Study in 1790 Baltic men: *FSHR* Asn680Ser polymorphism affects total testes volume

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**OBJECTIVE**

Follicle-stimulating hormone receptor (*FSHR*) contains two linked variants, Thr307Ala (rs6165) and Asn680Ser (rs6166), shown to modulate ovarian function in women (Edson *et al.*, 2009). The effect on male fertility and reproductive parameters has been inconclusive (Laan *et al.*, 2012). We studied the effect of the Asn680Ser on male reproductive parameters in a large study group (n=1,790) from the Baltic countries.

**DESIGN**

The population-based Baltic male cohort (Estonians, Latvians, Lithuanians; n=1,052) and Estonian idiopathic infertility patients (sperm count <20x10⁶/mL, n=738) were genotyped for the *FSHR* Asn680Ser.

**MATERIALS AND METHODS**

PCR, RFLP; multiple linear regression (PLINK), meta-analysis (*meta* package, R software).

**RESULTS**

No difference was detected in allelic distribution of the *FSHR* Asn680Ser between the Baltic cohort and infertility group. Significant association was detected between the Ser680-allele and lower testes volume in the Baltic cohort (*P* = 0.010, effect = -1.16 mL) and infertility group (*P* = 0.007, effect = -1.77 mL). Meta-analysis enhanced the statistical significance (*P* = 0.000066, effect = -1.40 mL) and supported further associations between the Ser680 variant and higher serum FSH (*P* = 0.072), lower Inhibin B (*P* = 0.037) and total testosterone (*P* = 0.034). No statistically significant associations were identified with serum LH and estradiol, and sperm parameters (Grigorova *et al.*, 2013).

**CONCLUSIONS**

The study in 1790 Baltic men shows statistically highly significant association of the *FSHR* Asn680Ser with total testes volume and supportive association with serum reproductive hormone levels indicative to the functional effect of the alternative FSHR variants on male reproductive physiology.

**REFERENCES**

