariate analysis was used to test the association between estradiol and inflammatory markers.

Results. In the age-adjusted analysis estradiol was positively associated with IL-6 (beta $\pm$ SE 0.017 ± 0.002, p value $=$ 0.03). After adjusting for other confounders including BMI, diabetes, cardiovascular disease, cancer, Parkinson's disease, peripheral artery diseases, severe arthrosis, pulmonary disease and testosterone, this association was maintained (beta $\pm$ SE,0.015 ± 0.007, p value $= 0.03$). No relationship was found between estradiol and CRP, sIL-6r or TNF-alpha in both age-adjusted and fully adjusted analysis ($p > 0.05$).

Conclusions. In healthy older men, estradiol is positively associated with IL-6, independent of testosterone and other confounders. Estradiol does not mediate the strong and negative relationship between testosterone and s-IL6r and it is not associated with other inflammatory cytokines.

P-62

EFFECTS OF ANDROGEN DEPRIVATION THERAPY ON SEXUAL FUNCTION

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Background and aims. Although it has been well established that low testosterone levels are associated with decreased libido and with erectile difficulties in healthy older men, there is a paucity of information on the potential impact of the long-term suppression of testosterone levels with androgen deprivation therapy (ADT) on sexual function in patients with prostate cancer. This prospective study investigated the effects of ADT on sexual function in patients with prostate cancer for whom this treatment was required. It was hypothesized that patients with prostate cancer would experience a decrease in sexual function following 3 months of ADT.

Methods. The Expanded Prostate Cancer Index Composite (EPIC) was used to evaluate symptoms of sexual function in 20 prostate cancer patients, immediately prior to, and again following, 3 months of ADT. Paired sample t-statistics were used to compare scores on the measure of sexual function at both visits.

Results. Results indicated that prostate cancer patients receiving ADT experienced a significantly decreased ability to reach orgasm, a decreased quality of their erections, a lowered frequency of awakening in the morning with an erection, and an increased frequency of hot flushes following 3 months of treatment.

Conclusions. These results provide supportive evidence for the idea that testosterone is critical for the maintenance of aspects of sexual function in men.

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TESTOSTERONE STUDY IN AGING THAI MALES

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Background and aims. To evaluate the correlations between sex hormone level and aging male symptoms (AMS) scales in aging Thai males.

Methods. Men, aged 40 to 70 years old, who walked into the Male Infertility Clinic of King Chulalongkorn Memorial Hospital with erectile dysfunction completed the AMS questionnaires. Their morning serum testosterone, SHBG, and albumin were examined. Free testosterone level was calculated by Free and Bioavailable Testosterone Calculator from www.issam.ch. Pearson's Product Moment Correlation was used to test the correlation between AMS scale and hormone levels.

Results. 42 ED patients were enrolled in this study. Mean age was 60 ± 9.05 years old (42–82). Mean AMS scales was 41.45 ± 14.04. Mean total testosterone was 4.58 ± 1.26 nmol/L. Mean free testosterone was 9.03 ± 2.32 ng/dl. Mean bioavailable T was 218.6 ± 62.6 ng/dl. AMS scale had no correlation with the total testosterone, free testosterone, and bioavailable testosterone.

Conclusions. This is the pilot study in aging Thai males. It suggests that testosterone level doesn't have an effect on the aging male symptoms.

P-64

THE TESTICULAR VOLUME ALTERS UNDER TESTOSTERONE THERAPY

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Background and aims. To evaluate if testis volume alters/shrinks under testosterone therapy with long-acting injectable t-undecanoate in patients with late-onset hypogonadism (LOH) and erectile dysfunction (ED).

Methods. 34 patients with average age 57 $\pm$ 2.1 and mean follow-up of 21 months received injectable TU 1000 mg (Nebido, Bayer-Schering, Berlin/Germany). They underwent monitoring protocol including testicular volume control by ultrasound 7.5 Mhz (Sonoace 6000c, Marl/Germany) at baseline and 3-monthly. This cohort was compared with control group of 29 subjects with similar characteristics and mean age 55 $\pm$ 2.7. Choosing ultrasound and no other method like orchidometer was determined to avoid artefacts like in presence of hydroceles.

Results. The control group subjects have constant testicular volume at 24.2 $\pm$ 2.22 ml at baseline and during control time. Patients' group (LOH/ED) whose testicle volume at baseline was in mean value 23 $\pm$ 1.2 ml showed after 3 months: 22.4 $\pm$ 1.52 ml, after 6 months: 20.7 $\pm$ 1.4 ml, after 12 months: 19.8 $\pm$ 2 ml, after 21 months: 19.7 $\pm$ 1.1 ml. Remarkable volume reduction was recorded after 6 months (19.6%) under TT and remained constant afterwards. Four subjects who reported subjective volume reduction had 6 $\pm$ 0.9 ml less volume.

Conclusions. 1) Subjects with T-deficiency have primarily lower testicular volume than eugonadal ones ($-$5%). 2) Exogenous testosterone reduces testicle volume around 19.6% in the first 6–9 months of therapy but remains stable afterwards. 3) Only four patients reported subjective feeling of reduced testicular volumes. 4) No testicular atrophy was noticed so far.

Poster session: Testosterone and the heart

P-65

TESTOSTERONE BLOOD LEVEL AND ERECTILE DYSFUNCTION: A PROSPECTIVE STUDY IN PATIENTS WITH CHRONIC RENAL FAILURE

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Background and aims. Recent studies have shown that testosterone is involved in the pathogenesis of cardiovascular diseases. Moreover, blood testosterone concentrations, in observational studies, resulted consistently lower among men not only with cardiovascular disease but also in uremic men.

Methods. In order to correlate the blood level of testosterone with the degree of erectile dysfunction (ED) and chronic renal failure (CRF) (stage I-V) we selected a group of patients with renal failure on conservative treatment, assisted in our ambulatory of nephrology. 93 patients with ED, -mean age 72+ years old (+8 SD) were selected. All the patients had renal failure stage II and III, respectively with a creatinine clearance among 59–30 and 29–15 ml/min. The sexual evaluation was done using a 15-item questionnaire: International Index of Erectile Function (IIEF).

Results. Mean scores of patients with ED were significantly lower than mean scores for healthy controls for all 15 questions (all p values < 0.01). The results showed a direct correlation between -IIEF and GFR (R2 0.08); an inverse correlation between testosterone and cholesterol (R2 0.045); a higher number of diabetic patients with lower level of testosterone, at level 3 of CRF; low levels of testosterone for smokers especially in stage II (GFR).

Conclusions. These data confirm the direct correlation between ED and renal failure, and the role of diabetes and smokers in hypotestosteronemia, in patients with different degrees of renal insufficiency. Further prospective studies are needed in order to correlate cardiovascular morbidity and mortality in patients with CRF and blood levels of testosterone.

Poster session: Testosterone deficiency syndrome

P-66

DEVELOPMENT AND VALIDATION OF A NEW SCREENING INSTRUMENT TO ASSESS SYMPTOMS OF ANDROGEN DEFICIENCY

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Background and aims. Acquired testosterone deficiency (late-onset hypogonadism), defined as clinically significant symptoms in addition to a low circulating testosterone level, is an endocrine disorder that affects up to 12% of elderly men. Hypogonadism, secondary to chronic illnesses or specific medications, is also observed in many older men. Despite its potential impact on quality of life, most physicians are unaware of the symptoms of hypogonadism and lack training in its recognition and management. To address deficiencies in existing screeners, and to incorporate patient-based, clinician-based and evidence-based criteria in the conceptual model and design of a new screener, the present study is being conducted.

Methods. Using a phased, triangulation approach, a new screening tool is being developed and validated in this research. During Phase I, in-depth qualitative interviews and focus groups are being conducted in 78 men aged 18–75 y; untreated hypogonadal ($n = 26$), treated hypogonadal ($n = 26$), and control subjects ($n = 26$). The qualitative research is based on *a priori* models of disease causation and association in order to elicit responses about symptom relevance among men with hypogonadism compared to control subjects. Qualitative study findings will be used to guide development of a final questionnaire, which will be psychometrically validated in a larger sample of patients and controls.

Results. The results will be used to design the final measurement model, which will incorporate clinician and other evidence-based criteria.

Conclusions. For this presentation, results from the qualitative interviews and the basic design of the psychometric validation study will be presented.

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ANALYSIS OF SEXUAL HEALTH IN SIBERIANS

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Background and aims. To obtain a greater understanding of sexual status, behaviour and habits among men in Siberia to offer a special approach of treatment for sexual dysfunction.

Methods. A population-based study was conducted among men in Siberia. 1,280 men filled in a special detailed questionnaire on sexual health.

Results. 23% were healthy; others had chronic diseases. 84% are rare consumers of alcohol. 29% were non-smokers, others smoked – from 'sometimes' (29%) up to 'more than one pack per day' (16%). 42% exercised regularly, 4% did it rarely, and 54% of the men were not engaged in sports at all.

In 3% the first coitus was at 14; the latest debut of sexual life was 24. 81% had only one constant sexual partner.

The self-estimation of erection is low. Only 33% estimated their erection as 'excellent', 27% – as 'good', 20% – 'middle', 13% – 'poor' and 7% – 'very poor'. Exactly the same proportion was revealed in the self-estimation of life success, career, etc. 33% of men counted their life success as 'excellent', 27% thought it was 'good', 20% – 'middle', 13% – 'poor' and 7% – 'very poor'.

Conclusions. A status of sexual health is satisfactory. We have revealed high direct correlation between level of erection and

life success. It is the additional evidence that erectile dysfunction is both a medical and social problem.

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AGING MALES AND HORMONES

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Background and aims. The concept of treating an aging male collectively brings in a new era both from preventive and therapeutic aspects. In this concept, the role of testosterone (hormones) has been elaborated. These hormones are not just responsible for sex drive and sexual performance but they also help build protein, keep the bones strong, and play a role in metabolic activities.

Methods. It is at this juncture in life a man over the age of 50 years has to take preventive measures for erectile dysfunction, smooth passage of urine, to rule out early development of prostate cancer, endocrinological disorders and prevent cardiac dysfunctions. Aging is inevitable, but graceful aging and accepting certain problems and preventing others has become an important part in the management of population.

Results. Our goal is to ensure that the specific health needs of men are given greater attention than ever before, especially for the following reasons. These are also the facts which make health professionals all over the world speak of a 'crisis in men's health':

- Male life expectancy is unnecessarily low and too many men die too young from preventable causes.
- The incidence of men's disease (CA, prostate and testicular cancer) is rapidly increasing.

Conclusions. Men are especially at risk for suicide, yet male depression remains under diagnosed and under treated. Sexual health problems (including erectile dysfunction) are common. Health services have been slow to respond to men's health needs. Little has been done to encourage and enable men to access overall services more quickly and effectively.

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DESIGN OF THE ESPRIT STUDY: ENERGY, SEXUAL DESIRE AND BODY PROPORTIONS WITH ANDROGEL®, TESTOSTERONE 1% GEL THERAPY IN HYPOGONADAL MEN

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Background and aims. Hypogonadism is associated with a wide range of problems that have significant effects on morbidity and mortality, and also affect quality of life.

Methods. The ESPRIT study (Energy, Sexual desire and body PropoRtions wIth AndroGel®, Testosterone 1% gel therapy) is a 6-month, multinational, open, observational study in hypogonadal men being treated with topical AndroGel® in usual daily clinical practice; 1,700 to 2,400 patients will be enrolled in Central and Eastern Europe and the Middle East.

Results. The main objective will be to evaluate the effect of AndroGel® on the symptoms of hypogonadism and quality of life as assessed by the Aging Males' Symptoms (AMS) scale. Further objectives include evaluating the effect and time to onset of improvement in libido/sexual desire and erectile dysfunction assessed by the International Index of Erectile Function (IIEF), fatigue assessed by the Multi-dimensional Fatigue Index (MFI) and body composition (body mass index, waist circumference). Subgroup analyses will be performed: <50 years versus ≥ 50 years; absence versus presence of metabolic syndrome. The safety of AndroGel® will also be assessed.

Conclusions. The study population will consist of newly diagnosed hypogonadal men who have not been previously treated with testosterone (age ≥ 18 years), in whom testosterone deficiency has been confirmed by clinical features and biochemical tests according to international guidelines, and who are currently being prescribed AndroGel® (testosterone 1% gel, starting dose 50 mg testosterone per day).

P-70

USE OF THE AGING MALE SYMPTOM SCALE TO SCREEN AND MONITOR TESTOSTERONE TREATMENT IN HYPOGONADAL MEN

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Background and aims. To compare values of AMS recorded in a normal population with those recorded in men complaining of symptoms of hypogonadism or hypogonadal men before and on testosterone therapy.

Methods. Healthy men (903; 18–75 years) were interviewed by phone. In a check-up centre, 539 (18–75 years) healthy men completed the AMS scale as well as 90 (45–71 years) MDs taking part in a training programme on the aging male. 471 men ($>$ 50 years) complaining of fatigue, loss of interest, libido or memory filled in the AMS scale in their doctor's office and 250 hypogonadal men (18–68 years; testosterone <2.5 ng/ml), included in a clinical study, completed the questionnaire before and during the treatment with a testosterone patch restoring their testosterone levels in the physiological range.

Results. AMS questionnaire completed in a clinical setting, by phone or by MDs, were similar. Total AMS score was significantly age dependent and correlated to income. In normal men, total AMS score, somatic and psychological sub scores slightly decreased and a significant deterioration of the sexual AMS sub-score with age was recorded. In complaining men, the mean levels of all variables were significantly higher than in healthy men. However, these differences weakened with age. In hypogonadal men, testosterone treatment improved AMS score by 6–7 points and achieved the normal values of healthy men.

Conclusions. The AMS scale, especially the sexual sub-score, allows differentiation of normal and complaining men between fifty and sixty-five years of age. AMS is also useful to monitor testosterone treatment in hypogonadal men.

P-71

EFFECT OF TESTOSTERONE TREATMENT ON CARDIOVASCULAR RISK FACTORS AND VARIABLES OF METABOLIC SYNDROME (METS) IN HYPOGONADAL MEN

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Background and aims. To study the effects of testosterone undecanoate injections in hypogonadal men with MetS.

Methods. 32 men with MetS (IDF criteria) and LOH (TT <11 nmol/l) received 3 injections of testosterone undecanoate (Nebido®). In this interim analysis from an ongoing randomized, double-blind, placebo-controlled study, data are available for Interleukin-6 (IL-6), C-reactive protein (CRP) and tumour necrosis factor alpha (TNF alpha) in 13 men before and after 30 weeks. In 32 men, hormones, lipids, and anthropometric measures are available. Statistical analysis was performed using Wilcoxon test, Mann-Whitney U-test, and Spearman correlation test.

Results. IL-6 decreased from 4.6 [3.0–4.8] to 3.8 [2.8–4.0] pg/ml (normal range (NR) < 4.1) ($p = 0.04$), TNF alpha decreased from 15.2 [12.3–−15.3] to 12.2 [10.7–13.0] pg/ml (NR 0–8.21) ($p = 0.005$, and CRP decreased from 3.8 [1.4–4.1] to 1.9 [0.6–3.1] mg/L (NR 0–5) ($p = 0.01$).

Leptin decreased from 15.6 to 9.8 ng/ml ($p = 0.00071$), HDL increased from 1.06 to 1.34 nmol/l ($p = 0.036$); glucose decreased from 6 to 5.6 nmol/l ($p = 0.047$), haemoglobin rose from 156 to 160 g/l ($p = 0.00075$), haematocrit from 46.1 to 47.8% ($p = 0.0062$). Weight decreased from 97 to 95 kg ($p = 0.007$), waist circumference from 108.5 to 106.5 cm ($p = 0.000015$), and BMI from 31.27 to 30.6 kg/m^2 ($p = 0.01$). No significant changes in PSA, insulin, estradiol, LDL cholesterol and triglycerides were observed.

Conclusions. Normalization of testosterone levels by treatment with long-acting intramuscular testosterone undecanoate (Nebido®) in hypogonadal men with MetS has beneficial effects on the process of chronic inflammation as well as on anthropometric parameters and lipid profile, glucose, and leptin.

P-72

THE NATURAL PROGRESSION AND REMISSION OF SYMPTOMATIC ANDROGEN DEFICIENCY IN MEN

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Background and aims. Current thinking suggests that a composite measure of T levels and related symptoms represents the most clinically meaningful measure of male hormonal status. However, very little is known about the natural history of androgen deficiency. We estimated the probability of the onset, progression and remission of symptomatic androgen deficiency (SAD) using longitudinal data from the Massachusetts Male Aging Study (MMAS).

Methods. MMAS data were collected over three waves: T1 (1987–1989), T2 (1995–1997), T3 (2002–2004). Onset, progression and remission were defined in terms of transitions in SAD status. N = 766 community-dwelling men, ages 40–70 y at baseline (T1), contributed data from T1 to T2, and 393 from T2 to T3. SAD was defined in terms of serum total and free testosterone (T) levels, as well as symptoms associated with low circulating androgens, in combination.

Results. At T2 or T3, the likelihood of SAD was greater for those subjects who had exhibited SAD at the previous wave (odds ratio 3.8; 95% CI: 1.9, 7.4). However, 56% of eligible subjects experienced remission of SAD. The probability of SAD increased with age and BMI. The likelihood of remission was at least 50% for most sub-populations.

Conclusions. In this population-based sample, SAD did not represent a stable health state over a period of several years. Particularly among younger and leaner men, the likelihood that SAD would remit exceeds the likelihood that it will not. These results appear to undermine the reliability of the SAD construct in the general population.

