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Parkinson's patients who are pathological gamblers also display abnormal social behavior

January 14 2010

People with Parkinson's Disease are more likely to display abnormal social behaviour and make poor decisions in ambiguous circumstances if they are pathological gamblers, according to research in the January issue of the *European Journal of Neurology*.

A number of studies have already associated pathological gambling with Parkinson's, suggesting that it is a frequent impulse control disorder associated mainly with dopamine replacement therapy.

Researchers from the Raul Carrea Institute for Neurological Research (FLENI) in Buenos Aires, Argentina, interviewed the immediate relatives of seven Parkinson's patients who were pathological gamblers. They also interviewed the families of 13 patients - matched by age, sex, education and disease severity - who did not gamble.

They found that the gamblers were less co-operative with others, had difficulties making or keeping close relationships and often did what they wanted, without caring what other people thought.

The researchers also found that the patients in the pathological gambling group performed worse in the Iowa Gambling Task, which is used to assess decision-making abilities in ambiguous or risky situations.

"The object of this study was to assess decision-making processes in

Parkinson's Disease patients with and without pathological gambling by asking them and their relatives to take part in a series of tests" says Dr Ramon Leiguarda, an expert in cognitive neurology.

"We found that the patients in the pathological gambling group were more likely to make poor decisions and select disadvantageous alternatives more frequently than advantageous alternatives."

The combination of poor decision-making and abnormal social behaviour has led the team to conclude that dopamine replacement therapy can induce dysfunction in the areas of the brain that control affective decision making - the ventromedial pre-frontal cortex and amygdala-ventral striatum system.

Six of the seven pathological gamblers who took part in the study were male. At the time of the study they had an average age of 61 and their average age at diagnosis was 52.

Six of the patients had no history of gambling before developing Parkinson's Disease. One patient had played poker with friends for 30 years, but his gambling behaviour exacerbated after starting dopamine replacement therapy and now included roulette and horse racing.

The other six participants said that their preferred type of gambling was slot machines.

Four of the seven displayed other impulse control disorders - two were also compulsive shoppers and two displayed hypersexuality.

"We believe that the behaviour highlighted in our study, combined with previous research into the links between Parkinson's Disease and pathological gambling, point to dopamine replacement therapy causing dysfunction in specific areas of the brain" says Dr Leiguarda.

"Further studies that assess Parkinson's Disease patients recovering from pathological gambling are needed to better understand the physiopathology of this impulse control disorder."

More information: Decision-making in Parkinson's Disease patients with and without pathological gambling. Rossi et al. European Journal of Neurology. 17, pp 97-102. (January 2010). DOI: 10.1111/j.1468-1331.2009.02792.x

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