

# **Risk of abnormally slow heart rate twice as high in those taking drugs to slow Alzheimer's**

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People taking one of several drugs commonly prescribed to treat Alzheimer's disease are more likely to be hospitalized for a potentially serious condition called bradycardia than patients not taking these medications.

Researchers from St. Michael's Hospital and Ontario's Institute for Clinical Evaluative Sciences (ICES) analyzed data from 1.4 million people aged 67 and older to see whether the risk for bradycardia was higher for those taking drugs called cholinesterase inhibitors.

Bradycardia is defined as an abnormally slow resting heart rate (under 60 beats per minute). Although it can be asymptomatic, it can also cause fainting, palpitations, shortness of breath, or even death.

"We wanted to see if there was a link between initiation of a cholinesterase inhibitor and subsequent hospitalization for bradycardia," explains lead author Laura Y. Park-Wyllie, a researcher at St. Michael's Hospital .

The three cholinesterase-inhibiting drugs currently approved for use in Canada are donepezil (brand name Aricept); rivastigmine (marketed as Exelon and Exelon Patch); and galantamine (branded Reminyl).

Most of the patients whose records were analyzed for the study had been

prescribed donepezil.

The results of the study showed that older patients hospitalized with bradycardia were more than twice as likely to have recently started on a cholinesterase inhibitor such as donepezil for [Alzheimer's disease](#) compared to those without bradycardia.

The findings appear in the September 2009 issue of *PLoS Medicine*, an open-access online medical journal.

The researchers say that as the prevalence of Alzheimer's disease and other forms of dementia increases, more people aged 65 years and older will be treated with a cholinesterase inhibitor.

"It will be increasingly more important to prescribe these drugs judiciously as they carry a risk of serious adverse events," Park-Wyllie says. "A careful [clinical evaluation](#) is required before and after initiating these drugs, and they should only be continued when there is a definite positive response."

The potential cardiovascular toxicity of these dementia drugs may be underappreciated by clinicians, Park-Wyllie adds. More than half of the patients who had been hospitalized with bradycardia resumed taking their cholinesterase inhibitor after being discharged.

"Our study provides evidence of the potential adverse effect of cholinesterase inhibitors on [heart rate](#). Health professionals need to reassess the merits of continued therapy in patients who develop bradycardia while taking these drugs," she says.

## About cholinesterase inhibitors and dementia

Cholinesterase inhibitors are commonly prescribed to delay the

progression of symptoms such as confusion and long-term memory loss in people with mild to moderate Alzheimer's disease.

It's known that people with dementia tend to have lower levels of a brain chemical called acetylcholine; the drugs work by boosting these levels. Reported side effects—including diarrhea, muscle cramps and abnormally slow heartbeat—may be related to increasing levels of acetylcholine in the body.

The benefits of cholinesterase inhibitors for people with Alzheimer's disease are generally small. The drugs do not reverse the effects of dementia. Other research suggests that in about half of patients, the drugs delay the worsening of symptoms for between six months to a year, although a minority of patients may benefit more.

Source: St. Michael's Hospital

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