P-73

AGING MALES' SYMPTOMS SCALE (AMS): TRANSLATION AND CROSS-CULTURAL ADAPTATION OF BAHASA MELAYU VERSION

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Background. Measurement of health-related quality of life and symptoms in aging males has been a major clinical interest in the current days. The Aging Males' Symptoms Scale (AMS) is widely used in many countries to measure health related quality of life. The aim of this article is to describe the translation and adaptation process of the English version of AMS into Bahasa Melayu (BM) version.

Methods. The original English version of the AMS was translated into BM by a bi-lingual primary care physician to produce BM1 and BM2. BM1 and BM2 were harmonized to produce BM3. Subsequently, 2 other translators who are also bi-lingual and primary care physicians, blinded to the English version, worked on BM3 to perform a back translation namely E2 and E3. All the materials (BM1, BM2, BM3, E2, E3) were then compared with the English version, subsequently the BM pre-final version was constructed. This version was then pre-tested to 8 respondents from many departments in University of Malaya, Malaysia. Proportion Agreement, Weighted Kappa, Spearman Rank Correlation Coefficient, and verbatim responses from the respondents were used to measure the equivalence between the English and BM versions.

Results. All the items in the AMS questionnaire are well understood and answered by all the respondents which impulse the good semantic equivalent. The English and the BM versions showed an excellent equivalence as indicated by the weighted Kappa and Spearman Rank Correlation Coefficient with a value range from 0.72 to 1.00. This is further supported with Proportion Agreement value ranging from 75.00 to 100.00.

Conclusion. The BM version of the AMS questionnaire was successfully translated and adapted for application to Malaysian aging males.

Poster session: DHEA

P-74

EFFECTS OF DEHYDROEPIANDROSTERONE IN THE CENTRAL NERVOUS SYSTEM ON BLADDER FUNCTION IN MALE RATS

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Background and aims. Clinical studies in our hospital concerning lower urinary tract symptoms and serum levels of sex hormones revealed the significant correlation between the storage symptoms and dehydroepiandrosterone (DHEA) in old men. The aim of this study was to investigate the contribution of DHEA in the central nervous system to bladder function in male rats.

Methods. Male Sprague-Dawley rats were used. An animal model of DHEA deficiency was constructed by bilaterally adrenalectomized rat followed by replacement treatment with deoxycorticosterone acetate (25 mg/kg/day). First serum levels of DHEAS, corticosterone, aldosterone, ACTH and free testosterone were determined. Secondly cystometrography in conscious rats was performed. Two cystmetric parameters (bladder capacity and bladder contraction pressure) were determined from each cystometry. The effects of intracerebroventricular DHEA (10–100 nM) or vehicle (dimethyl sulphoxide) on bladder function were examined in control and DHEA deficiency rats.

Results. DHEAS level significantly decreased in adrenalectomized rat. In control group, there was no significant difference in cystmetric parameters between intracerebroventricular administration of DHEA and vehicle. In DHEA deficiency group, intracerebroventricular administration of DHEA significantly increased bladder capacity compared with the vehicle group ($p < 0.05$). No significant differences in bladder contraction pressure were found between DHEA and vehicle.

Conclusions. We investigated the contribution of DHEA in the central nervous system to bladder function in control and DHEA deficiency male rats. In the DHEA deficiency group, intracerebroventricular administration of DHEA significantly increased bladder capacity compared with the vehicle group. DHEA may modulate the activity of several neurotransmitter receptors on the micturition centre in the brain as the neurosteroids.

Poster session: Osteoporosis

P-75

THE ROLE OF VERTEBRAL FRACTURE ASSESSMENT (VFA) IN AGING MALES

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Background and aims. Vertebral fractures of thoracal and lumbar spine are the most frequent in osteoporosis. Findings of mild (Gennant rate I) fractures are of undisputed significance for early diagnosis of osteoporosis. Aim: to correlate BMI and T scores with number and rate of vertebral fractures in aging male.

Methods. First: 14 male patients, 51.2 $\pm$ 2.0 years old, BMI 25.7 $\pm$ 0.8 kg/m^2. Second: 12 patients 71.6 $\pm$ 2.0 years old, BMI 25.0 $\pm$ 0.8 kg/m^2. T scores were measured on L1-L4 region, left hip (neck) and left hip (total) sites – dual photoabsorptiometry, at the same time with (VFA) – Hologic Explorer. Statistics: Spearman, Mann-Whitney Test, ANOVA.

Results. I:II group T (L1-L4) -1.4 ± 0.4 versus -0.9 ± 0.4, T hip (neck) -1.3 ± 0.3 versus -1.5 ± 0.3, T hip (total) -0.8 ± 0.3 versus -0.9 ± 0.3, number of fractures 0.7 $\pm$ 0.3 versus 1.3 $\pm$ 0.3, rate (6 versus 10 mild, 1 versus 6 moderate, 1 versus 0 severe). In groups there was no significant correlation between: BMI, T L1-L4, Left hip (neck) and Left hip (total) region and number and rate of fractures. While all correlations in I were negative in the II negative correlation was found for T (neck) and total and fractures rate; in both, significant difference was found for the number of fractures.

Conclusions. The study emphasizes the role of (VFA) for osteoporosis prediction and therapy in males. In males over 60 further studies should be done to avoid false positive results due to degenerative changes on the spine.

P-76

WHAT ARE THE RELATIVE CONTRIBUTIONS TO BONE HEALTH IN AGING MEN?

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Background and aims. Very little attention has been given to the relative importance of a range of factors (lifestyle, hormones, etc) that might affect bone mineral density (BMD) other than age. Our objective was to determine the relative contribution of these factors to BMD in men.

Methods. Data were obtained from the Boston Area Community Health/Bone (BACH/Bone) Survey, a randomly selected, population-based survey of 1,219 men. Bone mineral density (BMD) at the hip and wrist and body composition were measured by DXA. Age, race/ethnicity, co-morbidities, and lifestyles (smoking, alcohol, physical activity, nutrition) were measured by self-report. Grip strength and physical performance were assessed with validated instruments. Testosterone, estradiol (E2), bone turnover markers, and 25-hydroxyvitamin-D were measured from an early morning blood sample. Backwards stepwise elimination was used for data reduction.

Results. At least 617 men (mean age 46 $\pm$ 12 y) were available for analysis. The R-square for hip BMD was 40%, with 63% of this explained by lean-mass, 22% attributed to race, and 6% to physical activity. Contributions from free E2 (4%), age (2%), caffeine (2%), and osteocalcin (1%) were minimal. The R-square for wrist BMD was 31%. About 58% of this was from lean mass, followed by race (23%), and grip strength (12%). Sun exposure (4%), medications (3%), and age ($<1\%$) explained less than 8%.

Conclusions. These data suggest that lean mass, rather than age, is the strongest and most consistent independent predictor of BMD at the hip and wrist in men. These results have implications for the design of clinical trials and for programme development to prevent osteoporotic fractures in aging men.

P-77

GHRELIN AND BONE MINERAL DENSITY IN ELDERLY MEN

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Background and aims. Some studies have reported that Ghrelin, an orexigenic peptide mainly secreted by the stomach, is able to stimulate bone formation. However, contradictory results have been reported for the association between serum ghrelin and bone mineral density (BMD) and bone markers. This study aimed to investigate whether there is any association between ghrelin levels and BMD in men.

Methods. We studied 117 men (mean age: 67.4 $\pm$ 5.4 yrs). In all subjects we evaluated ghrelin, adiponectin, parathyroid hormone, bone alkaline phosphatase (B-ALP) and the carboxy-terminal telopeptide of type I collagen (CTX). BMD was assessed at lumbar spine (BMD-LS), at femoral neck (BMD-FN) and at total femur (BMD-TF). A Food Frequency Questionnaire was used for calculation of dietary calcium intake.

Results. The values of ghrelin were lower in osteoporotic men than in osteopenic and normal men but the difference did not reach statistical significance (737.5 $\pm$ 82.4; 825.3 $\pm$ 112.5 and 853.6 $\pm$ 136.8 pg/ml, respectively). Ghrelin showed positive correlations with BMD-FN and with BMD-F which remained significant after adjustment for BMI and calcium intake ($r = 0.24$; $p < 0.05$ and $r = 0.22$; $p < 0.05$, respectively). No significant correlation was found between ghrelin and BMD-LS. By dividing the study population in tertiles on the basis of ghrelin values, we observed that CTX was greater in the highest with respect to the lowest tertile (0.626 – 0.098 vs 0.428 – 0.078 ng/ml; $p = 0.050$).

Conclusions. Our study seems to suggest a positive effect of ghrelin on BMD at femur in elderly men. Further studies are needed to elucidate the role of ghrelin on bone metabolism.

P-78

MORTALITY AFTER HIP FRACTURE: AN ESTIMATE OF RELATIVE AND ABSOLUTE EXCESS MORTALITY BASED ON DATA SEARCHES AND TIME-TO-EVENT META-ANALYSES

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Background and aims. To determine the magnitude and duration of excess mortality after hip fracture among postmenopausal women and aging men, both in relative and absolute terms of excess mortality.

Methods. Time-to-event meta-analyses based on survival curves and life-table methods applied to a US population.

Results. Pooled data from 24 papers indicate that women have a significant five-fold (relative hazard (RH) 5.36; 95% confidence interval (CI): 4.61–6.23), and men an even seven-fold (RH 7.29; 95%CI: 5.68–9.36) increase in relative likelihood of death versus controls during the first three months after hip fracture. The RH declines substantially thereafter, but, in both genders, a moderately greater, and statistically significant relative risk of mortality persists even 15 years after injury, with pooled RHs of 1.55 (1.38–1.75) and 1.35 (1.25–1.46) in women and men, respectively. Translated into absolute risk differences, a white US woman sustaining a hip fracture at age 70 has an excess mortality of 5%, 9%, and 15% at 2, 5, and 10 years after injury. For a white US man excess mortality is 9%, 13%, and 17%. At age 75 these differences are 7%, 13%, and 20% in women, and 14%, 19%, and 20% in men. At age 80 these differences are 12%, 19%, and 21% in women, and, 21%, 24%, and 19% in men.

Conclusions. In both genders, the relative risk of death after hip fracture is always higher than that of age- and sex-matched controls, even 15 years after injury. The absolute risk difference in mortality is higher among aging men than among postmenopausal women.

P-79

AGE-RELATED CHANGES IN SERUM TESTOSTERONE AND SEX HORMONE BINDING GLOBULIN IN UKRAINIAN MEN

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Background and aims. The purpose of this study was to assess sex steroid levels in a cross-sectional cohort of men. 160 men in age from 30 to 79 years ((M ± m): age – 57.6 ± 1.2 years; height – 1.74 ± 0.06 m; weight – 83.6 ± 1.2 kg) were examined and divided into the following age-dependent groups: 20–29, 30–39, 40–49, 50–59, 60–69, and 70–79 years old.

Methods. Levels of testosterone and sex hormone binding globulin were determined by the method of immunoadherence technique, free and bioavailable testosterone were calculated using action equations.

Results. The indices of hormonal status in men depending on age are represented in Table I.

Parameters	30–39 years	40–49 years	50–59 years	60–69 years	70–79 years
n	17	34	33	41	35
Age, years	36.0 ± 0.5	45.5 ± 0.4	55.1 ± 0.5	65.1 ± 0.5	72.9 ± 0.5
Height, m	1.79 ± 0.02	1.76 ± 0.01	1.74 ± 0.009	1.72 ± 0.01	1.71 ± 0.01
Weight, kg	85.8 ± 4.6	86.1 ± 2.8	85.7 ± 2.4	82.4 ± 2.3	78.6 ± 2.2
BMI, kg/m^2	26.5 ± 0.8	27.6 ± 0.9	28.4 ± 0.6	27.9 ± 0.7	27.0 ± 0.6
SHBG, nmol/L	35.9 ± 4.7	38.4 ± 3.8	37.8 ± 2.4	43.7 ± 4.4	55.3 ± 3.8
T, nmol/L	21.9 ± 1.6	15.1 ± 0.8	17.1 ± 1.0	14.6 ± 1.0	14.2 ± 1.0
FT, nmol/L	0.51 ± 0.05	0.30 ± 0.02	0.35 ± 0.02	0.28 ± 0.02	0.23 ± 0.02
FT, %	2.23 ± 0.14	2.07 ± 0.11	2.02 ± 0.08	1.93 ± 0.10	1.55 ± 0.07
BT, nmol/L	11.9 ± 1.2	7.1 ± 0.4	8.2 ± 0.6	6.5 ± 0.5	5.3 ± 0.5
BT, %	52.4 ± 3.3	48.5 ± 2.6	47.5 ± 1.9	45.2 ± 2.2	35.5 ± 1.7

Results are represented as M ± m, BMI, body mass index; SHBG, sex hormone binding globulin; T, testosterone; FT, free testosterone; BT, bioavailable testosterone.

We found the positive correlation between age and level of SHGB in serum ($r = 0.22$, $p = 0.029$). Also we established negative correlation between age and level of testosterone and its fractions: testosterone ($r = -0.32$, $p = 0.001$), free testosterone ($r = -0.43$, $p = 0.000007$), bioavailable testosterone ($r = -0.32$, $p = 0.001$).

Conclusion. Age significant affect on the indexes of hormonal status in men. Aging correlates with decline in the level of testosterone and its fractions and increase in the level of SHGB.

P-80

ACCOUNTING FOR RACIAL AND ETHNIC HETEROGENEITY IN BONE MASS AMONG MEN

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Background and aims. Racial/ethnic variation in fracture risk is well documented, but the mechanisms by which such heterogeneity arises are poorly understood. We undertook an analysis of 662 black, Hispanic and white men enrolled in the Boston Area Community Health/Bone (BACH/Bone) Survey to determine the contributions of socioeconomic status (SES), health history, diet, and body composition to age-adjusted racial/ethnic differences in bone mineral content (BMC) at the femoral neck.

Methods. BMC and body composition (total lean and fat mass) were ascertained by dual X-ray absorptiometry. SES (education and income), dietary intake (caloric intake, fat intake, caffeine), and health and lifestyle factors (major comorbidities and smoking status) were obtained via interview. Analyses measured percentage reductions in estimated racial/ethnic differences in BMC accompanying the successive addition of covariate groups to models adjusted for age and race/ethnicity only (which accounted for 17% of variability in BMC).

Results. Body composition was the strongest potential contributor to racial/ethnic variation in BMC, accounting for over 45% of the mean difference between black and white men. Of other factors, caffeine intake and SES exhibited the strongest influence, accounting for an additional 16% and 5% in black/white differences in BMC, respectively. The influence of other factors (including serum testosterone and estradiol) was negligible. Controlling for all factors removed approximately 70% of the apparent difference in BMC between black and white subjects. Results for other racial/ethnic comparisons were similar.

Conclusions. These cross-sectional analyses suggest that much of the racial/ethnic heterogeneity in fracture risk can be accounted for through variation in body composition, diet, and SES.

P-81

CASE OSTEOPOROSIS. EXPENSIVE PREVENTION?

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Background and aims. Osteoporosis is defined by low bone mass density and the increased fragility of bone which increases the risks of bone fractures. The measurement of bone mass by densitometry (BMD) is central to the diagnosing of osteoporosis and deciding about the treatment.

Osteoporosis has started to be marketed as a national disease in Finland, and it is a good example to show how the practices and the use of resources in healthcare change without being evidence-based. However, publicly funded operations should be based on empirical research.

This is a new study mainly concentrating on the cost benefits of the osteoporosis screenings and their pros and cons.

The diagnosis of osteoporosis leads to the treatment of risk. In Finland, the use of the medicines to prevent osteoporosis, bisphosphonates, has increased more than threefold in 1998–2004.

Methods. The aims of this study are 1) to increase the understanding of the processes and dynamics that drive the diagnostics of osteoporosis, 2) to empirically investigate how often bone density is screened in Finland and finally 3) to estimate the treatment of osteoporosis with medicines in the Finnish mainly publicly funded healthcare system.

Conclusions. The study is about to be started now.

Poster session: Incontinence

P-82

OUR EXPERIENCE WITH MANIPAL PENILE CLAMP FOR MALE INCONTINENCE

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Background and aims. In spite of advancements and technology and the expertise of treating urologists, post-operative incontinence is still a nightmare to urologists. There are various treatment options available to treat incontinence. For a significant number of patients, the expensive methods

of treating incontinence are beyond their reach due to financial constraints. This brings penile clamps as a viable option of treating this group of patients.

Stockmanns penile clamps are not available, hence in our hospital we were commonly using clamps which are locally made which cause a lot of uneasiness and are uncomfortable to the patients using it.

Methods. At Kasturba Hospital from 2001 to 2005 we had 2,457 turp and 7 open prostatectomies. We had 15 patients with post-prostatic incontinence in our hospital, 13 patients after turp and 2 patients after open prostatectomy. The Manipal penile clamp was used in a total of 28 patients. Out of this 15 were our patients and 13 were patients referred by urologists practising elsewhere. Five patients were initially using the Cunningham clamp and they were asked to change over to the Manipal penile clamp for a comparative study.

Results. Observations were done in terms of efficacy, complications and patient acceptability. Follow up was done for 24 months. Most of the patients required a change of penile clamp at 6–9 months.

Conclusions. The Manipal penile clamp is cheap (40 rupees, less than a US Dollar), easy to use, comfortable and effective. There were no skin problems.

P-83

SURFACE ELECTROMYOGRAPHY IN PELVIC CHRONIC PAIN SYNDROME TIPE III. A CASE CONTROL STUDY

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Background and aims. Pelvic floor muscle (PFM) instability has been reported in pelvic chronic pain syndrome type iii/chronic prostatitis (PCPS). Our aim is compare the surface electromyography (SEMG) in PCPS versus healthy volunteers.

