

# Endocrine Abstracts

April 2010 Volume 22

ISSN 1470-3947 (print) ISSN 1479-6848 (online)

## 12th European Congress of Endocrinology

*24–28 April 2010, Prague, Czech Republic*



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## 12th European Congress of Endocrinology

24–28 April 2010, Prague, Czech Republic

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Novartis have kindly sponsored the publication of this abstract book. They were not involved with the marking and selection of abstracts.

examine G894T SNP eNOS genotype frequencies and its potential role with sperm motility in infertile men. Through this prospective controlled study in the Andrology Unit, we have enrolled infertile ( $n=70$ ) and healthy ( $n=60$ ) men. Sperm motion kinetics assessed by computer assisted semen analysis (CASA), and allele-specific polymerase chain reaction (PCR-RFLP) to investigate the frequency of guanine (G) thymine (T) at position  $-894$  within exon 7 of the eNOS gene.

Finding(s)

An increased frequency of the G894T eNOS (T) allele observed in asthenozoospermic patients ( $P=0.02$ ). In asthenozoospermic men, homozygotes eNOS (TT) genotyping showed low percentages of rapid motile sperm (a+b) compared to wild-type eNOS (GG) ( $P=0.02$ ) or heterozygotes eNOS (GT) genotyping ( $P=0.01$ ). In Fertile men, wild-type eNOS showed high percentages of rapid motile sperm (a+b) compared to eNOS (TT) ( $P=0.03$ ) or eNOS (GT) genotyping ( $P=0.04$ ).

Conclusion(s)

Our findings suggest that the T allele, encoding for aspartic acid, of the eNOS (Glu298Asp) gene may play a role with low sperm motility.

P529

**Infertility and low gonadotropin levels as the first sign of testicular seminoma: a case report**

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The case report demonstrates a case of a 31 years old patient referred to our outpatient endocrinology clinic for suspicion for central hypogonadism.

He had undergone a first line examination at a urology outpatient clinic for infertility. His semen analysis showed azoospermia, palpation of the testicles did not reveal any abnormalities. Sex hormone levels were obtained where low gonadotropin (LH and FSH) levels with total testosterone level within normal range were noted.

Central hypogonadism as the possible reason for azoospermia and infertility was suspected.

On clinical examination the patient appeared well virilised, gynecomastia was not noticeable. Repeated blood samples confirmed low LH and FSH levels with total testosterone level close to the upper limit of the normal range. Free testosterone level was within normal range and so were the other pituitary hormones. Our conclusion was that the patient did not have central hypogonadism and that the low gonadotropins were a normal variant.

The patient was referred back to the urology outpatient clinic to search for the testicular reason for azoospermia. Ultrasound examination revealed a small tumor mass (1 cm in diameter) and high  $\beta$ HCG plasma levels were obtained. The patient underwent surgical removal of the right testicle. Histology revealed a seminoma of the testis.

LH and FSH levels increased slightly above the upper normal limit shortly after the surgery as the levels of HCG dropped. That is why we assume that paraneoplastic HCG acted as the dominant gonadotropin hormone in the patient and decreased the pituitary gonadotropin levels, while the testosterone level remained unchanged.

Conclusion

It is very important to consider testicular tumors in young patients with low LH and FSH levels, infertility and missing clinical signs of hypotestosteronemia.

P530

**Congenital hypogonadotropic hypogonadism in men as a cause of estradiol deficiency**

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Context

Congenital hypogonadotropic hypogonadism (CHH), is a rare disorder associated with severe testosterone deficiency and with impaired bone mineral mass (BMM) acquisition and osteoporosis. Estradiol ( $E_2$ ) play a major role in bone development and maintain in BMM in humans.

Objective

To evaluate in detail the degree of  $E_2$  deficiency in adult men with CHH.

Design and patients

Using a sensitive  $E_2$  assay, we measured serum total  $E_2$  ( $TE_2$ ) and bioavailable  $E_2$  ( $BE_2$ ) in 83 untreated CHH men ( $31.1 \pm 11.6$  years (mean  $\pm$  s.d.)) comparatively to 63 similarly aged ( $34.0 \pm 11.4$  years) normal men and to 33 subjects with Klinefelter syndrome ( $34.5 \pm 11.8$ ). In these three groups we also measured SHBG and free  $E_2$  ( $FE_2$ ).

