

P-785 - BRAIN PERFUSION MODULATION BY GENDER AND SEROTONIN TRANSPORTER POLYMORPHISMS

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Introduction: The evidence of 5-HTTLPR effects on resting state amygdala activity is inconsistent. Investigators reported either enhanced perfusion in 5-HTTLPR short allele carriers or no genetic effect. Gender-related differences in cerebral blood flow (CBF) have been also reported. In this study we tested the hypothesis that the interaction of 5-HTTLPR gene with gender will affect the CBF in amygdala.

Objectives: To explore the modulation of the amygdala perfusion by gender and 5-HTTLPR polymorphisms.

Methods: We recruited 81 right-handed white Caucasian healthy volunteers (42 females) aged 19-55 years. Resting CBF was examined using a pseudo-continuous arterial spin labelling technique. The BOLD signal to dynamic facial expressions was acquired to determine the amygdala activation. All participants were genotyped for the 5-HTTLPR gene (*ll*/*l*-*ss* alleles and *La*-*Lg* variants).

Results: We found a significant main effect of gender in left ($p=0.006$) and right ($p< 0.001$) amygdalas, with higher CBF in males. An interaction between gender and 5-HTTLPR was significant in right amygdala ($p=0.008$). This was accounted for by higher values of CBF in right amygdala in male *s* allele carriers compared with females. In the females only, the BOLD response to facial emotions significantly and negatively correlated with CBF in right amygdala.

Conclusions: The novelty of our results is in the demonstration of gene by gender interaction that might help to interpret some of the inconsistencies in existing literature. We suggest that CBF measure provides for an indirect estimate of susceptibility to emotional signals.