Methods. SEMGs were performed with electrodes 3 cm from anal sphincter in 11 healthy volunteers (control group: GC) and 12 men suffering PCPS (prostatitis group: GP). We used a Verymed Myoexerciser device. The GP inclusion criteria was PCPS with a minimum of 3 months with no pathological origin to explain the pain. Using a DB Excel, data were collected and analysed by SPSS10.0 sw.

Results. Age was 46.36 yrs SD $\pm$ 10.63 in GC and 45.58 yrs SD $\pm$ 12.96 in GP. The logistic regression results as most important variable average of resting SEMG (PAVRG) (Wald = 5.4; $p = 0.019$) representing the resting tonus of PFM, was 0.079 microV SD $\pm$ 0.084 in GC, and 0.49 microV SD $\pm$ 0.27 in GP. PAVRG was 0.41 microV higher at GP ($p = 0.000$ ANOVA). The amplitude of SEMG represents the resting electric activity of PFM, it was 0.044 microV SD $\pm$ 0.026 in GC and 0.65 microV SD $\pm$ 0.79 in GP, it means 0.60 microV higher in GP ($p = 0.019$ ANOVA).

Conclusions. The most important variable from the SEMG is PAVRG. The statistically significant difference of PAVRG shows an increased tonus of PFM in men with PCPS, also they have unstable PFM as shows in the higher amplitude of SEMG ($p = 0.019$). This data strongly suggest the great value of SEMG in diagnosis of PCPS; also it opens up the possibility of use in alternative therapeutics focused in PFM as Botox, neuromodulation and biofeedback.

P-84

THE EFFECT OF TAMSULOSIN TREATMENT DIMINISHES FOR LUTS PATIENTS WITH SEVERE ED AMONG JAPANESE MIDDLE-AGED MALES

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Background and aims. LUTS and ED are strongly associated, although the exact pathophysiology is poorly understood. This study looks at whether Tamsulosin treatment for LUTS patients with ED is effective.

Methods. A total of 75 were enrolled on this study from January 2006 to April 2007. All subjects aged 40 to 60 were prescribed for treatment of Tamsulosin (0.2 mg/day) for 3 months. The patients were assessed based on IPSS for LUTS, IIEF5 (International Index for Erectile Function), and AMS (Aging Males' Symptom) score. Seventy-five subjects completed this treatment for 3 months and examinations. Good response to Tamsulosin treatment was defined as ratio of IPSS scores (after/before) less than equal to 0.75. Forty-four (59% of subjects) were classified to good response.
This study was approved by ethical committee of St Marianna University.

Results. IIEF5 score in good response (10.8 $\pm$ 7.4) was significantly higher than in poor response (7.6 $\pm$ 6.3). AMS-E (AMS-erectile) score in good response were significantly lower than in poor response. Prevalence of severe erectile dysfunction in good response (53.5%) was significantly lower than in poor response (77.4%). On the other hand, 20 (74.1%) among 27 patients with mild ED showed good response. Relationship between severe- and mild-ED and good- and poor-response by Chi-square test was significant ($p = 0.0349$).

Conclusions. These results indicated erectile function related to response of Tamsulosin treatment for LUTS in middle-aged males. This finding suggested LUTS may associate with ED.

Poster session: Prostate cancer

P-85

LONG-TERM STUDY OF PROSTATE SAFETY AND TESTOSTERONE TREATMENT

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Background and aims. For patients taking testosterone supplementation, clinical concern relates to the progress of undiagnosed prostate cancer or its development with advancing age. An updated audit of prostate safety from the UK Androgen Study (UKAS) will be presented.

Methods. 1,675 men with androgen deficiency and receiving testosterone treatment have been monitored for up to 15 years. All patients have undergone at least annual digital rectal examination (DRE) and PSA; abnormal findings or rising PSA have been further investigated by transrectal ultrasound and prostate biopsy for cancer detection. Urinary symptoms, renal function and endocrine profiles were also monitored. The data are compared for the different testosterone preparations used.

Results. Thirteen cases of prostate cancer were diagnosed by pre-screening (0.5%), and 14 new cases occurred during approximately 2,400 man-years of treatment. Treatment duration prior to diagnosis of cancer ranged from 6 months to 15 years, and all tumours were clinically localized. Treatment had no significant effect on total PSA, free PSA or total/free PSA ratio. There was no significant change in urinary symptoms or renal function. These results were unrelated to testosterone preparation in spite of significant differences in endocrine profiles.

Conclusions. 0.58 new cases of early stage prostate cancer were diagnosed per 100 man-years, confirming that prostate cancer is an uncommon but important diagnosis in men receiving androgen replacement therapy. This study emphasises the safety of treatment provided the patient is fully assessed for prostate cancer before commencing treatment, as well as the need for continued monitoring during treatment.

P-86

PREDICTORS OF PROSTATE CANCER SCREENING AMONG OLDER IMMIGRANT MEN

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Background and aims. Prostate cancer is the most common cancer and second leading cause of cancer-related mortality among American men. However, the prostate cancer screening behaviours among older immigrant men are poorly understood. The purpose of this study is to examine predictors of prostate cancer screening among older immigrant men who hold legal permanent residency status.

Methods. This study analyses data from the first full cohort of the New Immigrant Survey. It utilizes the Andersen behavioural model of services use. A total 328 older men who have recently acquired legal permanent residency are included in the study. Bivariate statistics and logistic regression are performed to examine significant predictors of prostate cancer screening.

Results. 115 (38.8%) report having had an examination of the prostate to screen for cancer. Prostate cancer screening among older immigrant men is statistically associated with access to health insurance [χ^2 9.03 (df = 1); $p = 0.0027$], healthcare access patterns prior to migration [χ^2 11.01 (df = 4); $p = 0.0264$], region of origin [χ^2 25.75 (df = 3); $p < 0.0001$] and living arrangements [χ^2 4.24 (df = 1); $p = 0.039$].

Conclusions. Understanding the health status and needs of older immigrant men is important because of their growing numbers and their contribution to the health of the nation. The results from this study show that older immigrant men experience a significant gap in prostate screening utilization. More attention is needed to overcome screening barriers for this population if their benefits of prostate cancer screening are to be achieved.

P-87

LOWER URINARY TRACT SYMPTOMS AND RELATED QUALITY OF LIFE IN THE AGING MALE – A TWO-YEAR EXPERIENCE

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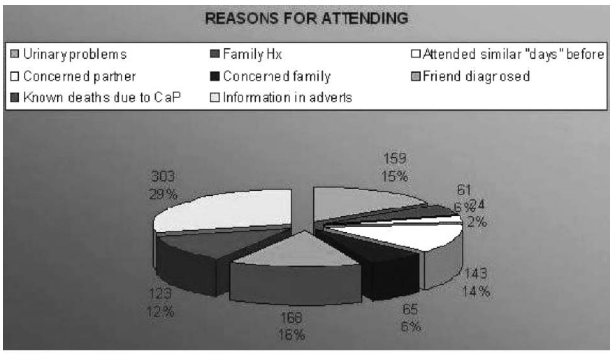
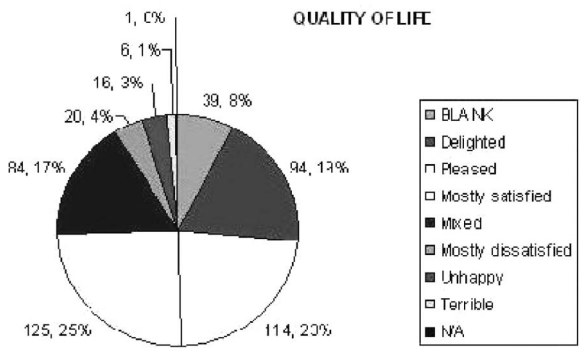
Background and aims. To study incidence of lower urinary tract symptoms and quality of life in population of aging men and factors affecting men's opinion on health issues, over a two-year period.

Methods. Prostate Cancer Awareness days were held on 25th January 2006 and 24th January 2007, by the Prostate Cancer Support Association and Coventry Leofric Lions. Advertisements were placed in various media. Forms (based on the IPSS) were filled in by those who attended.

Results. Over 200 and 375 people attended the two Awareness days and data collected on 171 and 337 men (respectively). Mean ages 61.5 and 65 yrs. About 30% came because of advertisements while only 16% had some urinary symptoms. Nocturia was commonest symptom (8%, 9%) while hesitancy the least common (1%, 1%). About 65% men (63% and 67% respectively) were more than satisfied with their quality of life.

Conclusions. Advertisements play a major role in shaping public opinion on health issues. The majority of the aging men are satisfied with their quality of life, despite some lower urinary tract symptoms.





P-88

RANDOM PSA TESTING IN THE AGING MALE – A TWO-YEAR UK EXPERIENCE

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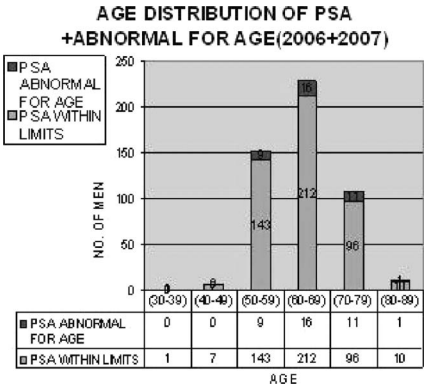
Background and aims. To study the incidence of raised blood prostate specific antigen (PSA) level and of prostate cancer upon PSA testing ± digital rectal examination (DRE) in a random population of aging men.

Methods. Prostate Cancer Awareness days were held on 25th January 2006 and 24th January 2007, organized and sponsored by the Prostate Cancer Support Association and Coventry Leofric Lions. Advertisements were placed through various media. Blood test for PSA levels and digital rectal examination (DRE) were offered on a voluntary basis.

Results. Over 575 people (200 and 375 respectively) attended the Awareness Days. 508 men (171 and 337) with

PROSTATE CANCER AWARENESS DAY	25th Jan 2006	24th Jan 2007	TOTAL (2006 + 2007)
Attendance	> 200	> 375	> 575
Data collected (PSA done)	171	337	508
DRE done	61	295	356
Mean age (years)	61.5	65	63.25
Mean PSA (ug/L)	2.09	2.02	2.055
Average IPSS	7.04	7.88	7.46
Biopsies performed	12		
Adenocarcinoma on histology	4		
Radical prostatectomy	1		



mean ages 61.5 and 65 years (30–89 years) had PSA levels checked. Sixty-one and 295 men had both PSA blood test and DRE performed. Seventeen and 28 men had abnormal PSA levels for their age while 6 and 16 men had abnormal prostate gland on DRE. Twenty-one men from 2006 were followed for one year with repeat PSA and DRE, 12 biopsies performed and one underwent radical prostatectomy. Men with high PSA and/or suspicious DRE from 2007 are under follow-up currently.

Conclusions. Random PSA testing in the aging male helps in early detection of prostate cancer and keeps them under active surveillance.

P-89

DIAGNOSTIC METHODS OF EARLY DETECTION OF PROSTATE CANCER IN AGING MALES

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Background and aims. To define diagnostic methods of early detection of prostate cancer in aging males.

Methods. Seventeen men aged 60–80 years with suspected prostate cancer were surveyed. Research has shown, that in 6 (35.3%) patients the level plasma testosterone was defined on the bottom border of norm and 9 (64.7%) were below norm. The level of the general PSA plasmas of blood varied from 8 up to 64.5 ng/ml. Manual rectal investigation (MRI) of prostate in all patients has revealed changes characteristic for prostate cancer. According to transrectal ultrasound prostate (TUP) are revealed hypo-and hyperechoic focuses in a peripheral zone prostate without infringement of integrity of its capsule.

Results. Criteria of inclusion of the patient for primary biopsy prostate were: 1) infiltration or nodes, condensation, non-uniformity of a consistence prostate according to MRI; 2) hypo-and hyperechoic focus in a peripheral zone prostate with or without infringement of integrity of its capsule; 3) increase of a level of the general PSA more than 4 ng/ml. Eleven patients' results were positive concerning prostate cancer. Criteria of inclusion of the patient for repeated biopsy were: 1) negative result primary biopsy concerning a prostate cancer at volume prostate to 65 ml; 2) increase of a level of the general PSA more than 4 ng/ml; 3) revealing characteristic attributes of malignancy according to MRI and TUP. Four patients' results corresponded to prostate cancer and two patients' results were negative.

Conclusions. The received clinical results and the above-stated diagnostic actions allow detection of prostate cancer at an early stage in the aging male.

P-90

DEPRESSION AFTER RADICAL PROSTATECTOMY FOR PROSTATE CANCER

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Background and aims. Radical prostatectomy commonly results in urinary, sexual, and bowel dysfunction that bothers men, and may lead to depressive symptomotology that occurs at a rate four times greater for men with prostate cancer than healthy counterparts. The purpose of this study was to assess depressive symptoms in men shortly after radical prostatectomy and to identify associated risk factors.

Methods. Seventy-two men were interviewed six weeks after surgery to measure depression (Geriatric Depression Scale), self-efficacy (Stanford Inventory of Cancer Patient Adjustment), social support (Modified Inventory of Socially Supportive Behaviours), physical and emotional factors (UCLA Prostate Cancer Index) and social function (SF-36 subscale).

Results. Results revealed that men with high self-efficacy and less sexual bother were 45% and 55% less likely to have depressive symptoms, respectively. Physical dysfunctions were found to be associated with depressive symptoms.

Conclusions. Findings from this study add to the limited amount of information on the complex relationship between prostate cancer treatment and depression in men.

P-91

A QUALITATIVE SYSTEMIC MODEL DESIGNING THE CONSTRUCTION OF INFORMATIONAL STRATEGIES TO LIVE AND DEAL WITH PROSTATE CANCER-RELATED INFORMATION

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Background and aims. Functional health literacy also challenges cancer care. This doctoral research dealt with the informational strategies necessary for older men to live and deal with prostate cancer (PC)-related information. Health as expanding consciousness, critical consciousness, innovative learning, and constructivism are the philosophical/theoretical underpinnings of the inquiry. It aimed to describe, analyse, and understand the processes of building informational strategies according to self-reported functional health literacy.

Methods. A qualitative modelling design guided the inquiry to explore the lived experiences and informational strategies of 15 Canadian, French-speaking men aged from 61 to 83 years with PC. Purposeful sampling method composed the final sample. Interviews, genograms and ecomaps were used for data collection. Findings were submitted to content analysis and then the conceptual model was built.

Results. Data revealed that cultural and social capital inspired their daily informational strategies to create or be in contact with an informational network. The systemic model designs the construction of informational strategies to attain the primary goals of understanding PC, regaining decision-making about one's body and destiny, and redefining social roles. The model unfolds by balancing informational needs, gaps, and resources. Mechanisms frame information transformation, exchanges with the environment and the search for meaning. Understanding illness and activating the informational network assume commitments and propel the informational search. Thereafter, application of knowledge and assessment of information become possible.

Conclusions. Older men transform life and evaluate when to cease information-gathering. The final image displays a partially stable open-system combining the simultaneous actions of the informational, operational, and decisional subsystems.

P-92

HINTS OF A TRANSCULTURAL REPRESENTATION OF PROSTATE CANCER AMONG CANADIAN MEN

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Background and aims. Health services should consider the masculine representation of diseases, which underlie men's health behaviours. This study aims were:1) to identify the experiences of men with prostate cancer (PC) from different ethnocultural backgrounds, including their essential thoughts related to learning the medical diagnosis, telling their family about the diagnosis, facing moments of frustration, and reassessing life priorities; 2) to describe major representations of PC as they relate to the aforementioned thoughts; 3) to specify the essential similarities among representations of PC; and 4) to assess the existence of hints of a core transcultural representation of PC.

Methods. Nine Canadian European descent men enrolled in a PC support group in south-eastern Ontario comprised the

sample. Data were collected through interviews, genograms and ecomaps. The qualitative software ATLAS ti supported data-coding. The contrasting-ideas method guided analysis and interpretation of findings.

Results. Major findings with regard to the influence of familial values on participants' health behaviours related to PC. The representation of PC involves a core idea that PC is a disease that demands efficient use of limited time. The men needed time to gather information, create a sense of predictability, certainty, and normality and to perceive themselves as empowered and in control.

Conclusions. Health professionals must assist men to understand that an immediate investment of time is imperative to adequately decode and understand medical information, consider alternative therapies, and reflect on the potential outcomes of their decisions.

Poster session: Benign prostatic hypertrophy

P-93

INDIVIDUAL FACTORS PREDICTED TO RESPONSE OF TAMSULOSIN TREATMENT FOR LUTS AMONG JAPANESE MIDDLE-AGED MALES

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Background and aims. Lower urinary tract symptoms (LUTS) seem to have reduced quality of life even among so-called healthy middle-aged males. From viewpoints of primary care, this study aims to elucidate individual factors predicted to response of Tamsulosin treatment for LUTS.

Methods. Subjects who have visited ten urological outpatient clinics were enrolled in this study from September 2006 to April 2007. All subjects aged 40 to 60 were prescribed for treatment of Tamsulosin (0.2 mg/day) for 3 months. Clinical examinations and questionnaires were administered before and after this treatment. Clinical examinations include residual urinary volume, peak (Qmax) and average (Qaver) urinary flow, prostate volume (PV) and PSA. Questionnaires included IPSS, SF36 and HADS (Hospital Anxiety and Depression Score), AMS score and PADAM score. Seventy-five subjects completed this treatment for 3 months and examinations. Good response to Tamsulosin treatment was defined as ratio of IPSS-QOL scores (after/before) less than equal to 0.75. Forty-four (59% of subjects) were classified as good response (G-group).

