High potency statins pose significantly higher risk of kidney injury than low potency, say experts

March 19 2013

Patients taking high potency statins for high blood pressure are at a 34% higher risk of being hospitalised for acute kidney injury (AKI), compared with those taking low potency statins, a paper published today in *BMJ* suggests.

The use of statins is often recommended to reduce the risk of cardiovascular disease among high risk patients. However, it still remains unclear as to whether statin therapy is specifically associated with greater adverse renal effects.

Researchers from across Canada therefore carried out an observational analysis, comparing patients who were prescribed high potency statins to those who were prescribed low potency statins in seven Canadian provinces and two international databases (UK and US) between 1997 and 2008.

The health records of 2 million people were used from the Canadian Network for Observational Drug Effect Studies (CNODES) for those with and without chronic kidney disease (CKD). All patients were age 40 or over. The mean age was 68 years.

Rosuvastatin at doses of 10mg or higher, atorvastatin at doses of 20mg or higher, and simvastatin at doses of 40mg or more were defined as high potency and all others as low potency. Statins were categorised as

high or low in this study according to whether they would produce a less or equal to 45% reduction in LDL (low density lipoprotein - which can contribute to high cholesterol).

For non-CKD patients (under age 65) taking low potency statins the risks of hospitalisation for AKI were as follows (per thousand patients): 1.2 to 1.4 in British Columbia, Manitoba and Saskatchewan, 3.5 in Quebec and 1.0 in the UK database. For those aged 65 and over: 3.1 in Ontario, Nova Scotia and Alberta, 4.0 in the US database.

Rates were substantially higher in patients with a history of CKD ranging between 23 and 45 per thousand in the first six months after initiation in Canada, to a low of 10 per thousand in the UK database and a maximum of 63 per thousand in the US database.

High potency statin users were 34% more likely to be hospitalised for AKI compared with low potency statin users in the first 120 days of treatment. Rates were not significantly increased in patients with CKD. This risk seemed to remain elevated for two years after initiation.

The researchers estimate that 1,700 non-CKD patients need to be treated with a high potency statin instead of a low potency statin in order to cause one additional hospitalisation for AKI. They do say, however, that further studies are needed to determine the link between statins and kidney injury.

The researchers conclude that prescribing high potency statins is "associated with an increased rate of hospital admission with AKI compared with lower potency statins". They say this risk occurs early after treatment and remains elevated for at least two years and that clinicians should consider this particularly when low potency statins are an option.

In an accompanying editorial, two colleagues from the University of Queensland Australia, say that despite the study concluding that there is an increased risk of hospital admission for acute kidney injury with high potency statins, more trials are needed to compare the adverse effects of high and low potency statins. They also say that further investigation into the cause of acute kidney injury requiring hospital admission should be undertaken.

More information: Paper: Use of high potency statins and rates of admission for acute kidney injury: multicenter, retrospective observational analysis of administrative databases, *BMJ*, 2013. Editorial: Statins in acute kidney injury: friend or foe? *BMJ*, 2013.

Provided by British Medical Journal