Evidence for Gender-Specific Impairment in Emotion Processing in Parkinson’s Disease and its Relationship with Functional Activity in an Emotion Recognition Paradigm

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Objectives
Impaired facial emotion identification in Parkinson’s disease (PD) has been reported for negative basic emotions, but results are quite heterogeneous$^1$. In this context, gender is believed to be a major moderator variable, however, data are very limited$^2$. Using a functional Magnetic Resonance Imaging (fMRI) paradigm, we aim to investigate gender effects on behavioral data and functional correlates of emotion processing in PD.

Methods
A detailed clinical and neuropsychological test battery including the Ekman 60 faces task and event-related fMRI as well as anatomical images using a 3T Siemens MR Scanner are acquired in PD patients and age- and gender-matched healthy controls. During scanning subjects are presented video-sequences of trained actors performing one of six facial expressions (sadness, happiness, disgust, fear, anger, neutral; 20 videos each).

Results
Preliminary behavioral data showed a significant worse performance of PD patients in the recognition of fear compared to controls. This deficit in the recognition of fear was more pronounced in male than female PD patients. A corresponding gender difference was not found in healthy controls.

Conclusion
Our data suggest a relative impairment in PD patients for the recognition of fear. Moreover, our results indicate that gender may play a role in emotion processing in PD. The identification of respective neural correlates will provide further evidence for PD-related gender differences in emotion processing.

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