Available online at www.sciencedirect.com
SCIENCE DIRECT®
European Journal of Obstetrics & Gynecology and Reproductive Biology 113 (2004) 123–125
EUROPEAN JOURNAL OF OBSTETRICS & GYNECOLOGY AND REPRODUCTIVE BIOLOGY
www.elsevier.com/locate/ejogrb

Review

Male sexuality with advancing age

Andreas Jung*, Wolf-Bernhard Schill

Centre of Dermatology and Andrology, Justus Liebig University, Gaffkystraße 14, 35392 Giessen, Germany

Abstract

People aged 60 years or older are commonly given the image of grandparents who are sexually rather inactive. However, a high percentage of men over 60 years have sexual desires and are sexually active. Aging men need more time and more direct stimulation of the penis to achieve full erection. The risk of developing erectile dysfunction increases with age. Almost one man in 22 aged 60–69 years without previous erection problems develops erectile dysfunction within 1 year. Hormone replacement therapy is only indicated if testosterone deficiency is combined with the syndrome of the ''aging male'' and lack of other disorders that are possibly causative and could be treated. For hormone replacement therapy testosterone gel preparations are preferable because they have a short half-time and can be immediately discontinued in the event that a pre-existing occult prostate carcinoma is stimulated.

Keywords: Aging male; Erectile dysfunction; Hormone replacement therapy; Sexuality; Testosterone

1. Introduction

Adulthood and old age have become an increasingly important issue in the aging societies of the Western world. However, is sexuality in older age widely accepted? As a consequence of the sexual revolution of the last century, sexual topics in general have been less considered a taboo. Nowadays, it is generally accepted that intercourse is not only aimed at having children. To enjoy sex and to fulfill sexual desires is thought to be part of good quality of life. The taboo of masturbation was abolished by psychoanalysis and sexuality in early childhood is accepted as reality. In contrast, people aged 60 years or older are preferentially attributed with the status of grandparents. This image is rather asexual and almost incompatible with a satisfying sexual life. ''Grown up'' children often have enormous difficulties to accept sexual feelings and activities of their parents, especially in the context of a new partnership [1].

2. Sexuality

The Massachusetts Male Aging Study (MMAS) [2] in particular, pointed out that a high percentage of men aged 60 years and older have sexual desires and are sexually active. However, the frequency of sexual desires, thoughts, and dreams decreased, while sexual satisfaction did not change. Age-related modifications of the four phases of the sexual cycle are characterized by a considerable delay of arousal, plateau, orgasm/ejaculation, and resolution [3,4]. In general, aging men need more time and more direct stimulation of the penis to achieve full erection. The plateau phase is prolonged with diminished urge to pass to orgasm and ejaculation. Orgasm is weaker than in young men and occurs in a shorter period with a reduced number of contractions of the ischial and bulbocavernosal muscles. Semen volume is lower than in young men. Penile detumescence occurs with extreme rapidity and an increased refractory period [5].

In a representative study, 1000 aging men were recently asked about their sexual activities and satisfaction in partnership [6]. The percentage of sexually active men (approximately 85%) was nearly constant up to the age of 60 years and decreased to 51% in older men. Sexual activities were found only in 17% of the group of men over 60 years without a partner. Furthermore, satisfaction with sexuality decreased with age, especially if there was no opportunity for sexual activities. Interestingly, satisfaction with the partnership increased slightly with age. Co-morbidity was correlated with reduced sexual activity and satisfying partnership.

3. Erectile dysfunction

In a longitudinal analysis (8.8 years follow-up) of the data of more than 800 men without erectile problems at the first survey the MMAS revealed a remarkable increase of the

* Corresponding author. Tel.: +49-641-9943284; fax: +49-641-9943259.
E-mail address: andreas.jung@derma.med.uni-giessen.de (A. Jung).

0301-2115/$ – see front matter
doi:10.1016/j.ejogrb.2003.10.007

incidence of erectile dysfunction with aging [7]. The risk to develop erectile dysfunction was found to be 1.2% per year for men without previous erection problems aged 40–49 years and increased to 3% per year in those aged 50–59 years and 4.6% per year in men aged 60–69 years. In the age group of 60–69 years nearly every 22nd man without previous erection problems developed erectile dysfunction within 1 year. In addition, the risk of erectile dysfunction was higher in men with a low education level or co-morbidity with diabetes, cardiovascular diseases, hypertension, and related medical treatment. With only 15% of 70-year-old men the percentage of those requiring medical support is very low [8]. However, the introduction of the phosphodiesterase-V-inhibitor sildenafil citrate offered a new and relatively successful therapy option in recent years. To date, sildenafil has been used worldwide by 20 million men for treatment of erectile dysfunction. Use of sildenafil is an easy and secure therapy option for erectile dysfunction, which works irrespective of the underlying cause of the disease. Acceptance and success of this therapy are much higher than in the case of sublingual apomorphine, prostaglandin E1 for penile autoinjection or use of a vacuum pump. The essential contraindication to sildenafil treatment is nitrate medication for cardiovascular disease. Deaths under sildenafil are not attributable to the drug, but to the co-morbidity, predominantly of the cardiovascular system [9]. Further phosphodiesterase-V-inhibitors have recently been approved and are commercially available as vardenafil (very high affinity to phosphodiesterase-V) and tadalafil (long half-time of 17.5 h) [10].

