The effect of VDR polymorphisms on serum testosterone level in aging men population.

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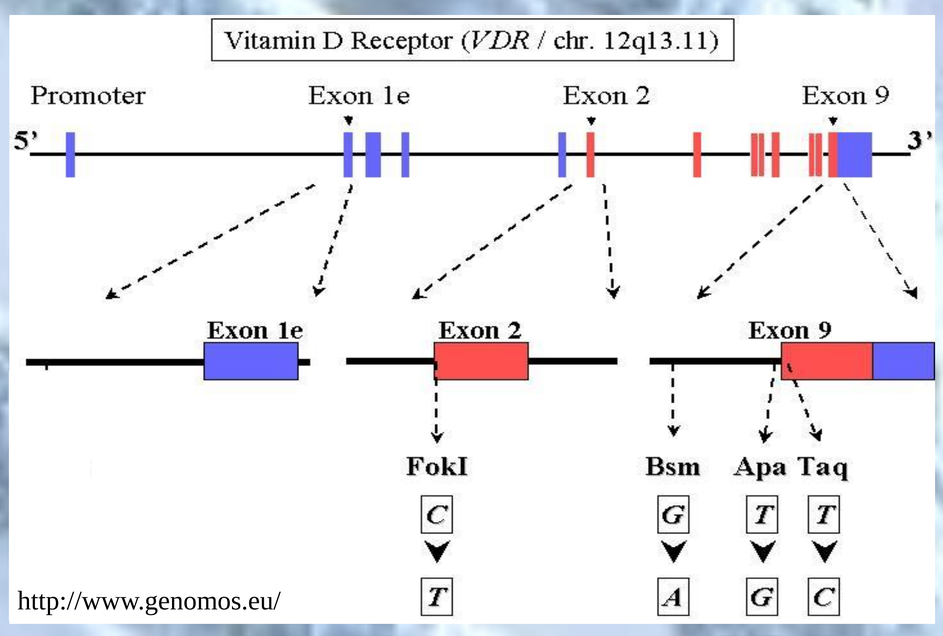
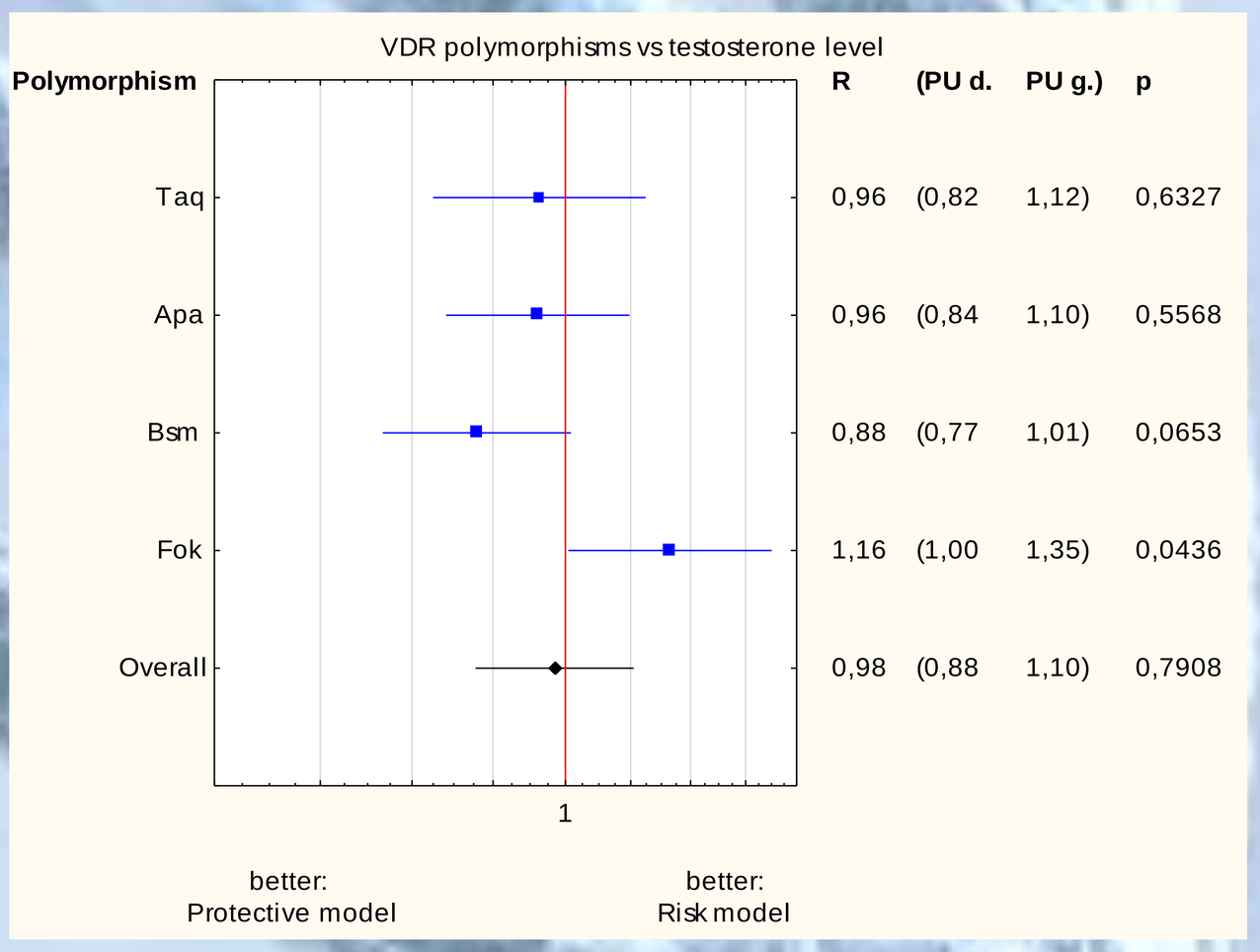
Introduction

Vitamin D co-regulates the synthesis of sex hormones. The aim of this study was to determine whether polymorphisms (TaqI, ApaI, BsmI and FokI) of the vitamin D receptor (VDR) show a correlation with the serum level of the testosterone in the aging men population.

Metrial and methods

A group of 224 men aged 65-90 years, randomly selected from the group of 5695 persons included in the PolSenior project was studied. We established genotype prevalence of the vitamin D receptor gene polymorphisms (TaqI - rs10735810, ApaI - rs1544410, BsmI - rs7975232, FokI - rs731236) and testosterone serum concentration levels. Polymorphisms were divided into two models: protective (Taq - TT genotype, Apa - aa genotype, Bsm - genotype BB, Fok - genotype FF) and risk (Taq - tt genotype, Apa - AA genotype, Bsm - genotype bb, Fok - genotype ff). The cumulative effect of these two models on the concentration of testosterone were calculated.





Results

Risk model of the polymorphism Fok shows significantly higher serum levels of the testosterone than the protective model (p=0.0436).

Although the carriers of the protective model of Apa, Taq and Bsm polymorphisms have a higher serum testosterone level, it doesn't reach statistical significance (p=0.5568, p=0.6327, p=0.0653).

Analysis of the combined effect of all models of polymorphisms indicates that the protective model is associated with higher levels of testosterone, but it doesn't reach statistical significance (p=0.7908).

Conclusion

- persons with genotype ff (risk) of the Fok polymorphism have a significantly higher level of the testosterone;
- protective model of Taq, Apa, Bsm polymorphisms is also correlated with higher level of the testosterone;
- haplotype bAt associated with the low levels of the VDR gene expression, correlates with a lower concentration of serum testosterone.

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