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Risk factors associated with Parkinson's Disease: a case-control study

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Introduction: With the increased life expectancy worldwide, the number of Parkinson's disease (PD) patients is expected to increase by more than 50 % by 2030 [1]. The high percentage of non-genetic forms sees environmental factors as important etiological hypotheses [2].

Objective: To investigate exposure to various environmental factors with the aim of highlighting possible new associations with the onset of PD.

Methods: We enrolled 264 PD patients and 277 healthy controls from three clinical centers, between 2016 and 2018, and conducted a questionnaire-based case-control study. We assessed demographic characteristics, place of residence, comorbidities, marital status, occupation, hobbies, sports activity, smoke-alcohol consumption, and diet.
Controls were matched with cases for age, sex, and province of residence. Statistical analyses were conducted using the t-test for continuous variables and the chi-square test for categorical ones.

Results: There was no significant difference regarding marital status and demographic characteristics between cases and controls. Gynecological conditions and previous appendicectomy were significantly more frequent among controls (p=0.044 and p=0.00001, respectively). Occupational exposure to solvents (p=0.049) and metals and metal fumes (p=0.002), and recreational exposure to solvents (p=0.02), pesticides (0.024) and glues (p=0.038), was higher among cases. Overall, there was a statistically significant difference in sport activity (p=0.027) and in activities performed outdoors (p=0.016), with higher prevalence in the controls group. Controls were active smokers in greater numbers than cases at the time of the questionnaire, with a statistically significant difference (p=0.0009), while no significant differences were found in alcohol consumption. In the dietary regime survey the only difference was in cereal consumption (p=0.0018), which was greater among controls.

Conclusion: Our findings highlight the possible relevant role of environmental and lifestyle factors in the development of Parkinson's disease. In view of the increasing prevalence of the disease, it is important to carefully consider every possibility of prevention and early diagnosis.

References:

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