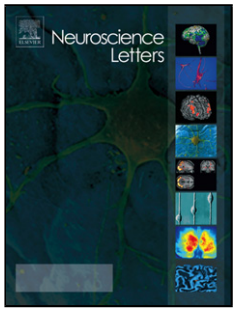

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Altered intrinsic brain functional connectivity in drug-naïve Parkinson's disease patients with *LRRK2* mutations

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Conflicts of interest

No.

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Key words: Parkinson's disease; leucine-rich repeat kinase 2 (*LRRK2*); mutation; functional connectivity; fMRI

Highlights

- There are differences of FC between PD patients with and without *LRRK2* mutation.
- The FC of superior frontal gyri decreased with age in the mutation carriers.
- Both subgroups showed a consistent alteration within some striatal circuits.
- Our results are preliminary and further investigations are needed.

Abstract

Background: Leucine-rich repeat kinase 2 (*LRRK2*) has been recently identified as a causative gene of Parkinson's disease (PD), and the *LRRK2* R1628P and G2385R mutations are common in ethnic Han-Chinese PD patients. However, the pathogenic mechanism of *LRRK2* mutations in PD remains largely unknown.

Methods: Resting-state functional MRI (fMRI) was used to assess the functional connectivity (FC) of the striatal subregions of 11 ethnic Han-Chinese drug-naïve PD patients with the *LRRK2* R1628P or