This study was approved by the ethical committee of St Marianna University.

Results. PADAM and AMS-erectile in G-group were significantly lower than in P-group. However, age, AMS-B, AMS-M, HADS, Qmax and Qaver, PV, PSA, habits of smoking and drinking, past history of diseases indicated no statistical differences between G- and P-group.

Conclusions. These results indicated erectile function related to response of Tamsulosin treatment for LUTS. Prevalence of obesity (BMI $\geq$ 25), hypertension, diabetes mellitus and dislipidemia in P-group seems to be higher than in G-group. This finding suggested metabolic syndrome seems to inhibit good response of Tamsulosin treatment.

P-94

TRANSURETHRAL RESECTION OF THE PROSTATE USING BIPOLAR ENERGY: EXPERIENCE FROM A LARGE SAMPLE AND SINGLE INSTITUTE

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Background and aims. A prospective study was conducted to evaluate the efficacy and safety of PlasmaKinetic vaporization of prostate (PKVP) in the surgical management of benign prostatic hyperplasia (BPH).

Methods. Between March 2001 and February 2006, 1,100 patients aged 49 to 93 years (median 69 years) with a complaint of lower urinary tract symptoms and a mean prostate volume of 49 ± 16 cc at a mean follow-up of 21.4 ± 5.7 months (range 12 to 36) were enrolled in this study. We evaluated the operating time, blood transfusion, post-operative irrigation period, and catheter removal time. Patients were assessed at baseline and during the follow-up using the International Prostate Symptom Score (IPSS), Quality of life (QOL) and maximum urinary flow rate (Qmax).

Results. The mean operation time for PKVP was 49.3 ± 37 minutes. The post-operative irrigation period was 8 ± 7 hours. The mean catheter removal time was 39 ± 10 hours. The group had comparable mean IPSS, QOL and Qmax values at baseline, and had significant improvement in these parameters after operation in different time. There were no transfusions in the PKVP group. No transurethral resection syndrome occurred. Recatheterization was necessary in 73 cases (6.6%). During follow-up urethral stricture formation was observed in 19 patients (1.7%) cases. Reoperation was required in 21 (1.9%) cases.

Conclusions. Transurethral surgery with PlasmaKinetic bipolar energy seems to be a promising alternative to prostatic tissue removal with short operating time, smaller blood loss, shorter period of irrigation and catheterization, use of isotonic fluid, and absence of electrical current.

Poster session: Erectile dysfunction

P-95

ALTERED EXPRESSION OF THE ANGIOGENIC FACTORS VEGF AND ANG-2 IN AGED ERECTILE TISSUE

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Background and aims. Erectile dysfunction (ED) is a common problem in aging man. Vasculogenic ED is the major etiology, referring to the impairment of vascular perfusion, mediated by endothelial (ECs) and smooth muscle cells (SMCs). Given the importance of cavernosal vasculature, any functional alteration may affect erectile capabilities, highlighting the role of angiogenesis in maintaining vascular homeostasis. Since age-related alterations in the angiogenic process have been proposed, we decided to evaluate in aged erectile tissue the expression of two essential molecules involved in vascular renewal/function and their role in ED.

Methods. Using cavernosal tissue harvested from male Wistar rats of various ages (2, 6, 12, 18, 24 months old; $n = 5$), we assessed by immunohistochemistry and ELISA, the expression of the pro-angiogenic molecules, vascular endothelial growth factor (VEGF) and angiopoietin-2 (Ang-2).

Results. Immunohistochemical analysis for VEGF demonstrated that this vascular growth factor was low expressed in cavernosal SMCs and ECs of all age groups. Concerning Ang-2, immunodetection results suggested that this protein was absent in erectile components of younger and aged animals. In order to confirm the immunohistochemical results, we decided to evaluate and quantify VEGF and Ang-2 proteins by ELISA (data presented as pg/mg total protein). We observed that VEGF protein increased in penile tissue with aging, ranging from 2.69 in younger to 7.83 in

elderly animals. Ang-2 expression was undetectable by ELISA.

Conclusions. Overall, we showed that in elderly penile tissue there is an increase in VEGF production and lack of Ang-2, indicating that cavernosal vascular renewal/function may be altered, with subsequent effects on erectile function.

P-96

ASSOCIATION BETWEEN ERECTILE DYSFUNCTION AND DIABETES: THE MULTINATIONAL MEN'S ATTITUDES TO LIFE EVENTS AND SEXUALITY (MALES) STUDY

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Background and aims. Erectile dysfunction (ED) and diabetes are often concomitant, with more than 50% of diabetic men going on to develop ED within 10 years of diagnosis. This study compared perceptions of ED and treatment-seeking behaviour in men with ED and diabetes with those of men with ED but without diabetes.

Methods. A total of 27,839 men aged 20–75 years were randomly recruited to the Men's Attitudes to Life Events and Sexuality (MALES) study. Participants were interviewed on health issues including ED and diabetes. Men with self-reported ED ($n = 2{,}912$) subsequently completed questionnaires concerning ED and treatment-seeking for ED. Responses of men with ED and diabetes were compared with those of men with ED without diabetes.

Results. Of the study population, 16% reported ED; 5.9% (1,637) reported diabetes of which 39% had concomitant ED. Men with diabetes were significantly more likely than men without ($p < 0.0001$) to consider their ED to be severe (44% versus 24%) and permanent (69% versus 42%), and to consult a physician or nurse (72/11% versus 55/5%). Sildenafil use was similar between groups; however, due to poor treatment efficacy men with diabetes were more likely to discontinue use.

Conclusions. This study demonstrated a clear association between self-reported ED and diabetes. The perception of ED in men with diabetes was markedly different from those without, and persistence with sildenafil was reduced in this group, mainly due to poor efficacy. These findings indicate a need for alternative therapies for men with ED and concomitant diabetes.

P-97

NATIONAL TRENDS OF MARITAL STATUS AND AGE ON PHOSPHODIESTERASE-5 INHIBITORS (VIAGRA) UTILIZATION IN THE VETERANS' HEALTH ADMINISTRATION

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Background and aims. The Veterans' Health Administration (VHA) is a horizontally and vertically integrated healthcare system that has served over 5.2 million male patients, an ideal population to look at phosphodiesterase-5 inhibitors (PDE-5) utilization.

Methods. We analysed of two years of PDE-5 medication, fiscal years 2004–2005, for 547,255 male patients 18 years of age or older by marital status, age, and cost.

Results. Nearly 10.5% of the approximately 5.2 million male patients treated in the VHA were dispensed a PDE-5 costing $61.8 million. Use ranged from only 0.41% for those less than 25 years of age to 16.5% for those between the ages of 55–59. Of the 547,255 male PDE-5 patients, 57.4% were married, 41.6% were not married, and 1.0% responses were unknown. The prevalence of PDE-5 use over the two-year study period was 105.2 patients per 1,000 male veterans aged 18 years or older. Moreover, 36.8% of all utilization involved men 65 years of age or older, while 23.9% were 70 years of age or older.

Conclusions. The large percentage of men over the age of 70 in the VHA taking PDE-5 raises concerns over safety, since this group is known to be at high risk from multiple drug interactions and have a high burden of chronic disease. In spite of published guidelines for diagnosing and treating erectile dysfunction (ED) in veterans, obtaining a reliable measure of actual clinical ED in veterans is difficult and may vary across socio-economic and cultural dimensions because of the potential stigma associated with this diagnosis.

P-98

LIFE STYLE, LIBIDO, ERECTILE DYSFUNCTION AND TESTOSTERONE

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Background and aims. Hypogonadism in male population over 50 years is considered to cause most of late-onset hypogonadism (LOH) symptoms. Changes of LOH symptoms are compared in males who lived under different conditions after the unexpected change of social system in Czech Republic.

Methods. Characteristics of two groups of LUTS symptomatic patients referred to Urocentrum are compared. There are analysed data of 54 men in group A (age $50 < 55.6 > 74$) examined first in 1990–1991 and 52 patients in group B (age $50 < 57.8 > 75$) treated later in 2004–2005. Subjective symptoms, objective findings and some laboratory results were weighted.

Men in group A (as opposed to group B) lived till their fifties under socialism, a system which supported neither competition, nor individual ambition to come to the fore. Risk of unemployment was zero. Demands of the new system were entirely contradictory. Necessity to cope with the new conditions has led to an increase of sexual problems.

Results. Obstructive (A44/B41) and irritative symptoms (A20/B18) were similar. Other parameters differed: normal libido A50/B42, ED group A just in 6 cases, against B, 28. Normal T found in A, 50 and B, 42. Life under stress: A only 7 patients while B, 29. A group T supplementation in 7 cases (in 5 effective), as opposed to group B, 40 (19 effective).

Conclusions. LUTS symptoms in both groups were similar. But the life in the new, demanding and competitive ambience often caused sexual problems, mainly erectile dysfunction. Authors concluded that the new conditions negatively influenced QOL of aging males. The presentation analyses further data in detail.

P-99

VALIDATION OF SENS AS A FIRST LINE SCREENING TEST IN THE EVALUATION OF ERECTILE DYSFUNCTION

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Background and aims. The objective of the study is to assess the degree of erection to subcutaneous electrical nerve stimulation (SENS) in patients with erectile dysfunction.

Methods. In this study 1,222 patients with erectile dysfunction were included. A stimulator was employed for subcutaneous electrical nerve stimulation (AC 50 Hz) that could deliver a constant current. The Electrodes Ring was introduced on the shaft of the penis and was connected to the stimulator. The strength of the current was gradually increased till the patient reported vibratory sensation. The patient was given books of erotic heterosexual material and asked to stroke the penis with one of his hands. If patient was observed to have erection, the penis was palpated to evaluate the degree of rigidity attained.

Results. The patients in the study group were between 24 to 62 years. Out of the 1,222 patients included in the study 798 patients developed full degree of tumescence and rigidity following SENS. 424 patients showed a weak penile erection.

Conclusions. SENS is a totally non-invasive and simple office procedure. SENS is cost effective and reasonably sensitive. We are of the opinion that SENS can be validated as a first line screening test in the evaluation of erectile dysfunction.

P-100

EARLY ONSET OF EFFECT OF VARDENAFIL IN THERAPY FOR ERECTILE DYSFUNCTION. A PLACEBO CONTROL STUDY

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Background and aims. Fast onset of the effect of Vardenafil (OEV) has been reported. Our aim is show the OEV versus placebo in Latin Males with erectile dysfunction (ED), using the RigiScan test (RT).

Methods. Sixteen patients with IIEF-5 score $\leq$ than 21 points were included, randomly assigned in two groups: group A (GA) – Vardenafil 20 mg; group B (GB) – placebo.

RT was performed by the same nurse using the RigiScan Plus device. After the basal test of 50 minutes, each patient took 20 mg of Vardenafil or placebo, relaxed for 5 minutes, and the test continued for 50 minutes or more. All patients signed an informed consent. Data were collected in Excel DB and processed using the statistic software SPSS.

Results. Difference in response between both groups was statistically significant (XMH = 2.9) with a Pearson's R = 0.77 ($p = 0.000$).

Start of responses in GA was 31 minutes (min.11, max.60), with age of 48.3 years (range 32–60). The earliest onset of effect was 18 minutes (range 11–22), observed in three patients whose last meal was 2 hours ago (age 48.6 years, range 39–58). In GB, the responses were observed in only one patient 46 years old, the average age was 52.5 years (range 31–67). The response was independent of age (X2MH = 0.000, $p = 1.000$).

Conclusions. This paper shows OEV with a partially empty stomach could be as soon as 11 minutes, even in a hostile place as the doctor's office. We recommend intake of the first dose as late as 2 hours from the last meal to get better results using Vardenafil.

P-101

PENILE EXTENSIBILITY. OFFICE FAST TEST FOR VASCULOGENIC ERECTILE DYSFUNCTION

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Background and aims. The most significant organic etiology for erectile dysfunction (ED) is vasculogenic. Fibrosis caused by hypoxemia impacts on penile extensibility. Our aim is to study the penile extensibility in healthy volunteers versus patients with vasculogenic ED.

Methods. After signing informed consent forms, 37 men were included in two groups. Group Control (GC). 14 healthy volunteers; and Group Problem (GP) 23 patients with vasculogenic ED, IIEF-5 score $\geq$22 points, diagnosed by Doppler Color of the penis (Normal parameters used: PFV $\geq$44 cm/sec in erection, increase of arterial diameter $>$75%, acceleration time $<$110 m/sec, resistance index $\geq$0.9). To calculate the extensibility, in all patients the length of the penis was sized in the rest position and under stretch (just before pain) using a metallic scale. In a DB Excel the data were collected and analysed using the software SPSS10.0.

Results. In GC, the mean age was 30.9 years (range 20–45), the average penile extensibility was 87.9% (SD14.97). In the GP, the mean age was 41.9 years (range 21–78) with an average of penile extensibility of 68.3% (SD19.1).

Conclusions. No statistical difference exists in age between the two groups ($p = 0.54$ by ANOVA). This paper shows statistically significant difference between the penile extensibility in healthy men (87.9%) versus men with vasculogenic ED (68.3%) $p = 0.004$ by T-test. Penile extensibility can be a useful clinical tool when diagnosis of vasculogenic impotence is suspected. It is important to know what morphometric difference exists between a healthy penis and a penis affected by fibrosis.

P-102

EFFICACY OF VARDENAFIL AND SILDENAFIL IN MEN WITH ERECTILE DYSFUNCTION AND RELATED CO-MORBIDITIES

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Background and aims. This analysis compared the efficacy of vardenafil and sildenafil in men with erectile dysfunction (ED) and related cardiovascular co-morbidities.

Methods. This was a pooled analysis of two randomized, double blind crossover studies, each comprising two 4-week treatment periods with either vardenafil 20 mg or sildenafil 100 mg, separated by a 1-week washout period. Men aged $\geq$18 years with ED for $>$6 months and hyperlipidemia, diabetes mellitus and/or hypertension were eligible. Assessments included the erectile function domain of the International Index of Erectile Function (IIEF-EF) and the Sexual Encounter Profile (SEP) penetration (SEP2) and successful intercourse completion (SEP3) questions. Grouped co-morbidity population results have been published elsewhere. Here, efficacy was assessed across co-morbidity subgroups. As these are post-hoc analyses, no statistical assessment was undertaken.

Results. Of 1,057 men randomized, 931 were included in the intention-to-treat population. Vardenafil was associated with greater improvements in mean IIEF-EF scores in ED patients with hyperlipidemia (vardenafil versus sildenafil, 10.23 versus 9.44), diabetes (8.68 versus 8.09), hypertension (9.75 versus 9.39), or $\geq$2 of these co-morbidities (9.36 versus 8.82). More patients receiving vardenafil responded positively to the SEP2 and SEP3 questions across co-morbidity subgroups (SEP2: hyperlipidemia, 82.83% versus 80.66%; diabetes, 76.28% versus 75.76%; hypertension, 81.61% versus 80.16%; $\geq$2 comorbidities, 78.91% versus 77.32%; SEP3: 72.68% versus 70.02%; 65.28% versus 63.03%; 72.20% versus 68.74%; 67.86% versus 65.10%).

Conclusions. Among men with ED and related co-morbidities, vardenafil treatment resulted in greater improvements in erectile function, and improved penetration and successful intercourse rates than treatment with sildenafil.

P-103

COMPARISON OF VARDENAFIL AND SILDENAFIL: TREATMENT PREFERENCE AND SATISFACTION AMONG MEN WITH ERECTILE DYSFUNCTION AND CARDIOVASCULAR COMORBIDITIES

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Background and aims. Patients with erectile dysfunction (ED) often have cardiovascular co-morbidities, including diabetes, hypertension and hyperlipidemia. This post-hoc analysis assessed treatment preference and satisfaction in men with ED and related co-morbidities following treatment with vardenafil and sildenafil.

Methods. A pooled analysis of two randomized, double blind crossover studies in the USA and Europe/Mexico was performed. Men aged $\geq$18 years with ED for $>$6 months with diabetes mellitus, hypertension, and/or hyperlipidemia were eligible to participate. Studies comprised two 4-week treatment periods with either vardenafil 20 mg or sildenafil 100 mg, separated by a 1-week washout period. Treatment preference and satisfaction were assessed across co-morbidity subgroups. Preference was assessed based on responses to the question 'Overall, which medication do you prefer?' Patients expressed a preference for either treatment, or no preference. The Treatment Satisfaction Scale (TSS) was completed by patients and their partners.

Results. In total, 1,057 men were randomized to treatment. The overall preference for vardenafil was higher than sildenafil among men with ED and hyperlipidemia (40.1% versus 31.4%); ED and diabetes (38.6% versus 34.5%); ED and hypertension (37.9% versus 34.1%); and ED plus $\geq$2 co-morbidities (39.2% versus 33.3%). Vardenafil was numerically superior to sildenafil for the majority of the patient TSS questions, regardless of co-morbidity subgroup. A similar trend in favour of vardenafil treatment was observed in partner TSS questions.

Conclusions. Vardenafil was preferred by greater proportions of men with ED and related co-morbidities than sildenafil, with numerically higher satisfaction with vardenafil versus sildenafil demonstrated in analysis of the TSS.

P-104

AGE-DEPENDENT PSYCHOLOGICAL ASPECTS OF ERECTILE DYSFUNCTION TREATMENT. PILOT RESULTS FROM 903 POLISH ED PATIENTS TREATED WITH VARDENAFIL

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Background and aims. To assess the efficacy of vardenafil and the influence on depressive symptomatology in a Polish male population with ED.

