Widely prescribed multiple sclerosis treatment with interferon beta may not slow progression of disease: study

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Researchers with the UBC Hospital MS Clinic and Brain Research Centre at Vancouver Coastal Health and the University of British Columbia have published important data in the *Journal of the American Medical Association* (*JAMA*) about the impact of a common drug therapy on the progression of multiple sclerosis for people with the relapsing-remitting form of the disease.

The study, led by Drs. Helen Tremlett, Afsaneh Shirani, Joel Oger and others, shows no strong evidence that a group of drugs, beta interferons (β-IFNs), prescribed to treat MS had a measurable impact on the long-term disability progression of the disease.

The team examined the linked health records of 2656 BC patients between 1985 - 2008 in a retrospective cohort study, which means data from already collected sources were linked together in an anonymized form and studied. Data sources included the BC Ministry of Health, PharmaNet and the BC Multiple Sclerosis (BCMS) database, facilitated by Population Data BC.

The study population included patients with MS who were treated with beta interferons (β-IFNs), the most widely used treatment for relapsing-remitting MS, as well as untreated MS patients. The research team discovered that administration of β-IFN was not associated with a significant change in the progression of disability.

These findings will be of interest to MS patients with this form of the disease, but researchers are quick to point out that this is just one measure of these disease modifying drugs and there is still potentially significant benefit to patients.

"What this study provides is additional information to patients and clinicians about the longer term effect of this class of drugs," says corresponding author, Dr. Helen Tremlett (PhD), who also holds the Canada Research Chair in Neuroepidemiology and Multiple Sclerosis at UBC. "We know that this class of drugs is very helpful in reducing relapses, which can be important to patients. We do not recommend that patients stop taking these medications, but these findings provide evidence, allowing more realistic expectations as to the anticipated benefits associated with drug treatment from the disability perspective."

"It is still possible that some patients gain long-term benefit from β-IFNs. We are currently working toward identifying who those potential treatment responders might be," says Dr Afsaneh Shirani, who is the first author of the paper and a post-doctoral research fellow in the UBC Faculty of Medicine and Brain Research Centre at UBC and VCH Research Institute. "Our study also encourages the investigation of novel treatments for MS," she adds.

"In addition, this study suggests that linked data from health administrative databases have enormous potential for research applications, despite all the challenges of record linkage" says Dr Shirani.

Relapsing-remitting MS is characterized by relapses or "flare-ups" during which time new symptoms can appear or old ones can resurface or worsen. The relapses are followed by periods of remission during which time the person can fully or partially recover. Relapsing-remitting MS is the most common form of MS affecting around 85% of MS

patients in Canada.

"In clinical trial situations, it has been quite evident for years that patients receiving β-IFN treatment have reduced frequency of relapses as well as reduced frequency of new lesions seen on MRI," says Dr. Joel Oger, who is also a neurologist with the UBC Hospital MS Clinic. "This study following a large number of patients for a long time in "real life situation" does not show an association of the β-IFNs with long term disability and tends to confirm a more modern way of understanding MS: relapses may not be responsible for long term disability in all patients and another mechanism might be at work as well."

The research team is preparing for future studies further examining this and other classes of disease modifying drugs. The hope is that the research will ultimately lead to an individualized approach to the treatment of MS.

More information:
JAMA. 2012;308[3]:247-256.
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