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Original Article

***Parkin* gene variations in late-onset Parkinson's disease: comparison between Norwegian and German cohorts**

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Abstract

Objectives – Mutations in the *Parkin* gene can cause autosomal recessive early-onset Parkinson's disease (PD). Recently, *Parkin* mutations were also suggested to play a role in the commoner late-onset forms of PD.

Methods – We compared a German cohort of PD patients (95) with a Norwegian cohort of PD patients (96). Both cohorts have predominant late-onset form of PD. Mutation and polymorphism frequencies were compared via single-strand conformation polymorphism and sequence analyses.

Results – Three heterozygous missense mutations (Arg256Cys, Arg402Cys and Thr240Met) were found in late-onset PD patients in the German patient cohort (1.6%). A missense mutation (Arg402Cys) was also found in one of 149 healthy control subjects (0.3%). Only one heterozygous missense mutation (Arg256Cys) was identified in a Norwegian patient suffering from late-onset PD (0.5%). The frequencies of

four known single nucleotide polymorphisms significantly differ between the two distant European populations.

Conclusion – The results support the hypothesis that heterozygous mutations in the *Parkin* gene may act as susceptibility alleles for late-onset forms of PD in rare cases.

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