Methods. In this non-interventional, flexible-dose study, 903 patients attended initiating and control visits over approximately one month. Depression symptoms were assessed through voluntarily completed self-reported CES-D questionnaires (Center for Epidemiologic Studies Depression Scale). Patients were assessed as depressive when CES-D score $>$16. Erectile function was assessed by SEP2, SEP3 (penetration and maintenance parameters) based on patient diary.

Results. For the purpose of the analysis, the study population was divided into two groups of patients, either under ($n=287$) or over 50 years old ($n=616$). At the initiating visit, the mean CES-D score was similar for the younger and the older patient group (19.1 versus 18.8). The improvement of depressive symptomatology after one month of vardenafil treatment was reflected in the mean CES-D score decrease in both groups, with higher impact of vardenafil observed in the younger patient group (14.6 versus16 $p < 0.05$). Prior to the application of vardenafil treatment, mean SEP2 and SEP3 values were 59% and 14% in the younger and 58% and 7% in the older group, respectively. The SEP2 and SEP3 scores after one month of vardenafil treatment increased to 97% and 88% in the younger, and 95% and 84% in the older patients.

Conclusions. Vardenafil was clearly associated with an improvement of erectile function (SEP2, SEP3) in all ED patients. This effect was accompanied by a positive effect on depressive symptoms.

P-105

THE LINK BETWEEN ERECTILE DYSFUNCTION, METABOLIC SYNDROME AND TESTOSTERONE DEFICIENCY: OUTCOME OF DATA ANALYSES OF 771 ED PATIENTS

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Background and aims. Metabolic syndrome, characterized by central obesity, insulin resistance, dyslipidemia and hypertension, is highly prevalent. When left untreated, it significantly increases the risk of diabetes mellitus and cardiovascular disease, pathologies associated with erectile dysfunction. Hypogonadism is a frequent occurrence in metabolic syndrome, which may be again an etiological factor in erectile dysfunction often found in men with metabolic syndrome which is explained by endothelial dysfunction and oxidative stress, key elements in metabolic syndrome, affecting various components of the vascular biology of the penis.

Methods. 771 patients consulting for erectile dysfunction over a two-year period received comprehensive screening for symptoms of metabolic syndrome and hypogonadism.

Results. The average abdominal girth of these men was 104 cm (far above the 2005 cut-off point of 94 cm). 18.3% of the men were hypogonadal (testosterone $<$ 12 nmol/L). In this hypogonadal subgroup abdominal girth was 112.2 cm. 35% of the 771 had diabetes mellitus, in eight men hitherto undiagnosed. 31% had arterial hypertension, twelve of them hitherto undiagnosed. 21% had dyslipemia, nine of them hitherto undiagnosed. 29% had BPH or LUTS. 14% had coronary disease, five of them hitherto undiagnosed.

Conclusions. Erectile dysfunction is intertwined with metabolic syndrome and, in turn, with hypogonadism. Thus, erectile dysfunction is a portal into men's health, and a rational treatment the erectile dysfunction of these men will be composed of treatment of underlying manifestations of the metabolic syndrome, and of associated hypogonadism predisposing to both the metabolic syndrome and erectile dysfunction.

Poster session: Testosterone and the female

P-106

TESTOSTERONE (T) AND PROSTATE CANCER. IMPORTANCE OF MONITORING OF T VALUES FOR CLINICAL RESPONSE EVALUATION

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Background and aims. Incidence of prostate cancer (PC) has increased to 86.3/100,000. A lot of effort has been devoted to early detection of PC. On the other hand hypogonadal patients should be treated in time in the aim to prevent late onset hypogonadism (LOH). There are different levels recommended when to start with TRT. Low T levels do not lower risk of PC, and TRT should not increase risk of PC growth. Androgens suppression is the gold standard in advanced cases and lowers PSA and T values. The goal of optimal TRT is to keep castration level of T ($<$0.7 nmol/l).

Methods. Since 2005 monitoring of T has been a standard part of our therapeutic algorithm in PC. T is tested when

cancer is diagnosed, before and during hormonal therapy and when cancer relapses.

Results. The following data on 60 consequently detected PC in the year 2005 were found.

In group T1b-T2 were 38 cases of average age 64.3years GS 5.7 and T 15.3 nmol/l. T3NxM0 included 18 patients aged 66.8 on average, GS 6.4, T 12.4. Finally, the metastatic group contained 4 patients, average age 77.6 years, GS 7.6 and T 6.9 resp. PC was detected in 5 cases after previous TRT. In 12 other cases T levels were under 11 nmol/l and PSA varied under 20 ng/ml. We have never reached castration T level using antiandrogens (<0.7 nmol/l). But such level was confirmed, for various intervals, when LHRH were applied.

Conclusions. In our opinion malignant potential of PC and disease course does not differ in eugonadal and hypogonadal patients.

Poster session: Sexual function and the older couple

P-107

SEXUAL FUNCTIONING IN THE AGING MALE WITH CHRONIC ILLNESS AND DIMENSIONS OF DYADIC ADJUSTMENT: TARGET FOR GERIATRIC EDUCATION OF CLINICIANS

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Background and aims. This pilot study has been developed for the Geriatric Education Consortium and is based on the further analysis of the data, originally published by Dr Yu (Yu et al., Am J Geriatric Psychiatry, 2004). The purpose of the study is to delineate specific aspects of the interplay between the dimensions of sexual dysfunction in chronically and severely medically ill older men, and the elements of their relationship with their spouses.

Methods. 17 non-demented male patients with Parkinson's disease (mean age 71.5 years, mean age of PD onset 62.1 years) have completed the Derogatis Interview for Sexual Functioning-Self Report (DISF-SR). Both patients and their spouses have independently rated the Spanier Dyadic Adjustment Scale (SDAS).

Results. The strongest statistically significant positive correlation (Spearman 0.59–0.82) has been found for Dyadic Cohesion domain, as reported by the spouse and the DISF-SR scores on dimensions of Sexual Arousal, Sexual Behaviour, and Sexual Drive. Correlation between Affectional Expression on SDAS as reported by the patient, but not the spouse, and the DISF-SR dimensions of Sexual Behaviour, Sexual Orgasm, and Sexual Drive has also been significant (0.49–0.65).

Conclusions. The data will contribute to the development of an educational curriculum for health professionals working with elderly couples.

Poster session: 'Anti-aging' remedies

P-108

GENETICS, GENDER AND LONGEVITY

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Background and aims. In the western world, the average life span is 73.7 years for men and 83.8 years for women. Indeed, gender accounts for important differences in the prevalence of a variety of age related diseases. Considering people of far advanced age, demographic document showed a clear-cut prevalence of females compared to males, suggesting that sex-specific mortality rates follow different trajectories during aging. There is complex interaction of environmental, historical and genetic factors, playing an important role in determining the gender-specific probability of achieving longevity.

Age related immuno-inflammatory factors increase during pro-inflammatory status, and the frequency of pro/anti-inflammatory gene variants also show gender differences. In male individuals, association among pro-inflammatory cytokine-like tumour-necrosis factor a (TNF-a), anti-inflammatory cytokine-like interleukin-10 (IL-10) and testosterone concentration seems to play a role in age related male disease as atherosclerosis.

Furthermore, several studies confirmed that adequate testosterone concentrations are important for sexual function and decreased testosterone concentrations are associated with impaired sexual health. Accordingly, erectile dysfunction seems to be associated with biochemical markers of atherosclerosis.

Methods. Cytokines and testosterone have been measured by Elisa.

Testosterone replacement might be associated with clinical improvement of symptoms of coronary artery disease and testosterone concentrations is inversely associated with intima media thickness.

Conclusions. The importance of these studies lies in understanding the different strategies that men and women seem to follow to achieve longevity may help us to comprehend better the basic phenomenon of aging and allow us to search safer ways to increase male wellness and life span.

Poster session: Diabetes

P-109

INSULIN SENSITIVITY AND TESTICULAR FUNCTION IN ADULT MALES SUSPECTED OF INSULIN RESISTANCE

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Background and aims. Insulin resistance (IRe) and male hypogonadism are clinically correlated, but both the prevalence and magnitude of hypogonadism of insulin resistant males are unknown.

Methods. To further clarify this matter we measured IRe, serum testosterone (T) and waist circumference (WC) in 51 unselected males (aged 18 to 73 years) suspected of being insulin resistant. The Insulin Suppression Test devised by Reaven's group, allowed us to classify these subjects as either insulin resistant (IR) or non-insulin resistant (NIR). Subjects were also classified as hypogonadal (HG, $T \leq 3$ ng/mL) or eugonadal (EUG, $T > 3$ ng/mL).

Results. 72.5% of the subjects were IR and 21.6% were HG (T: 1.6–3.0 ng/mL). Hypogonadism and IRe clustered together since 90.9% of the HG subjects were also IR and T correlated negatively with IRe ($r = -0.46$). As a whole, 27% of the IR subjects were HG. While WC correlated positively with IRe, 40% of the subjects with a WC $<$ 94 cm and 55.5% of those with a WC $<$ 104 cm were IR. The best predictors of IRe were age, WC and hypogonadism. HG subjects were 33.4% more IR that their EUG counterparts.

Conclusions. A significant proportion of IR subjects (27%) were also HG. Hypogonadism was usually mild and seemed to further aggravate IRe. A normal WC did not rule out the presence of IRe. Along with age and waist, the presence of hypogonadism was among the best predictors of IRe. Therefore, not only hypogonadism should be looked for in IR males but also the presence of IRe among HG males.

P-110

THIOCTIC ACID AND ANDROGENS IN MEN WITH TYPE 2 DIABETES AND OBESITY

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Background and aims. Our research was to estimate the thioctic acid influence in monotherapy and in combination with

androgel in middle aged men on their waist circumference (WC), body mass index (BMI), triglycerides, total cholesterol, beta-lipoprotein, basal and postprandial insulin, HOMA index, testosterone (T), sex hormones binding globulin (SHBG).

Methods. Thirty men (mean age 53 ± 14) with type 2 diabetes mellitus (Type 2 DM), obesity and androgen deficit syndrome (patients with hypothyroidism and hyperprolactinemia were excluded from the research) received thioctic acid intravenously once a day during 3 weeks and after that daily received per os during 45 weeks. By 11 weeks androgel has been added. All parameters had been researched before and in 11 and 45 weeks after the treatment start. Twenty men with androgen deficit syndrome, obesity but without Type 2 DM were as a control. Statistica 6.0 was used. P value less than 0.05 was considered correct.

Results. In 11 weeks of thioctic acid treatment there was an accurate decrease of BMI, WC, total cholesterol, triglycerides, beta-lipoprotein, HOMA index, basal and postprandial insulin level. The men also had the decrease of SHBG and an increase of testosterone level ($p < 0.05$; $p < 0.05$; $p < 0.05$; $p < 0.05$; $p < 0.001$; $p < 0.05$; $p < 0.001$; $p < 0.05$; $p < 0.05$ accordingly). In 45 weeks of combined thioctic acid and androgel treatment the efficiency of treatment was better.

Conclusions. Thioctic acid has a positive influence on peripheral insulin resistance, testosterone concentration increases, SHBG level decreases. The combined therapy of thioctic acid and androgens improves the life of middle aged diabetic men.

P-111

RELATIONSHIPS BETWEEN HEALTH BELIEFS, HEALTH BEHAVIOURS, HBA1C, AND QUALITY OF LIFE AMONG MALES WITH DIABETES IN TAIWAN

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Background and aims. The purpose of this study was to investigate the relationships between health beliefs, health behaviours, HbA1C, and quality of life among the males with diabetes in Taiwan.

Methods. A total of 313 males who had been diagnosed with type 2 diabetes were enrolled. The five-point Likert's scale measurements, health beliefs, stage of behaviour change, process of behaviour change, and quality of life were used.

Results. The mean score of health beliefs was 4.1, stage of behaviour change was 4.3, process of behaviour change was 3.7, and quality of life was 4.4. The average of HbA1C was 8.4%. Results demonstrated significantly positive relationships between stage of behaviour change and age, health beliefs, and quality of life ($p = 0.000$). Health beliefs and stage of behaviour change were significantly related to the process of behaviour change ($p = 0.000$). There was a negative relationship between health beliefs and the value of HbA1C ($p = 0.015$). Stage of behaviour change was a significant predictor of quality of life of the males with diabetes.

Conclusions. The study suggests that health beliefs are an important factor related to health behaviours and HbA1C of the diabetes patients.

P-112

PREVALENCE OF HYPOGONADISM IN DIABETIC MEN, INFLUENCE OF AGE AND METABOLIC CONTROL

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Background and aims. Type 2 diabetes is associated with hypogonadism (Hi), commonly hypogonadotropic hypogonadism, the cause is not known, and the relation with age and erectile dysfunction (ED) is not clear.

Methods. We investigated the prevalence of Hi in 45 diabetic men by measuring Testosterone, SHBG, LH, calculated free and bioavailable T, (cFT, cBT), prolactin and TSH. T and SHBG were measured with IRMA. Hypogonadism was defined as low T, cFT or cBT.The ED was evaluated with IIEF-5.

Results. The mean age was 58 ± 10.9 years, BMI was 30.2 ± 3.1 kg/m^2, HbA1c was $8 \pm 2.7\%$. The mean T was 14.5 ± 0.5 nmol/l (417.6 ± 14.4 ng/dl), SHBG was 43 ± 20.4 nmol/l, and cFT was 8.6 ± 3.0 ng/dl. 28.8% of patients were Hi (low T), and 42.4% low cTB. LH levels were concordant with hypogonadotropic hypogonadism. There was a significant prevalence of Hi (low c TB) in greater than 60 years versus minors (47.2% versus 11.5%; $p < 0.05$). In the greater than 60 years, severe ED was more (57.8% versus 38.4%, $p < 0.05$), and its severity correlated inversely with cTL ($r = -0.68$; $p < 0.01$). SHBG correlated with age ($r = 0.32$; $p < 0.05$) but not BMI. The HbA1c correlated inversely with c TB independently of age ($r = -0.32$; $p < 0.01$).

Conclusions. We conclude that hypogonadotropic hypogonadism occurs commonly in men with type 2 diabetes, the age and the metabolic control increase its prevalence in diabetics men.

Poster session: The aging heart

P-113

ANTI-ARRHYTHMIC EFFECT OF CHRONIC ACETAMINOPHEN TREATMENT IN THE AGING FISCHER BROWN NORWAY RAT INVOLVES CONNEXIN 43 AND MICRORNA MIR-1

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Background and aims. There is a growing need for pharmacological agents to manage cardiovascular disease in the rapidly increasing elderly population. Acetaminophen has been shown to have cardioprotective effect against ischemia-reperfusion injury by acting as an antioxidant. Recent studies suggest that age associated increase in the myocardial expression of microRNA miR-1 may contribute to the etiology of fatal arrhythmias, via regulation of the gap junction protein connexin43 (Cx43). We examined the effect of chronic acetaminophen on arrhythmias, Cx43 and miR-1 expression in the aging Fischer344XBrown Norway (FBN) rat hearts.

Methods. Aging male FBN rats (27 months old; $n = 8$) were treated with acetaminophen (30 mg/kg/day p.o.) for six months. Age-matched control rats and young (6 month) rats did not receive treatment. Serial electrocardiography was performed during the study. Expression of Cx43 and miR-1 in hearts was compared by immunoblot analysis and quantitative RT-PCR, respectively.

Results. There was an increase in incidence of premature atrial and ventricular arrhythmias with age, which were attenuated by acetaminophen treatment. The membrane expression of Cx43 in 33-month control hearts was 23.6% lower than 6-month controls, while in acetaminophen treated hearts it was 19.2% higher than 33-month controls. The expression of miR-1 in 33-month controls was 7.26-fold that of 6-month control hearts and in treated hearts it was 0.93 times that of 6-month controls ($p < 0.05$).

Conclusions. These results indicate that acetaminophen may prevent the age associated increase in the incidence of arrhythmias, possibly via preserving myocardial membrane Cx43 expression. Furthermore, partial attenuation of age associated increase in miR-1 expression may underlie this effect of acetaminophen.

Poster session: Alzheimer's disease

P-114

GENDER DIFFERENCES IN VITAMIN B12 STATUS AND FUNCTIONAL FITNESS PARAMETERS IN SPANISH INSTITUTIONALIZED ELDERLY

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Background and aims. Both Alzheimer's and vascular dementia are associated with vitamin B deficiency. But there is little information on cognitive and functional fitness parameters in these patients and in healthy counterparts.

To analyse the influence of vitamin B12 status on cognitive and functional fitness parameters and their evolution after giving a cyanocobalamin (500 μg) oral supplement for twenty-eight days to institutionalized elderly.

Methods. Twenty-five men and 44 women (mean age $80 + 8$ and $83 + 6$, respectively) participated in a pre–post intervention study design. None were taking vitamin B supplements. MMSE, functional fitness tests and blood analysis of vitamin B and deficiency markers were performed on both occasions. Descriptive statistics and t-test were used.

Results. MMSE scores for men and women were: ≥ 24, 12 (48%) and 7 (15.9%); 21–23, 4 (16%) and 15 (34.1%); 11–20, 9 (36%) and 18 (40.9%); ≤ 10, 4 (9.1%) women. Values of arm strength, hand grip (left hand) and standing balance (open and closed eyes) were significantly different between genders ($p < 0.05$). MMSE scores did not show any significant changes between genders. The increase of holo-transcobalamin values after supplementation was significantly higher in women than in men (dif: 47.5 ± 29.32; dif: 32.24 ± 22.21 pmol/L, $p < 0.05$). The same trend was observed for serum vitamin B12 concentrations.

