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Geographic and Ethnic Variation in Parkinson Disease: A Population-Based Study of US Medicare Beneficiaries.

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Background: Parkinson disease is a common neurodegenerative disease. The racial, sex, age, and geographic distributions of Parkinson disease in the US are unknown. Methods: We performed a serial cross-sectional study of US Medicare beneficiaries aged 65 and older from the years 1995, and 2000-2005. Using over 450,000 Parkinson disease cases per year, we calculated Parkinson disease prevalence and annual incidence by race, age, sex, and county. Spatial analysis investigated the geographic distribution of Parkinson disease. Results: Age-standardized Parkinson disease prevalence (per 100,000) was 2,168.18 (+/-95.64) in White men, but 1,036.41 (+/-86.01) in Blacks, and 1,138.56 (+/-46.47) in Asians. The incidence ratio in Blacks as compared to Whites (0.74; 95% CI = 0.732-0.748) was higher than the prevalence ratio (0.58; 95% CI = 0.575-0.581), whereas the incidence ratio for Asians (0.69; 95% CI = 0.657-0.723) was similar to the prevalence ratio (0.62; 95% CI = 0.617-0.631). Bayesian mapping of Parkinson disease revealed a concentration in the Midwest and Northeast regions. Mean county incidence by quartile ranged from 279 to 3,111, and prevalence from 1,175 to 13,800 (per 100,000). Prevalence and incidence in urban counties were greater than in rural ones (p < 0.01). Cluster analysis supported a nonrandom distribution of both incident and prevalent Parkinson disease cases (p < 0.001). Conclusions: Parkinson disease is substantially more common in Whites, and is nonrandomly distributed in the Midwest and Northeastern US. Copyright © 2010 S. Karger AG, Basel.

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