Results

In CHH men, total  $E_2$  ( $7.4 \pm 4.2$  vs  $17.6 \pm 6.6$  pg/ml in controls; mean  $\pm$  s.d.;  $P < 0.0001$ ) and bioavailable serum  $E_2$  ( $5.1 \pm 3.5$  vs  $13.7 \pm 5.7$  pg/ml;  $P < 0.0001$ ) as well as  $FE_2$  ( $0.21 \pm 0.13$  vs  $0.59 \pm 0.23$  pg/ml;  $P < 0.0001$ ) were very significantly lower than in normal men and than in subjects with Klinefelter syndrome ( $TE_2$ :  $16.0 \pm 7.2$  pg/ml,  $BE_2$ :  $12.4 \pm 5.7$  pg/ml and  $FE_2$ :  $0.53 \pm 0.22$  pg/ml in the later respectively;  $P < 0.01$ ). Mean ( $\pm$  s.d.) serum SHBG concentrations were  $28.2 \pm 10.3$ ,  $40.0 \pm 24.8$  and  $27.4 \pm 15.1$  (nmol/l) in controls, CHH and Klinefelter respectively. In CHH patients serum total  $E_2$  was positively correlated with serum total testosterone ( $r=0.35$ ,  $P < 0.03$ ). Finally, in CHH and normal men taken on the whole, serum  $TE_2$  levels were very positively correlated ( $R=0.57$ ;  $P < 0.0001$ ) with serum LH levels indicating a relationship between the low  $E_2$  levels and the severity of LH-driven testosterone deficiency in CHH.

Conclusion

Our data demonstrate that hypogonadism in CHH men is a condition clearly associated with a deep  $E_2$  deficiency. The therapeutic relevance of these results will be discussed.

P531

**Prevalence and characterization of hypogonadism among men with human immunodeficiency virus infection: preliminary results**

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Introduction

Among various comorbidities of human immunodeficiency virus-1 (HIV-1) infection, male hypogonadism is very frequent with a prevalence of 19% in patients treated with highly active anti-retroviral therapy. However, literature data are still lacking and achieved by studies with  $< 300$  subjects each.

Aim of the study

Prevalence and clinical characterization of hypogonadism among a large number of men with HIV-1.

Methods

Measurement of serum total testosterone, LH and FSH in 950 outpatients aged 20–69 years (mean age 45.5 years) attending the metabolic clinic of infectious and tropical disease between 2005 and 2009.

Results

Mean serum total testosterone was  $470.9 \pm 205.5$  ng/dl. Considering Endocrine Society thresholds for hypogonadism, 15.7% of patients was hypogonadic ( $T < 300$  ng/dl); (8% hypogonadotropic, 77.2% normogonadotropic and 14.8% hypergonadotropic). According to thresholds proposed by the International Society for the Study of the Aging Male (ISSAM) 23.7% of subjects resulted hypogonadic ( $T < 346$  ng/dl) of which 5.8% was hypogonadotropic, 80% normogonadotropic and 14.2% hypergonadotropic.

	Endocrine Society ( $T < 300$ ng/dl)	ISSAM ( $T < 346$ ng/dl)
Percentage of hypogonadism (n hypogonadio/n total)	15.7% (149/950)	23.7% (225/950)
LH $< 1.4$ mIU/ml	8% (12/149)	5.8% (13/225)
$1.4 < LH < 8.9$ mIU/ml	77.2% (115/149)	80% (180/225)
LH $> 8.9$ mIU/ml	14.8% (22/149)	14.2% (32/225)

Conclusions

The prevalence of hypogonadism in HIV patients is comparable to that of older healthy subjects (19.3% of hypogonadism in patients with mean age 58.7 years; Schneider, *Clin Endocrinol* 2009) and is higher than in the general population. Normogonadotropism predominance in subjects with hypotestosteronemia suggests also a possible involvement of a pituitary dysfunction and/or dysregulation as the underlying cause responsible for the development of hypogonadism.

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