New study sheds light on long term effectiveness and safety of two widely used statins

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Two widely used statins, rosuvastatin and atorvastatin, are equally effective at preventing heart attacks, strokes and death in people with

coronary artery disease. But while rosuvastatin treatment is associated with lower cholesterol levels, it also carries a higher risk of developing type 2 diabetes than atorvastatin, finds a study published by *The BMJ* today.

Lowering "bad" (LDL) cholesterol levels with statins is recommended for people with coronary artery disease—a condition where the blood vessels supplying the heart are narrowed or blocked.

But few trials have directly compared the long term clinical effects of the two most potent statins—rosuvastatin and atorvastatin—in people with coronary artery disease.

To address this, researchers in Korea analyzed the results of the LODESTAR clinical trial, involving 4,400 adults (average age 65 years; 28% women) with coronary artery disease at 12 hospitals in South Korea.

At the start of the trial, medical history and lifestyle information was recorded and participants were randomly assigned to receive either daily rosuvastatin or atorvastatin for three years from September 2016 to November 2019. The researchers then examined differences between the two groups in terms of deaths from any cause and rates of heart attacks, strokes, and coronary revascularization (procedures to restore blood flow to parts of the heart).

Several other safety outcomes, including development of type 2 diabetes, hospital admissions due to heart failure, major blood clots, and cataract surgery were also assessed.

In all, 4,341 of the 4,400 participants (98.7%) completed the trial. The researchers found no discernible differences between the two groups for all-cause death (2.6% in the rosuvastatin group vs. 2.3% in the

atorvastatin group), heart attack (1.5% vs. 1.2%), stroke (1.1% vs. 0.9%) or any revascularization (5.3% vs. 5.2%).

The average LDL cholesterol level during the study period was lower in the rosuvastatin group than atorvastatin group (1.8 vs. 1.9 mmol/L).

The rosuvastatin group had a higher rate of developing type 2 diabetes requiring medication (7.2% vs. 5.3%) and cataract surgery (2.5% vs. 1.5%), but other safety outcomes did not differ between the two groups.

The researchers acknowledge several study limitations including the fact that only Asian participants were included in this trial, and the three-year study period may have been relatively short to find longer term effects of two statin types.

As such, they say their findings "should be interpreted with caution, and further dedicated investigation with longer follow-up is warranted."

However, they conclude, "In people with coronary artery disease, rosuvastatin and atorvastatin showed comparable efficacy in terms of a composite of all cause death, myocardial infarction, stroke, or any coronary revascularisation within three years. Rosuvastatin was associated with lower LDL cholesterol levels, but it incurred a higher risk of new onset diabetes mellitus requiring antidiabetics and cataract surgery than atorvastatin."

More information: Yong-Joon Lee et al, Rosuvastatin versus atorvastatin treatment in adults with coronary artery disease: secondary analysis of the randomised LODESTAR trial, *BMJ* (2023). DOI: 10.1136/bmj-2023-075837 , www.bmj.com/lookup/doi/10.1136/bmj-2023-075837

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