Conclusions. The oral intake of 500 μg cyanocobalamin for 28 days showed a greater effect on vitamin B status in women than in men. Financial support: Whitehall-Much GmbH (Germany), Axis-Shield Diagnostics Ltd (Norway), Abbott Científica S.A. (Spain).

P-115

A ROLE FOR CYCLOSPORIN-A AT SMALLER DOSES IN THE TREATMENT OF ALZHEIMER'S DISEASE?

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Background and aims. Cyclosporin-A stimulates steroid 5alpha-reductase (5AR), the rate-limiting enzyme in the synthesis of steroids such as 3alpha,5alpha-tetrahydroprogesterone (THP/allopregnanolone) and 3alpha,5alpha-androstanediol (3Adiol), from progesterone and testosterone, respectively. THP is probably the most potent naturally occurring GABA-ergic agent. Both THP and 3Adiol have neurogenic properties, and both reverse experimental diabetic neuropathy. Further, THP reverses the neuropathologic changes in transgenic mouse model of Alzheimer's disease. And THP levels are reduced somewhat proportionately to the neuropathologic changes in the brain of Alzheimer's patients.

Methods. Literature survey.

Results. Cyclosoprin-A is an immunosuppressant and is given to organ transplant patients to prevent organ rejection. A common dose-dependent side effect of cyclosporin-A is hypertrichosis owing to the enhanced production of dihydrotestosterone (DHT) from testosterone and other androgens. It is also given with some success in rheumatoid arthritis patients at smaller doses. DHT and 3Adiol have cognitive enhancing effects. Indomethacin inhibits the cognitive enhancing effects of DHT by inhibiting the conversion of DHT by 3alpha-hydroxysteroid dehydrogenase to 3Adiol. The latter enzyme also converts dihydroprogesterone to THP. However, paradoxically, indomethacin is also used as an antiinflammatory drug in Alzheimer's disease.

Conclusions. It is worth trying cyclosporin-A in confirmed cases of Alzheimer's disease patients, at smaller doses. It could first be tried in transgenic mouse model of Alzheimer's disease. Perhaps, the use of indomethacin should be discouraged in Alzheimer's patients.

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THE ROLE OF COGNITIVE IMPAIRMENT IN ELDERLY SUICIDE ATTEMPTERS – A HUNGARIAN CASE-CONTROL STUDY OF OLD PSYCHIATRIC INPATIENTS

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Background and aims. Suicide in old age is a major public health problem. In the background many risk factors are identified, but the exact role of some factors is still controversial. There have been a few case-control studies and there is only a little information on the association between cognitive impairment and suicidal behaviour.
The authors' aim was to assess the prevalence and importance of dementia and cognitive impairment in relation to suicidal behaviour in elderly psychiatric inpatients.

Methods. The level of cognitive functioning (according to the Mini Mental State Examination – MMSE) of the elderly suicidal inpatients ($n = 62$) was compared to the general elderly psychiatric inpatients ($n = 152$).

Results. There were significant differences in cognitive functioning between the two groups. In the non-suicidal group the level of cognitive function was significantly lower. However, mild cognitive deficit and mild dementia were registered in 60% of suicide attempters.

Conclusions. The results indicate that not only mood disorders, but other risk factors (especially mild cognitive impairment) have a key role in developing suicidal behaviour in the elderly. Thus, in the treatment and prevention of suicidal behaviour in old age, it is important to apply the complex biopsychosocial model, in which – besides adequate antidepressive pharmacotherapy – psychotherapeutic approaches, and proceedings enhancing cognitive functioning are of outstanding significance.

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FALSE POSITIVE ALZHEIMER'S CASES: AN ICEBERG TIP?

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Background and aims. Behaviours that appear in aging usually are considered by relatives and physicians as indicators of the beginning of Alzheimer's dementia.

Methods. Diagnosis upon senses recognition functionality, typical dementia behaviours and discounting recovery difficulties on trivial facts, concentration on painful losses, disinterestedness in futile events, hallucinate/delusionate in front of an important chirurgical intervention, rebel behaviours that contrast with a submissive life, exhaustion on familiar and social negotiation capacity, the use of irony, sarcasm, annoyance or aggression, to despise, to play-act a bit over the top, to express fantasies and lying whim to prevail is desire and others, are all normal aging behaviours arising frequently in the elderly (the seventy-plus), but aren't typical behaviours of Alzheimer dementia. A medical diagnosis of dementia place family and elderly in the pathology field, which is reinforced with the secondary effects of anti-psychotic, sedative, antidepressant, anti-epileptic, anti-Parkinsonian and others in

combination with acetilcholinesterasic blockers and other scientifically more exotic drugs.

Results. Our last four years consults give an average of different population samples of 38% of false positive with an Alzheimer diagnosis, with a range of 22 to 54% in different regions of South America. Relatives often reject the normality diagnosis, and in others the missed diagnosis of dementia has operated as a trigger of the process of fixation of attention in the desire of death, the key step in the Alzheimer's process.

Conclusions. False Alzheimer's cases seem like a social and sanitary dramatic problem and an important component of the Alzheimerization of aging.

Poster session: Obesity

P-118

ASSOCIATION OF TESTOSTERONE DEFICIENCY SYNDROME AND METABOLIC SYNDROME IN PATIENTS WITH BMI > 30. PILOT STUDY

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Background and aims. The aim was to study the prevalence of TDS in patients with BMI > 30. Metabolic syndrome is defined by the presence of at least three of the following: abdominal obesity – waist circumference > 94 cm, arterial hypertension, hypercholesterolemia, diabetes mellitus.

Methods. 19 patients over 50 years of age and body mass index (BMI) more than 30 (30–40.6, average 35.57) were included into the study. Hormonal evaluation as well as a complete urological evaluation (including PSA) and medical evaluation were carried out in every patient. To assess subjective symptoms related to TDS and 5 domains of sexual health, the Androgen Deficiency Questionnaire and Sexual Health Questionnaire were utilized.

Results. Total serum testosterone values were decreased (less than 12 nmol/l) in 13 out of 19 patients (68%). 10 of them had moderate subjective symptoms of TDS and 1 patient had severe symptoms of androgen deficiency. The score of androgen deficiency in these 11 patients was 28–53 points (median 39).

All 13 patients reported erectile dysfunction. No correlation was found between decreased serum testosterone values and loss of libido. 16 out of 19 patients (84%) suffered from fully developed metabolic syndrome.

Conclusions. Symptomatic complex caused by the lack of androgens mainly in men over 50 years, is gradually becoming the topic of interest for both urologists and general practitioners. In respect to longer life expectancy and prolonged survival, the diagnosis and treatment of TDS may significantly improve the quality of life of the affected men.

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BREAKING POINTS OF LIFE FOR MAJOR HEALTH PROBLEMS

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Background and aims. Aging alone may be one of major disorders.

Methods. Male check-up patients above age 20 years were taken, consecutively.

Results. The study included 1,068 cases in total. There were only 19 (1.7%) cases with underweight and 307 (28.7%) with normal weight, so 69.4% (742) of cases had excess weight. Prevalences of hyperbetalipoproteinemia, hypertriglyceridemia, dyslipidemia, and excess weight showed their most significant progressions in fourth decade of life ($p < 0.001$ for all). One decade later, diabetes mellitus (DM) showed its most significant increase ($p < 0.001$), and two decades later, hypertension (HT) and coronary heart disease (CHD) showed their greatest increases in sixth decade ($p < 0.001$). Although all disorders continuously increased in prevalence by decades, prevalence of excess weight decreased in the eighth decade parallel to the decreasing prevalences of hyperbetalipoproteinemia, hypertriglyceridemia, and dyslipidemia significantly ($p < 0.05$ for all).

Conclusions. Aging may be one of the major disorders of human beings particularly in the presence of excess weight, and probably there are some breaking points of life for dyslipidemia, excess weight, DM, HT, and CHD with this order, and dyslipidemia may be a pioneer sign of excess weight.

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PREVALANCE OF OBESITY AND ITS ASSOCIATION WITH SMOKING IN MALE EMERGENCY DEPARTMENT PATIENTS WITH MINOR TRAUMA

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Background and aims. Obesity is associated with increased use of emergency department (ED)-services. Little is known about the prevalence of obesity in male ED patients with minor trauma. The aim of this investigation was to evaluate self-reported prevalence of obesity in association with hypertension and diabetes, age and smoking in male ED patients with minor trauma.

Methods. Cross-sectional study (12/2001 – 02/2003) in an urban university-based ED after ethical committee approval and written informed consent. Overall, 1,870 male trauma patients (Injury Severity Score = 1 point in 83.6%) were asked for size, weight, co-morbidities (diabetes and hypertension), and smoking (defined as minimum 1 cigarette smoked per day). A Body Mass Index of ≥ 30 kg/m^2 was defined as obesity.

Results. Nearly $\frac{3}{4}$ of study participants were younger than 40 years. In $n = 383$ (20.5% of study participants) 40- to 60-year-old males prevalence of obesity was 12.5% (37.5% smokers, 31.3% with hypertension and/or diabetes). In $n = 88$ (4.7% of study participants) older than 60 years prevalence of obesity was 23.9% (33.3% smokers, 66.7% with hypertension and/or diabetes).

Conclusions. In male patients with minor trauma every eighth 40–60 year old and about every fourth 60 years and older was obese. Prevalence of co-morbidities and smoking varied across age groups. Age-dependent strategies guidelines with respect to co-morbidities and smoking status in the treatment of obesity in an emergency department setting are warranted.

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RAPID DIET-INDUCED WEIGHT LOSS IS EFFECTIVE AT IMPROVING SEXUAL FUNCTION AND LOWER URINARY TRACT SYMPTOMS IN OBESE MEN

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Background and aims. Obesity is associated with reproductive dysfunction in men. This study determined the effects of diet-induced weight loss on plasma testosterone, erectile function (EF), sexual desire (SD), and lower urinary tract symptoms (LUTS) in obese males.

Methods. Forty-one obese, otherwise healthy, normotensive, non-smoking men on no medication, age 43.6 $\pm$ 1.5, (mean $\pm$ SEM); BMI 36.9 $\pm$ 0.67 kg/m^2 and waist circumference 123.9 $\pm$ 1.8 cm were evaluated. Weight loss was induced by restricted calorie diet (800 Kcal/day) over 8 weeks. EF (International Index of Erectile Function (IIEF)), SD (Sexual Desire Inventory-2 (SDI-2)), and LUTS (International Prostate Symptom Scale (IPSS)) were evaluated before and

after weight loss. Testosterone (T), SHBG, glucose, insulin and lipids were measured in fasting plasma. Free testosterone (cFT) was obtained using the Law of Mass Action.

Results. All men completed the study, lost weight (13.3 $\pm$ 0.74 kg) and decreased waist circumference (12.4 $\pm$ 0.89 cm). EF improved in 35 men. IPSS and SDI scores improved in all men. The mean IIEF (18.3 $\pm$ 0.2), SDI-2 (71.2 $\pm$ 0.4) and IPSS (18.9 $\pm$ 0.22) scores prior to weight loss improved post weight loss: IIEF 20.5 $\pm$ 0.3 ($p < 0.0001$); SDI-2 80.7 $\pm$ 0.3 ($p < 0.0001$); and IPSS 12.2 $\pm$ 0.2 ($p < 0.0001$). T and SHBG both increased but there was no significant increase in cFT. There was no significant change in plasma glucose but there was a significant decrease in plasma insulin and improvements in the fasting lipid profile. There was a significant relationship between change in waist circumference and improvements in EF ($p = 0.027$), but no other parameter.

Conclusions. In this group of men, obesity was associated with erectile dysfunction, which together with LUTS and sexual desire improved following weight loss.

Poster session: Other

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DEPRESSION IN ELDERLY MALES IN A NIGERIAN RURAL COMMUNITY: PREVALENCE AND CORRELATES

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Background and aims. This study aimed to estimate the prevalence of depression in elderly males in a rural community and examine the associating factors.

Methods. A total of 1,356 elderly males (over 60 years old) completed questionnaires asking about sociodemographic and health related details. They were then interviewed for the DSM-IV diagnosis of depressive disorder using the Mini International Neuropsychiatric Interview (MINI).

Results. A total of 352 (25.9%) men met the current (2-weeks) DSM-IV diagnosis of depressive disorder. The factors independently associated with depression include being divorced/separated (OR 3.1, 95% CI 1.55–5.22), polygamy (OR 3.92, 95% CI 2.14–6.32) and perceived lack of social support (OR 6.08, 95% CI 4.67–9.64).

Conclusions. Depression in old age is common amongst Nigerian rural males and relates mainly social and family factors. Such factors should be considered when planning health care services or formulating a predictive model for this group of people.

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HIP FLEXOR STRETCHING AS A TREATMENT FOR ORCHIALGIA DUE TO GENITOFEMORAL NERVE IMPINGEMENT BY THE PSOAS MAJOR MUSCLE

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Background and aims. Travelling from L1-2 spinal origins to innervate the testes, the genitofemoral nerve pierces the psoas major muscle. Psoas major tightness is hypothesized to impinge this peripheral nerve, generating perceived orchialgia (testicular pain). This work evaluated a programme of hip flexor stretching for attenuating persistent phantom orchialgia in patients where prior orchiectomy failed to eliminate the pain.

Methods. Using within-subjects design, two male patients (ages 79 and 67 years) with persistent orchialgia, unrelieved by orchiectomy, and marked psoas major tightness participated in twelve weeks of hip flexor stretching using therapeutic ultrasound with passive stretch to the distal psoas major tendon (twice weekly) and home stretches (twice daily). A visual analogue pain scale assessed changes in orchialgia intensity. Goniometric assessment of hip flexion in the Thomas Test position quantified hip flexor length. Measures were made BIW and correlated across treatment sessions to determine the influence of hip flexor stretching on testicular pain intensity.

Results. Patient A reported pain intensity reduction from 7.2/10 pre-treatment to 2.0/10 post-treatment. Patient B reported total elimination of pain post-treatment from pre-treatment average of 4.6/10. Pearson product moment coefficients for the correlation between hip flexor length and reported pain were $r = -0.63$ and -0.71 for the two patients respectively. Pain reductions were still evident at three-month follow-up.

Conclusions. In two patients, easing genitofemoral nerve compression via hip flexor stretching produced notable orchialgia relief. Case findings indicate conservative psoas stretching as a treatment consideration prior to surgical intervention in older adult males with orchialgia who have developed decreased hip flexor muscle length.

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MALES WHO HAVE SEX WITH MALE/MALE SEX WORKERS, THEIR SEXUAL BEHAVIOUR AND IMPACT ON WOMEN

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Background and aims. Higher rates of HIV infections are transmitted through homosexual contact. Most homosexual men are youths and are an incredibly diverse group, in terms of both their economic circumstances and sexual attitudes and behaviour. Younger youths are more economically disadvantaged than older youths. Young students are often more subject to peer pressure. Due to many reasons, homosexual men are seduced by male sex workers (MSWs). Most of them are either married or will become married, thus having an impact upon women's reproductive health.

Methods. Government's different strategies for a national health programme in terms of sexual health and HIV/AIDS has shaded a negative impact among such vulnerable population, due to socio-cultural-religious reasons, those behaviours are to a large extent invisible, often difficult to access in terms of standard sexual health promotion framework of the nation.

Results. The result is that those most needing information, education and counselling are driven underground. Men and women are not only at greater risk of being infected, but also HIV/AIDS affects women also as caregivers in the family.

Conclusions. An urgent need to promote behaviours which enable a lifestyle without risk of HIV and to provide counselling services is essential. When youths belong to an organization that helps them and provides opportunities, they better avoid risky behaviours, including those that might lead to HIV/AIDS. Every social sector should not discriminate/stigmatize them so that they can create an environment to change their behaviour. Regardless, there should be ensured legal framework protecting human rights of those sexual minorities.

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VULNERABLE POPULATION NEEDS GOVERNMENT'S STANDARD SEXUAL HEALTH PROMOTION

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Background and aims. Physical, psychological, and social attributes of adolescence make young people particularly vulnerable to HIV and other sexually transmitted infections (STIs). A large number of young vulnerable groups have socio-cultural-religious contexts, ethnicity, income status, families and discrimination/stigmatization, social exclusion, and most of them are either married or will become married and have their male/female partners, thus having an impact upon women's reproductive and sexual health.

Methods. Political commitment and appropriate legislative, budgetary, judicial, promotional and other measures for safeguarding individual's human rights on the context of HIV/AIDS and sexuality is not present. A standard sexual

health promotion framework, change of socio-cultural-religious contexts of male/female sexual behaviours is inappropriate.

Results. Government's different strategies for national health programme in terms of sexual health and HIV/AIDS has shaded a negative impact among such a vulnerable population. The result is that those most needing information, education and counselling are driven underground.

Conclusions. Direct research, high levels testing service, development of information sharing mechanisms, models of good practices, broad counselling service, leadership training, community mobilization through NGOs/INGOs, school health education is essential. Youth livelihoods approach is most urgent need.

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THE REFLECTION IN THE MIRROR: TRANSFORMING SELF-CONCEPT IN THE AGING MALE

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Background and aims. To ascertain the effects of self-concept on aging: as men age, their self-concept/self-image changes as well. This changing self-concept leads to behavioural, psychological, and physiological changes that perpetuate the aging process, often in a stereotypical manner, as determined in large part by societal expectations. Through a novel psychotherapeutic method – Integral Self Therapy – I will demonstrate how this self-concept can be changed to embrace health rather than dysfunction, thereby mitigating the deleterious effects of the aging process.

