The Risk of Posttraumatic Stress Disorder After Trauma Depends on Traumatic Load and the Catechol-O-Methyltransferase Val(158)Met Polymorphism

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BACKGROUND: The risk for posttraumatic stress disorder (PTSD) depends on the number of traumatic event types experienced in a dose-response relationship, but genetic factors are known to also influence the risk of PTSD. The catechol-O-methyltransferase (COMT) Val158Met polymorphism has been found to affect fear extinction and might play a role in the etiology of anxiety disorders. METHODS: Traumatic load and lifetime and current diagnosis of PTSD and COMT genotype were assessed in a sample of 424 survivors of the Rwandan Genocide living in the Nakivale refugee camp in southwestern Uganda. RESULTS: Higher numbers of different lifetime traumatic event types led to a higher prevalence of lifetime PTSD in a dose-response relationship. However, this effect was modulated by the COMT genotype: whereas Val allele carriers showed the typical dose-response relationship, Met/Met homozygotes exhibited a high risk for PTSD independently of the severity of traumatic load. CONCLUSIONS: The present findings indicate a gene-environment interaction between the human COMT Val158Met polymorphism and the number of traumatic event types experienced in the risk of developing PTSD.
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