

## **P-990 - INFLUENCE OF COMT VAL158MET POLYMORPHISM ON STARTLE RESPONSE DURING PREGNANCY**

E.Comasco, C.Hellgren, L.Oreland, I.Sundstrom-Poromaa

<sup>1</sup>Department of Neuroscience, <sup>2</sup>Department of Women's and Children's Health, Uppsala University, Uppsala, Sweden

**Introduction:** A strong link between estradiol and dopamine (DA) neurotransmission, which is regulating cognitive and affective pathways, has been provided by animal studies.

Catechol-O-methyltransferase (COMT) enzyme activity, which degrades DA and Noradrenaline, is influenced by a single nucleotide polymorphism (COMTVal158Met). This variation has been reported to be related to both executive and emotional functions.

**Objectives:** To investigate whether the physiologically high estradiol levels during pregnancy affect emotional processing in relation to COMTVal158Met genotype.

**Aims:** To test the hypothesis that the Val/Val genotype, associated with high COMT enzyme activity and therefore decreased DA signalling, shows a different startle response compared to the other COMTVal158Met genotypes, in the presence of an enhancer of DAergic neurotransmission, such as estradiol.

**Methods:** Seventy-eight pregnant women were assessed at gestational week 38 for startle response, measured by eye blink, during control condition, positive and negative anticipation stimuli and pleasant and unpleasant image stimuli. A blood sample was used for measurement of hormonal levels and genetic analyses. Personality traits (SSP), depression (MADRS) and anxiety (STAI) symptoms were also investigated.

**Results:** COMTVal158Met heterozygote women (N= 29) scored the lowest in overall startle response magnitude ( $p < 0.05$ ). No difference was observed between homozygous women with regard to the Met (N=23) and Val alleles (N=22). No significant difference by genotype was found in affective modulation, depression or anxiety scores.

**Conclusions:** Enhancement of DA signalling by estradiol might result in a U-shaped response curve, as has been shown with regard to administration of amphetamine, in relation the COMTVal158Met polymorphism.