Methods. Integral Self Therapy is a transpersonal therapy that incorporates the work of self-psychologists such as Kohut and Horney, as well as humanistic psychologists such as Carl Rogers and Maslow, along with eastern Zen meditation, and the concept of non-duality. Through this approach, a person is guided to an understanding of their true self, that transcends socially accepted paradigms of aging.

Results. This approach has demonstrated improved self-concept in the aging male, which translates into increased function, vitality, and drive.

Conclusions. A changing self-concept is an important part of the aging process, and through a transpersonal psychotherapy approach such as Integral Self Therapy, the aging male can retain a healthy self-concept that contributes to a healthy mind and body in the aging male.

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POSSIBLE WAYS FORWARD IN ANDROGEN TREATMENT

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Background and aims. There is general agreement among doctors interested in the health of the aging male that androgen deficiency is being treated in only a small proportion of those who could benefit from it. It is important therefore to look at the reasons why this is so, and consider what steps could be taken to remedy this serious situation.

Methods. The reasons why the condition is underdiagnosed and undertreated have been reviewed, and solutions suggested.

Results.

1) The diagnosis of androgen deficiency is missed because of the misuse of invalid laboratory data at the expense of clinical data, especially symptomatology.
2) Lack of knowledge of the complex mechanisms of androgen deficiency, especially androgen resistance.
3) Unfounded concerns about the side-effects of treatment, especially in relation to prostate cancer.
4) Lack of awareness of recent advances in safe forms of androgen treatment, and the continuing availability of toxic products such as methyl testosterone.
5) Lack of awareness of the many serious general medical conditions in which androgen deficiency plays a major role.
6) Lack of training in safe and effective TRT according to guidelines such as those provided by ISA, ISSAM and AEU.
7) Concerns about the cost of treatment and failure to appreciate the true long-term costs of not treating this condition.

Conclusions. It is suggested that international action is needed in making these problems known to the medical profession in each country and overcoming them by educating and motivating the profession and those regulating the healthcare systems.

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THE MALE–FEMALE HEALTH-SURVIVAL PARADOX: A SURVEY AND REGISTER STUDY OF THE IMPACT OF SEX-SPECIFIC SELECTION AND INFORMATION BIAS

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Background and aims. There is a remarkable discrepancy between the health and survival of men versus women: men are physically stronger and have fewer disabilities, but still males have excess mortality at all ages. A number of proposed explanations are rooted in biological, social, and psychological interpretations. Another hypothesis is that the difference could partially be due to bias in surveys if males are more reluctant than females to participate and/or accurately report in surveys if they have diseases or disabilities.

Methods. The study is based on the linkage of three nationwide population-based surveys of 15,401 Danes aged 45 to 102 years with health registers covering the total Danish population.

Results. Men had higher participation rates than women at all ages, but men hospitalized within the last two years tended to be at higher risk of non-response compared to hospitalized women. The risk of non-response was substantially lower among women with medication use compared to men taking any medications. Sex differences were larger in younger cohorts and diminished with advanced age. Men used fewer medications than women and they did not underreport medication use to a higher degree than did females.

Conclusions. The present study supports the hypothesis that men with health problems tend to avoid participating in surveys compared to women with similar problems suggesting that selection bias in the surveys contributes to the explanation of health-survival paradox. However, there was no indication of men underreporting medication use more than women once they were in the study.

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HUSBANDS AND WIVES AS CAREGIVERS TO SPOUSES WITH AMYOTROPHIC LATERAL SCLEROSIS: DOES GENDER MATTER?

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Background and aims. Informal caregiving in the home is expected to increase. Husbands contribute importantly to the care of ill spouses, yet little is known about males as caregivers. Aims: To examine gender-related differences in the experience of providing dependent care to a spouse with ALS; and to explore caregiver meaning and burden.

Methods. Cross-sectional data from the ALS Patient Care Database: patients' age, gender, income, functional ability.

Caregivers' living arrangements, employment, health, social activities, assistance received, and perceived importance and rewards of caregiving. Variables were examined by linear regression analysis.

Results. Of 3,760 ALS patients with caregivers, 2,752 (73%) named their spouse as primary caregiver. Male patients (65%) were younger and had higher functional ability than female patients. Caregiving wives were more likely to live with the patient ($p = 0.02$), experience burden ($p = 0.0016$), and be unemployed ($p = < 0.001$). Caregiving wives reported better health ($p = 0.0105$) but health problems interfered with social activities ($p = 0.0001$. Caregiving husbands had lower household income ($p = 0.0042$), received more informal assistance ($p = 0.0001$), and provided care to sicker patients ($p = 0.0001$). Husbands said caregiving was 'important' and 'rewarding' more often than caregiving wives. Wives who reported caregiving was 'rewarding' experienced a buffering effect on caregiver burden not experienced by husband caregivers.

Conclusions. Spouses are the most prevalent caregivers for ALS patients. Wives and husbands experience the caregiving role differently. Gender differences should be considered when designing interventions to support caregivers of ALS patients. The ALS Patient Care Database is supported by the ALS Association. The World Federation of Neurology Motor Neuron Disease Committee endorses the database.

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EFFECTS OF GROUP BASED YOGA AND HEALTH EDUCATION ON URBAN INDIAN AGED MALE

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Background. Physical activity is one of the important psychological and physical health promotion strategies in old age. Yoga offers a relatively safe, non-competitive and inexpensive alternative to routine exercises.

Aims. To test the hypothesis that a group based yoga and health awareness programme for elderly will confer psychological and general health benefits over three months and over a two and a half year follow up period.

Methods. This is a 3-month follow-up of a centre based prospective trial of trainer guided yoga and health education and its 28-month community-based follow-up in urban Indian aged males. Primary outcomes were Beck's Depression Inventory (BDI), Geriatric Depression Rating Scale (GDS), General Health Questionnaire (GHQ), Mini mental status examination (MMSE), verbal fluency (VF), numerical and visuo-spatial abilities and participant answered impact appraisal form.

Results. The paired t-test analysis for the males showed improvement in BDI, GDS and VF scores post intervention. For the whole group and females, the same test did not show significant change. Correlation studies at baseline and at completion showed trends suggestive of multiple individual benefits. The community follow-up was scheduled for October 2007.

Conclusions. A group based yoga and health education programme seems to have potential to improve psychological and general physical health of elderly males over a 3- month period. 28-month follow-up results await.

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HEALTH AMONG OLDER MALE CONSTRUCTION WORKERS

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Background and aims. Construction workers are typically younger than the national labour force in the United States. But, construction workers are aging also. The median age was 34 years for construction workers in 1985, while it was 39 years in 2005. Construction jobs are traditionally 'male-job'. Among construction workers who are 50 years or older, more than 94% are male.

Methods. To improve our understanding of this important group of construction workers, we assessed and characterized health status among older male construction workers using a large national representative sample survey, the National Health Interview Survey (NHIS). More than 4,600 construction workers were identified from the three year pool data of the 2003–2005 NHIS. Among them, about one thousand were male workers who were 50 years or older, representing more than 2.1 million male construction workers in the United States. Univariate and multivariate analyses were conducted using SAS-callable SUDAAN.

Results. Our initial findings show that age is directly associated with health status. Older male construction workers' perceived health leaned more toward the negative end of the distribution compared with their younger counterparts. The prevalence of risk factors and chronic diseases (such as overweight and obese, hypertension, heart disease, arthritis or joint symptoms, and diabetes) dramatically increased among older male workers in construction.

Conclusions. This study suggests that health policy and employment policy should address health issues of older workers. Safety and health interventions should meet special needs of older workers, especially for construction male workers who face a high risk and high physical demand at worksites.

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DIFFERENCES BETWEEN FASTING AND NON-FASTING SAMPLES FOR THE MEASUREMENT OF SEX HORMONES: IMPLICATIONS FOR EPIDEMIOLOGICAL STUDIES?

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Background and aims. Fasting is thought to influence various serum lipid measurements and certain serum hormones, but to date these associations have not been examined comprehensively. We obtained serum measures and fasting status for 1,255 men (ages 30–79 years) in the Boston Area Community Health Survey.

Methods. As is also usual in everyday clinical practice, fasting was based on self-report. Subjects who had consumed food or beverages within 8 h of sampling were designated non-fasting ($n = 732$); remaining subjects were considered fasting ($n = 154$). Analyses compared hormone (testosterone, cortisol, sex hormone-binding globulin, dehydroepiandrosterone (DHEA), DHEA sulphate, luteinizing hormone, follicle-stimulating hormone, prolactin, dehydrotestosterone, estradiol, and estrone) levels in fasting versus non-fasting subjects. Initial models adjusted for age and ethnicity; models including body mass index and hours since waking were also considered.

Results. Even after covariate adjustment, some hormones differed by fasting status, particularly cortisol (-16%, $p < 0.001$) and DHEA (-18%, $p = 0.002$). Hours since waking strongly predicted fasting status and influenced the strength of associations; initial models indicated 11% lower testosterone in non-fasting versus fasting subjects, but controlling for time of waking reduced this to 4.5%.

Conclusions. These results have implications for the costs, design, execution, and interpretation of field studies, particularly where serum hormones are considered. If fasting blood cannot be obtained, fasting status and time of waking should be collected for consideration in analyses.

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50 YEARS OLD AND MORE PATIENTS' ATTITUDES TOWARDS AND EXPERIENCES OF GENERIC SUBSTITUTION OF PRESCRIPTION MEDICINES

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Background and aims. To assess 50 years old and more patients' attitudes towards and experiences of generic

substitution of prescription medicines. A special focus on information on patient attitude to generic drugs provided by their general practitioners.

Methods. Prospective study of patients in 15 general practices and in two retirement homes was surveyed using a self-questionnaire.

Results. 440 patients were included; 91% of the patients stated that they knew of the difference between brand-name drugs and generics but only 57% knew it exactly in fact. 67% had received generics by their GPs; 45% reported to have received information from their physician. The study found that patients who report to have received information from their physician about generic substitution were more likely to have a switch. Patients in retirement homes more frequently refused substitution. Elderly patients (75 and more) were wrong with generics definition compared with other patients, and observed more adverse effects after switching (20% versus 9% – $p = 0.027$); patients made more mistake using generics than brand-name drugs (15.5% versus 7% – $p < 0.005$); two thirds of the patients (72%) were satisfied with switching, and 57% reported to want more information and 85% of them that it comes from their GPs.

Conclusions. Most of the patients are satisfied with generics. GPs are in an ideal position to inform their patients adequately about the equivalence of brand-name and generic drugs. Patient education is the best way to use generics in the future. More efforts must be devoted to providing adequate information to patients and GPs.

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AGE CONCEPTION OF MALES AND THE OCCURRENCE OF MUTATIONS IN AUTOSOMIC AND Y-STR POLYMORPHISMS. FORENSIC IMPLICATIONS

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Background and aims. We report mutations in paternity cases and in the analysis of the haplotypes of seven Y-STR loci determined in a sample of 222 pairs of fathers and respective sons. The aim is to verify if the male age in the time of conception is related to the events of mutation, which has forensic implications.

Methods. 1) Analyses of 15 autosomal STR and 7 Y-STR; 2) Analyses of 19 autosomal STR loci plus 6 loci from the HLADQA1/polimarker and one VNTR locus. The paternity index and the probability of paternity were calculated using population data on STR allele frequencies for Brazilian populations. 3) The haplotypes of DYS19, DYS389I, DYS389II, DYS390, DYS391, DYS392, and DYS393 were determined in a sample of 222 pairs of fathers and respective sons; all 222 father-son pairs included in the study had their biological relationship confirmed using the autosomal STRs (LR > 10,000).

Results. 1) Analyses of 22 loci; presented one mutation; 2) Analyses of 26 loci, presented two mismatch; 3) In the 222 father/son pairs and among 1.554 allele transfers, six mutations were observed, taking place with an average overall rate of 3.86×10–3 per locus. In our sample of father/son pairs a haplotype with double peaks at the DYS389I locus and another with double peaks at DYS389I, DYS389II, and DYS439 were detected in both fathers and sons.

Conclusions. We report these cases and discuss the age conception of males being the more plausible factor for the occurrence of mutations in the transfer of haploid cells. (CNPq – LIM-HC-FMUSP-Brazil).

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PATIENT BASED CAROTID STENTING IN MORE THAN 70-YEAR-OLD PATIENTS. SINGLE CENTER RESULTS WITH 68 CONSECUTIVE PROCEDURES

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Background and aims. To report our single centre experiences with carotid stent procedures in the elderly. We present a consecutive series of patients during a 5.5 year period.

Methods. Between February 2002 and September 2007, 68 carotid stent procedures were performed in patients more than 70 years old (45 males, 23 females). 51 patients (75%) were symptomatic, 17 asymptomatic for the ipsilateral carotid stenosis. The average percentage of stenosis was 87.5%. 12 patients had contralateral carotid occlusion; another 22 patients had more than 50% carotid stenosis. Risk factors were: hipertension 94%, coronary disease 68%, diabetes mellitus 35%, hypercholesterolemia 35%, myocardial infarction 31%. Embolic protection was introduced in 45.6% only according to the decision of the interventionist. Ultrasonographic and clinical follow-up was performed 6 weeks after the procedure, then every 3 months.

Results. All procedures were technically successful. One patient died in 48 hours in myocardial infarction. No major stroke occurred. Two patients presented temporary dizziness after the angioplasty and another two patients had TIAs in 30 days. No restenosis or reocclusion occurred in the follow-up.

Conclusions. Carotid stenting is safe and efficacious even in elderly patients. Our results suggest that high surgical risk patients have to be treated with carotid stenting.

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LOW RISK OF DEPRESSION AND ANXIETY IN ELDERLY HIV + PATIENTS TREATED WITH EFAVIRENZ

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Background and aims. Although depression and anxiety are commonly seen in HIV-positive patients, to date most studies have not focused on aging subjects. We examined frequency and determinants of self-reported complaints of depression and anxiety in HIV-positive patients aged > 49 years.

Methods. 159 HIV-infected patients aged > 49 years were administered the IPAT Anxiety Scale Questionnaire (ASQ) and the IPAT Depression Scale Questionnaire (CDQ).

Results. Demographic and HIV illness characteristics were as follows: mean age 56,8 (range 50–85) years, male 131 and female 28, mean CD4 count 539.6/cmm, patients with plasma HIV RNA < 50 cp/mL 70%. All the patients receiving HAART; among them 53 (33.3%) patients (M = 46 F = 7) were treated with EFV, 99 (62.3%) (M = 79 F = 20) with PI and 7 (4.4%) (M = 6 F = 1) with NVP-containing regimens. ASQ and CDQ scores consistent with anxiety and depression were detected in 109 (68.5%) and in 88 (55.3%) of patients, respectively. Age, sex, risk factors, CDC stage, current plasma viral load, HAART exposure were not related to anxiety and/or depression scores. Lower CDQ scores and lower ASQ scores were reported in 22 (25%) ($p = 0.013$) and in 28 (25.7%) ($p = 0.003$) patients receiving EFV, respectively. Higher CDQ and ASQ scores were reported in 60 of 159 (68.2%) ($p = 0.020$) and in 74 of 159 (67.9%) ($p = 0.004$) patients receiving PI, respectively. Higher ASQ scores were reported in patients with lower CD4 count ($p = 0.0023$).

Conclusions. Anxiety and depression are reported in nearly two thirds of HIV-infected patients aged > 49 years and seems probably associated with PI-containing regimens. Self-reported anxiety seems associated with low current CD4 count.

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RENAL TRANSPLANTATION IN THE ELDERLY: THE IMPACT OF RECIPIENT AGE

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Background and aims. As survival worldwide population has improved over the last few decades, the number of patients requiring kidney transplantation aging has also increased. Thus, the main objective of this study is to investigate the impact of donor and recipient age in kidney allograft survival. As a second aim, we would like to determine if medical and surgical complications were or not similar between both age recipients groups (recipients >60 and <60 years old).

Methods. We compiled data from 242 consecutive kidney transplantations, performed in a single institution between January 2001 and December 2005. We performed a descriptive analysis of the main variables considered, such as donor and receptor age and sex, cause of donor death, cardiovascular risk recipient factors, etc. Then, we undertook an inferential univariant analysis just comparing groups. Finally, a predictive model including the main variables in our study has been tried.

Results. No statistically significant differences were found between either group on surgical complications, primary non-function, delayed graft function or renal function at 3, 6, 12 or 24 months. Using binomial logistic regression analysis, we did not find any relevant predictive model to argue the appearance of different complications in the older recipients.

Conclusions. No statistically significant differences have been found on clinical and surgical complications between recipients older and younger than 60 years old. This retrospective evaluation confirmed our idea that the old patient should not be excluded *a priori* from the transplantation option.

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METABOLIC SYNDROME AND THE FUNCTION OF THE HYPOTHALAMOPITUITARY GONADAL AXIS IN A COHORT OF AUSTRALIAN MEN

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Background and aims. Metabolic syndrome (MetS) is associated with increased risk of cardiovascular disease and diabetes mellitus and decreased plasma total (TT), free (FT) and bioavailable testosterone (BT). Although the associations between T and MetS may be bi-directional we have shown that levels of T predict incident diabetes mellitus and suggest an abnormal hypothalamopituitary gonadal (HPG) axis may be a marker of MetS. The following determined the association between MetS criteria (waist circumference, plasma lipids, glucose, blood pressure (BP)) and the HPG axis.

Methods. 1,195 randomly selected men, aged 35–80 years attended clinics from 2002 to 2004 as part of a male cohort study. Stepwise multivariate linear regression was used to determine components of MetS predicted by levels of serum luteinizing hormone (LH), total (TT), bioavailable (BT) and free (FT) testosterone levels, SHBG and insulin-like peptide-3 (INSL3), a marker of pituitary-independent Leydig cell function.

