Genotype and haplotype frequencies of the DRD4 VNTR polymorphism in the men with no history of ADHD, convicted of violent crimes

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Purpose
The dopamine receptor 4 gene variable number of tandem repeats (DRD4 VNTR) polymorphism is associated either with an increased risk of ADHD, or with a higher incidence rate of violent criminal behavior and aggression in the human populations. However, it cannot be excluded that the risk variants of the DRD4 VNTR polymorphism, the 7-repeat and 5-repeat (7R and 5R) alleles might be associated with the increased occurrence of violent behavior in adults with no history of ADHD.

Methods
This study was to examine the prevalence of the certain risk variants of the DRD4 VNTR polymorphism in the men convicted of violent crimes, with no history of ADHD (n = 161).

Results
The prevalence of the 5R and 7R DRD4 VNTR alleles was higher in the men convicted of violent crimes, with no history of ADHD than in the general Russian Caucasian population (Novosibirsk city, n = 425).

Conclusions
This is the first evidence that both 7R and 5R, the ADHD-linked DRD4 VNTR alleles are directly associated with the incidence of violent behavior in the men with no history of ADHD. Results support the hypothesis that proactive aggression might be a genetically-based, separate feature of personality that is independent of ADHD.