4. Hypogonadism of the aging male and hormone replacement therapy

The clinical symptoms are mainly non-specific, and associated with the syndrome of the ‘‘aging male’’: lack of libido, reduced sexual activity and penile erection, changes in mood with a tendency to depression, fatigue, irritability, diminution in muscle volume and strength, increased visceral fat, osteoporosis, decrease in body hair and skin atrophy. Beyond the age of 50, serum testosterone levels decrease by nearly 1% per year. The concomitant increase of the level of sex hormone binding globulin, which predominantly binds testosterone, leads to further reduction of free and biologically active testosterone [11–13]. Values of serum testosterone below 11 nmol/l and of free testosterone below 0.0255 nmol/l are indicative of hypogonadism in aging men. Hormone replacement therapy is only indicated if testosterone deficiency is combined with the above mentioned rather non-specific symptoms and lack of other disorders that are possibly causative and could be treated [14,15]; for example, testosterone deficiency together with osteoporosis, reduced muscle strength and low libido without a specific disorder. Testosterone therapy should be avoided in situations where clinically non-specific symptoms occur without detectable testosterone deficiency. Under the criteria of evidence-based medicine dihydroepiandrosterone, melatonin or growth hormone should not be used.

Only testosterone preparations with a short half-life should be used for substitution as the possible manifestation of a pre-existing occult prostate carcinoma during therapy requires its immediate cessation. For this purpose testosterone gel preparations are preferable. The gel should be applied in the morning to the skin on upper arms and shoulders. After a short period of 10–30 min, the gel can be removed to reduce the risk of transfer to the partner through direct skin contact [16]. A further alternative are testosterone patches. However, patients compliance is reduced by the need to shave the scrotal skin for application of the patches, or high skin irritability if absorption enhancers are incorporated for application at other skin regions. The use of testosterone esters for intramuscular injection should be avoided in aging men, because of their typically supraphysiological testosterone levels in the days after the injection with higher adverse effects: induction of polycythemia and unfavorable serum lipid profiles. Oral substitution with long esters of testosterone is possible, but there are enormous oscillations of serum levels. Before testosterone substitution is started, the risk of an occult prostate carcinoma must be minimized, by detection of prostate specific antigen, prostate palpation, and rectal sonography of the prostate. These examinations should be performed every 3–6 months during testosterone replacement therapy.

References

[1] Marandola P, Musitelli S, Noseda R, Stancati S, Vitetta D, Jallous H, et al. Love and sexuality in aging. Aging Male 2002;5:103–13.
[2] McKinlay JB, Feldman HA. Age-related variation in sexual activity and interest in normal men: results from the Massachusetts Male Aging Study. In: Rossi AS, editor. Sexuality Across the Lifecourse. Chicago: University of Chicago Press; 1994. p. 261–85.
[3] Masters WH, Johnson VE. Sex and the aging process. J Am Geriatr Soc 1981;29:385–90.
[4] Jung A, Schuppe HC, Schill WB. Comparison of semen quality in older and younger men attending an andrology clinic. Andrologia 2002;34:116–22.
[5] Kandeel FR, Koussa VKT, Swerdloff RS. Male sexual function and its disorders: physiology, pathophysiology, clinical investigation, and treatment. Endocr Rev 2001;22:342–88.
[6] Beutel ME, Schumacher J, Weidner W, Brähler E. Sexual activity, sexual and partnership satisfaction in ageing men—results from a German representative community study. Andrologia 2002;34:22–8.
[7] Johannes CB, Araujo AB, Feldman HA, Derby CA, Kleinman KP, McKinlay JB. Incidence of erectile dysfunction in men 40–69 years old: longitudinal results from the Massachusetts Male Aging Study. J Urol 2000;163:460–3.
[8] Brandenburg U, Sperling H, Hartmann U, Truß MC, Stief C. Sexualität im Alter. Urologe A 2002;41:346–9.
[9] Padma-Nathan H, Eardley I, Kloner RA, Laties AM, Montorsi F. A 4-year update on the safety of sildenafil citrate (viagra). Urology 2002;60(Suppl 2B):67–90.
[10] Montorsi F, Salonia A, Deho’ F, Cestari A, Guazzoni G, Rigatti P, et al. Pharmacological management of erectile dysfunction. BJU Int 2003;91:446–54.

[11] Kaufman JM. Hypothalamo-pituitary-gonadal function in aging men. Aging Male 1999;2:157–65.
[12] Harman SM, Metter EJ, Tobin JD, Pearson J, Blackman MR. Longitudinal effects of aging on serum total and free testosterone levels in healthy men. J Clin Endorcinol Metab 2001;86: 724–31.
[13] Schill WB. Fertility and sexual life of men after their forties and in older age. Asian J Androl 2001;3:1–7.
[14] Morales A, Lunenfeld B. Androgen replacement therapy in aging men with secondary hypogonadism. Aging Male 2001;4: 151–62.
[15] Deutsche Gesellschaft für Andrologie. Konsensuspapier ''Der alternde Mann''. Reproduktionsmedizin 2000;16:439–40.
[16] Rolf C, Behre HM, Nieschlag E. Reproductive parameters of older compared to younger men of infertile couples. Int J Androl 1996; 19:135–42.