The impact of emotional mimicry and oxytocin on frontotemporal dementia

https://neurodegenerationresearch.eu/survey/the-impact-of-emotional-mimicry-and-oxytocin-on-frontotemporal-dementia/

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Research Abstract

Frontotemporal dementia (FTD) is a progressive neurodegenerative disorder, typically striking adults in mid-life (age 50-60). Pathologic protein accumulations and neuronal loss in FTD slowly destroy brain regions of frontal and/or temporal cortex, causing previously high functioning individuals to develop striking behavioural and cognitive problems. Hallmark to the disease is a progressive loss of the capacity for empathy, even for one’s own family members, which is magnified by a complete lack of insight into their personality and behavioural changes. At present there are no treatments which can ameliorate the emotional blunting, lack of empathy or decline in social behaviour. Our long-term goal is to characterize the neural pathways by which

empathy and basic emotional capacities break down in FTD in order to develop novel treatment approaches for these symptoms. The present investigation will use functional brain imaging to determine the key brain abnormalities behind the emotional impairments in FTD. This study will examine brain function while patients and healthy controls view and attempt to mimic emotions in others. Recent work has shown that these methods reliably increase emotional states in healthy adults, and when used with brain imaging, provide a window into the function of brain regions critical for experiencing emotions and empathy. In addition, the effects of oxytocin, a drug recently shown to improve empathy in healthy individuals and some patient groups, will be examined in patients with FTD. Specifically, the impact of the drug on empathy-related behaviours and emotion-related brain function in patients with FTD will be determined for the first time. At the successful completion of the study, we will have delineated the mechanisms of emotion deficits in FTD, developed novel techniques by which the effects of treatments for these symptoms may be tested, and determined whether oxytocin can improve empathy in patients with this disorder.

Further information available at:

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