

[S08.006] Occupation and Parkinson's Disease (PD) Onset Age in a Movement Disorders Clinic

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OBJECTIVE: To determine if any occupation is associated with a younger age at PD onset **BACKGROUND:** Working as a welder was proposed to increase the risk of young age at PD onset, based on a survey of a specialty clinic population (Racette et al, 2001). Earlier work suggested agricultural work (or rural residence) to increase risk of young age at PD onset (Golbe, 1993). **DESIGN/METHODS:** Medical records of 1087 consecutive PD patients seen between 2000 and 2002 at the Parkinson's Institute in Sunnyvale, CA were reviewed. Lifetime primary occupation was recorded during the first clinic visit. Occupations were grouped using 31 job categories modeled after the U.S. Standard Occupational Classification. For each job category, we determined its overall frequency and compared PD onset ages using T-tests for independent means. Risk of PD onset age \leq 50 years was estimated using odds ratios (OR). **RESULTS:** Primary occupation was known for 923 subjects and age at PD diagnosis was known for 885 of these. Of these, 122 (13.8%) had PD onset age \leq 50 years. Mean and median onset ages overall were 64.3 and 65 years (range 26-91). Among all 885 PD patients, the most common occupation was teaching (11.8%), followed by administrative workers (10.5%), engineers (9.9%), sales workers (9.1%), and managers (8.7%). Only 3% were construction workers, 0.5 %, machinists and 0.2% welders. PD onset age differed significantly from the overall mean for several job categories. PD onset age was younger for medical workers (mean 61.4 years, $p = 0.056$) and technical workers (58.6 years, $p = 0.001$). PD onset age was older for homemakers (mean 68.2 years, $p = 0.006$) and military personnel (mean 72.2 years, $p = 0.02$). The risk of PD onset age \leq 50 years was significantly increased only for technical workers, OR = 2.5 (95% CI = 1.3 - 4.8; $p = 0.006$). **CONCLUSIONS:** In contrast to the prior clinical survey, welding was not associated with an earlier age at PD onset in this clinical population. Similarly, agricultural workers were not at greater risk of younger age at PD onset. Only technical workers, primarily computer and electronics specialists, were at increased risk of PD onset age \leq 50 years. While statistically significant, this association does not necessarily imply a causal relationship of technical work with PD. Instead, this association may be due to the recognized biases inherent in specialty clinics, including over-representation of younger, insured and employed persons, as compared to a community-based population. A preponderance of technical workers is not surprising in this clinic, based in the Silicon Valley, a community in which the primary industries are technological. Whether a similar bias might explain the previously reported earlier age at onset in welders with PD can only be determined by a controlled investigation of occupation and PD risk. Supported by: in part by an unrestricted research grant from welding materials manufacturers.
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