Results. Fasting glucose was negatively associated with serum LH levels. All other components of MetS were negative independent predictors of TT. Similarly, all MetS criteria (except systolic BP) were negative independent predictors of FT. Abdominal adiposity and fasting triglycerides were negative and HDL and systolic BP were positive independent predictors of SHBG. Only abdominal obesity was a negative independent predictor of BT level. Abdominal adiposity, plasma HDL and glucose were negative independent predictors of INSL3.

Conclusions. MetS (as defined by the IDF) is associated with abnormalities of the HPG axis at multiple levels. The presence of abdominal obesity and associated disturbances to glucose metabolism appears to demonstrate the most consistent effect.

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DOES TIME OF DAY FOR SAMPLE COLLECTION IMPACT THE WITHIN-PERSON (INTRA-SUBJECT) VARIABILITY OF HORMONE VALUES?

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Background and aims. In previous studies of day-to-day intra-individual variation in hormone levels in men, samples were mainly collected in the morning to control diurnal variation. Clinical samples, however, may be collected throughout the day. We evaluated the effect of sampling throughout the day on within-subject variation, the background against which clinical measurements are evaluated.

Methods. Three samples were collected two days apart (e.g. Monday, Wednesday, Friday) in the morning and again in the afternoon from 66, randomly selected, community dwelling men, 30–80 years old, from Boston, Massachusetts. Men were randomly assigned to morning or afternoon sampling in week 1 with the other samples collected in week 2.

Results. Median morning blood draw time was 7:55 am; afternoon was 15:10 pm. Sixty-four subjects completed all six visits and 2 completed 5 visits. Morning values were, on average, 13% higher than afternoon values ($p < 0.001$). More values <300 ng/dL occurred in the afternoon than the morning (26.3% versus 15.6%). The difference varied with age (afternoon versus morning, age 30–60 yrs: 23.5% versus 11.1%%, $p = 0.0127$; age 60–80 yrs: 30.4% versus 22.0%, $p = 0.22$). However, the frequency of values <250 ng/dL did not vary by time of day or age (afternoon versus morning, age 30–60 yrs: 13.0% versus 8.6%, $p = 0.27$; age 60–80 yrs: 10.1% versus 12.2%, $p = 0.68$).

Conclusions. The effect of diurnal variation and afternoon sampling on diagnoses of low testosterone depends on age and the cut-off point used for the diagnosis.

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CONTEMPORARY OUTCOME OF CARDIAC CATHETERIZATION IN NONOGENARIANS

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Background and aims. Although elderly patients represent the fastest growing portion of cardiovascular patients they are underrepresented in clinical trials and registries. We aimed to explore the treatment, procedure related risk, and outcome of patients older than 90 years of age.

Methods. We retrospectively studied 32 patients $>$ 90 years ($93 + 1.2$ years) who underwent cardiac catheterization in a tertiary specialist hospital (0.2% of 14.892 procedures over 3 years).

Results. Baseline characteristics revealed a higher prevalence of diabetes ($p < 0.001$), chronic obstructive pulmonary disease ($p < 0.02$), previous myocardial infarction ($p < 0.02$), and number of diseased vessels ($p < 0.01$) in nonogenarians. Patients <90 years showed more hyperlipidemia ($p < 0.01$) and previous percutaneous coronary interventions ($p < 0.014$). Nonogenarians underwent coronary angiography more often for acute coronary syndrome (ACS) ($p < 0.003$), presented more often in cardiogenic shock ($p < 0.003$), and were transferred faster to coronary angiography in case of ACS ($p < 0.002$). The observed in-hospital mortality rate of 13% ($p < 0.003$) in nonogenarians was strongly influenced by the severity of clinical presentation and the presence of co-morbidities.

Conclusions. Despite the common scepticism that cardiac catheterization exposes patients >90 years to an unwarranted risk, our data demonstrate an acceptable incidence of complications and mortality in this group of patients.

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ASSESMENT OF RISK OF FALLS IN ELDERLY PEOPLE BY A SCREENING PROTOCOL IN PRIMARY CARE

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Background and aims. Our first aim is to assess the application of a computerised 'frail elderly' protocol in patients over 79 years in primary care, and to determine the extent of the protocol follow-up in all its different variables. The specific goals are to know the cumulative incidence of falls in the population studied with this protocol, and to analyse their relation with the rest of variables.

Methods. A multicentre, observational, transversal, cross-matched study, performed in 4 basic semi-urban healthcare areas of the Baix Empordà (Girona); total population 81,548 with 4.6% above 79 years of age.

Population: persons of both sexes over the age of 79, to whom the computerised protocol for the fragile elderly person is directed, from July 2003 to December 2005. Patients receiving home care are excluded. An extraction from the program database was performed. Using SPSS 14.0 2, a univariant descriptive analysis and bivariant analysis.

Results. The protocol was applied to 37.2% of the target. 36% had a history of falls. A statistically significant relationship ($p < 0.005$) was found between this variable and the presence of physical barriers, presence of a disabling pathology, taking of more than 5 medications, taking of psycho-medications, altered Unipodal Test, altered Time Up and Go Test, altered Whispering Test, altered vision, need for help in daily life activities, leaving home less than twice a week, absence of recreational activities.

Conclusions. The protocol is useful for detecting elderly persons at risk for falling, as the majority of the variables demonstrate a statistically significant relationship with falls. Its application should be fomented.

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THE VALUE OF COMBINED USE OF SURVIVIN, CYTOKERATIN 20 AND MUCIN7 MRNA FOR BLADDER CANCER DETECTION IN VOIDED URINE

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Background and aims. To evaluate the value of combined use of survivin, cytokeratin (CK) 20 and mucin (MUC) 7 mRNA in comparison with voided urine cytology in the detection of bladder cancer patients.

Methods. 153 patients (115 with histologically diagnosed bladder cancer, the remaining 38 with benign urological disorders) and 20 healthy volunteers were evaluated by RT-PCR for detecting survivin, CK-20 and MUC7 mRNA in voided urine before cystoscopy. Urinary cytology was also analysed as the control. Cystoscopy was done for all patients as the reference standard for identification of bladder cancer. The three markers and cytology were evaluated independently or in combinations.

Results. The overall sensitivity and specificity were 90.4% and 94.7% for survivin, 82.6% and 97.4% for CK-20, 62.6% and 94.7% for MUC7 and 46.0% and 100% for voided urine cytology. Combined sensitivity of voided urine cytology with the 3 biomarkers together was higher than either combined sensitivity of voided urine cytology with 1 of the biomarkers or than that of the biomarker alone. There was no significant difference in sensitivity of survivin, CK-20 and MUC7 with respect to sex, history of bladder cancer, tumour burden, cancer type and tumour stage. However, a significant association between CK-20 with age and MUC7 with tumour grade were detected ($p < 0.01$).

Conclusions. Our data indicate that survivin, CK-20 and MUC7 in voided urine had higher sensitivities compared to voided urine cytology. Combined use of the 3 markers can improve the sensitivity for detecting bladder cancer. It may reduce the need for cystoscopy.

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SIGNIFICANCE OF PLASMA LEVELS FOR EFFECTS OF TESTOSTERONE ON METABOLIC SYNDROME

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Background and aims. Normalization of testosterone (T) levels in elderly men with subnormal T reduces fat tissue and waist circumference, with improvements in lipid profiles.

Methods. The effects on two testosterone (T) treatment modalities on features of the metabolic syndrome of two cohorts of elderly men with late onset hypogonadism, over 9 months, were compared. Group 1 ($n = 28$) received long acting T undecanoate Group 2 ($n = 27$) received T gel (50 mg/day).

Results. (⋆ statistically significant) With T gel plasma T rose to low-normal reference range. With TU plasma T rose to midnormal reference range. Effects on variables of metabolic syndrome: waist circumference (cm) TU: −3.38, T gel: −1.89⋆. Systolic/diastolic BP mm Hg TU: −2/−1; T gel: 0⋆/0⋆. SHBG (nmol/L) TU: +2; Tgel: −9. Cholesterol (mg/dL) TU: −94; T gel: −39⋆. LDL (mg/dL) TU: −32; T gel −19⋆. HDL (mg/dL) TU; +9; T gel: +4. Triglycerides (mg/dL) TU: −167; T gel: −79⋆. Haemoglobin (g/dL) TU +1; T gel: +0.3⋆. Haematocrit (%) TU: +5; T gel: +4⋆. T gel suppressed SHBG, while TU increased SHBG slightly but ⋆.

Conclusions. normalization of T had a beneficial effect on metabolic syndrome. The higher plasma levels of T generated with TU than with T gel were clearly more effective indicating that there is an optimal plasma level of T in relation to the effects on the metabolic syndrome. There is increasing evidence that 1) different effects of T require different levels of T and 2) not all men are equally responsive to certain levels of T.

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AILMENTS AND HEALTH STATUS OF ELDERLY MALES: EVIDENCE FROM INDIA

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Background and aims. In India improved life expectancy and epidemiological transition has led to a large increase in elderly population over age 60 years, thus ranking second in the world with 77 million aged population. The elderly have little hope of escaping poverty and their situation only becomes worse with age as they are increasingly plagued by chronic and debilitating diseases. The present paper attempts to provide insight into the situation of the often forgotten aged males of society, for effective policy implication towards healthy aging and improved quality of life.

Methods. The Census and 60th round NSSO data on Morbidity, Health Care and the condition of the Aged has been used for the Bivariate and Multivariate analysis of level, differentials and determinants of various morbidities, disabilities and treatment seeking among aged males.

Results. The findings prove that the older among the elderly suffer from greater health problems and that the reported mobility and health status decreases with increasing age, while the frequency of number of disabilities increases with increasing age. Mental ailments are more common in the developed states and in the southern region, while cardiovascular and musculo-skeleton system diseases, followed by respiratory, nutritional-metabolic and sexually transmitted diseases are major morbidities prevailing among aged males. Moreover, 24% of aged males are anaemic, especially in the eastern region. The elderly males are the least likely to seek treatment, especially in rural areas.

Conclusions. The study presents evidence of vulnerability of elderly males and advocates provision of assistance, focusing on economic and living conditions along with health care.

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MASCULINITY AND ITS SOCIO-DEMOGRAPHIC CORRELATES: RESULTS FROM THE ASIAN MALES STUDY

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Background and objective. Aggression, a need for control, competitiveness and emotional reticence are the stereotype societal expectations of a man. In Asia, these masculine characteristics are recognized as vital traits of a successful man. This paper attempts to identify socio-demographic correlates of male identity.

Methods. We reported findings from the Asian MALES, a cross-sectional study of Asian men, aged 20–75 years, from China ($n = 2{,}055$), Japan ($n = 1{,}877$), Korea ($n = 2{,}000$), Malaysia ($n = 3{,}000$) and Taiwan ($n = 2{,}002$). They were recruited via random digital dialling and street interception. Trained interviewers conducted telephone and face to face interviews using a standardized questionnaire. Respondents' socio-demographic, lifestyle, perceived stress level and overall health were correlated with indicators of male identity: personal attributes (e.g. honour, control, coping skills), family, social status, wealth, career and health (including sex).

Results. The relative importance of each attribute differed across the five Asian countries. More than 90% of the men considered the indicators to be important except for 'active sex life' (89%), 'avoiding shameful situation' (88.9%), 'success with women' (87.9%) and 'physically attractive' (85%). Attributes such as 'coping with problems', 'being in control' and 'respect from friends' were considered important regardless of age, employment or marital status. The importance of career and financial status decreased with age ($p < 0.0005$); but physical attractiveness, sexual performance and success with women were more important to older men ($p < 0.0005$).

Conclusion. Masculinity is influenced by socio-demographic parameters. This preliminary finding might influence future studies on men's health-seeking behaviour and health outcomes.

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WHY SUICIDE RISK IS SO HIGH IN THE HUNGARIAN ELDERLY POPULATION

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Background and aims. Hungary used to have the highest suicide rates in the world. Despite the decreasing suicide statistics, the rate of suicides among Hungarian elderly is still one of the highest (over 100/100000 in males above the age of 65). Suicide mortality is more than three-fold in elderly females, and more than two-fold in elderly males compared to the population under the age of 65. It means that more than 500 elderly males and more than 300 females kill themselves annually in Hungary.

There are many published data on completed suicides, but there is only a little information about attempted suicides in elderly. The authors examined the characteristics of elderly suicide attempters with special regard to organic and depressive disorders, as well as sociodemographic factors.

Methods. Within the framework of the WHO/EURO Multicentre Study on Suicidal Behaviour data of 1,158 suicide attempts were collected in Pecs Centre. The old age group ($n = 78$) was compared to the younger suicide attempters ($n = 1080$) in both genders.

Results. Among the elderly, a higher rate of female attempters and a lower rate of repeaters were found. Elderly patients used more lethal methods (especially males), they had more depressive and organic disorders. Elderly suicide attempters had relative social isolation with a few ambivalent and dependent relations.

Conclusions. The recognition and treatment of depression play an important role in suicide prevention in the elderly (mainly in males). Adequate emotional and psychosocial support by the family and the health care systems are essential in suicide preventive strategies.

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'COUPLES MEDICINE' – HEALTHY AGING FOR MEN AND WOMEN

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Background and aims. For a decade we have treated men successfully for the andropause. Their female partners have been partially overlooked. Current menopause therapy is in chaos. Men are 80% satisfied with treatment. However, women are cautious and anxious regarding therapies offered.

Our aim is to alleviate symptoms and anxieties of couples by treating them as a unit – seeing them together and separately.

Methods. In family medicine we must go beyond symptom relief with our aging men and women to include education. Therapies must combine risks and prevention of chronic diseases such as cardiovascular disease, osterporosis and all types of cancer. The risks for diseases increase with aging.

We highlight optimal screening and prevention strategies for both sexes, as well as all current hormonal therapies. The W.H.I. study is summarized and put into perspective. We focus on couples between 50 and 80+ years.

On first visits we see couples together whenever possible. Each partner brings an interesting perspective on the partner's issues. Our research includes detailed family histories, BMI, complete laboratory studies, screening tests, and discussion of lifestyle issues. We see the couples separately for results and together for education and future planning.

Results. Our findings to date tell us that our aging couples do indeed have issues that they are reluctant to discuss together, unless there is a knowledgeable, neutral third party present.

Conclusions. We are finding that this approach to aging couples is promoting much improved physical, emotional and psychological health. We thus conlude that there is a prolonging of good health and independent living.

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RIGISCAN MONITORING OF NOCTURNAL TUMESCENCE IN PATIENTS WITH LOW TESTOSTERONE LEVEL TREATED WITH TESTOSTERONE UNDECANOATE

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Background and aims. To assess the effect of testosterone therapy, in particular, injectable long-acting testosterone undecanoate on penile composition and nocturnal tumescence and erection.

Methods. Eleven testosterone deficient subjects (total testosterone < 12 nmol/l) with ED went through RigiScan control at baseline, after 3 and 6 months during treatment with 1000 mg, injections of testosterone undecanoate at day 1, 6 weeks later and then every three months. Baseline and monitoring programme included history, physical examination, co-morbidities and concomitant medication. IIEF questionnaire, DRE, PSA, t testosterone level, liver function test, CBC and lipidogramme. Exclude patients with PSA > 4 and abnormal DRE or high LFT. Patient education including

video demonstration. Rigiscan for 3 consecutive nights at home, analysed for: number of erection events, average event rigidity in tip and base, base line circumference (cm), and average event tumescence (cm) in both tip and base.

Results. Remarkable improvement of number of erections or nocturnal penile tumescence events from 2.7 ± 0.72, to 4.76 ± 0.63, as well as number of average event rigidity from 56.6 ± 1.8 at tip and 48.09 ± 90 at base up to 74.8 ± 88 at tip and 68.12 ± 54 respectively. No alterations were found in follow-up protocol with regard to liver function, PSA, DRE and CBC. Improvement in all lipid parameters.

Conclusions. Testosterone therapy with T undecanoate in hypogonadal patients with ED is significantly improving penile rigidity and the events of NPT within 3–6 months. These data are remarkably quantifying the erectile quality in this cohort.

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FRACTURE OF PENIS: REVIEW, ANALYSES AND TREATMENT OUTCOMES OF 26 CASES

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Background and aims. To analyse the demographic pattern, mechanism of injury, diagnosis and management of this condition in Qatar and compare pattern of injury with literature reports.

Methods. Review of hospital records of 26 patients with fractured penis, treated in our department for a period of ten years.

Results. Injury was found to be more common in expatriate populations. Forceful manipulation of the penis during masturbation was found to be the most common cause of injury in this predominantly single (bachelor or living away from partner) category of patients. Clinical diagnosis was possible in all patients. Twenty-three patients underwent surgical repair of tunical tear, while three patients were treated conservatively (refused surgery 2, late presentation 1). In the immediate post-operative period, superficial skin necrosis occurred in one patient, small penile haematoma in another. Follow-up was possible in 23 from 26 patients, including 3 who were treated conservatively. One patient in the surgical group developed palpable plaque at the site of repair, while a second patient had palpable plaque with erectile dysfunction. One patient in the surgical group complained of chordee. In the conservative group, one patient had palpable plaque with erectile dysfunction.

Conclusions. Fractured penis is apparently common in Qatar, particularly in the expatriate population. Pattern of injury is significantly different in Middle East comparing to literature. Diagnosis is easily established by history clinical examination. Investigations like Ultrasound, X-ray, cavernosography, MRI can be required in unclear or complicated cases. Surgical repair is the standard treatment advocated, providing good results with low rate of complications.