

New method for measuring Parkinson's disease prevalence reveals sharp increase in Israel

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In a new study published today in the inaugural issue of the *Journal of Parkinson's Disease*, Israeli researchers report that by tracking pharmacy purchases of anti-Parkinson drugs they could estimate the number of Parkinson's disease (PD) cases in a large population. The study identified a sharp rise in PD prevalence from 170/100,000 in 2000 to 256/100,000 in 2007 in Israel, which warrants further investigation.

Surprisingly, much of the world lacks accurate figures for the percentage of the population (prevalence) with PD and the rate of occurrence of new cases (incidence). Reliable estimates using "epidemiological" population studies are essential to identify [risk factors](#) for developing the disease, and thereby reduce risk. They are also essential for planning how many patients with the disease may need treatment by health services.

"Our proposed algorithm may be used as a reliable and low-cost tool to establish PD cohorts for epidemiological studies," commented lead investigator Nir Giladi, MD, Chairman, Department of Neurology, Tel Aviv Sourasky Medical Center, and Associate Professor, Sackler School of Medicine, Tel Aviv University. "Our findings of prevalence and incidence are higher than expected, and a rising number of PD patients in Israel reflect the growing burden of PD [morbidity](#) on Israeli health and social systems, and should be the base for national resource planning for the future."

The refined drug-driven algorithm used assessed PD patients at three certainty levels – definite, probable, and possible – based on the fact that PD therapy is chronic and generally involves an increasing number of drug-types and dosages as the disease progresses. Thus, those levels of accuracy were assigned based on specific combinations of categories of four factors: (a) PD drug types used; (b) age at first PD drug purchase (c) follow-up period; and (d) PD drug purchase intensity – number and continuity of purchases.

Using the pharmacy records of over 1.8 million people who were members of the Maccabi Healthcare Service (MHS) in Israel (about 25% of the total population), researchers found 499,629 PD drug prescriptions were dispensed to 18,546 MHS members between January 1, 1998 and December 31, 2008. The algorithm identified 7,134 PD cases overall and 5,288 new cases within this timeframe. Annual prevalence rates increased from 170/100,000 in 2000 to 256/100,000 in 2007, or 6% per year.

More information: The article is "Use of a refined drug tracer algorithm to estimate prevalence and incidence of Parkinson's disease in a large Israeli population," by Orly Chillag-Talmor, Nir Giladi, Shai Linn, Tanya Gurevich, Baruch El-Ad, Barbara Silverman, Nurit Friedman, and Chava Peretz. *Journal of Parkinson's Disease* 1(1). 10.3233/JPD-2011-11024

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