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## Study Uses New Approach to Determine Who Benefits from Statin Therapy



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According to new research, statin therapy provides the most benefit to patients with the highest genetic risk of heart attack. The research from Washington University School of Medicine in St. Louis, Brigham and Women's Hospital, Massachusetts General Hospital and Harvard Medical School has been published in *The Lancet*.

The researchers used a straightforward genetic analysis and assessed heart attack risk independent of traditional risk factors such as age, sex, cholesterol levels, smoking history, family history and diabetes. The investigators report that patients in intermediate and low risk categories benefit from statin therapy but the benefit is progressively smaller.

Doctors routinely prescribe statins to patients at risk of heart disease. The American College of Cardiology and the American Heart Association also changed its guidelines in 2013 regarding statin therapy. Since then, there has been a dramatic increase in the number of patients taking statins.

There has also been an increase in the debate over whether these drugs are being overused and which individuals should be allocated statin therapy to prevent a first heart attack. The objective should be to identify people who are at high risk of heart disease and to prescribe statin therapy to only those individuals. One of the most effective ways of doing so is through genetics. However, more research is needed to develop a test for clinical use.

The researchers combined data on 49,000 people enrolled in five studies and reported that individuals in a high-risk category have a 70 percent higher risk of heart attacks compared to those at lowest of genetic risk. The researchers also show that statin therapy results in a 13 percent reduction in risk in low-genetic risk group as compared to a 29 percent reduction in the intermediate group and a 48 percent reduction in the high-risk group.

These results are different from past research that has shown the same relative risk reduction (30 to 35 percent) through statins across all categories of patients.

"We need more research to confirm these results," said co-first author Nathan O. Stitzel, MD, a Washington University cardiologist and human geneticist. "Regardless, we can at least say that patients with a high genetic-risk score appear to benefit more from statin therapy because they're starting at a higher baseline risk, even controlling for all the clinical measures we routinely examine."

Therefore, by using this approach, it becomes clearer which patients would benefit from statin therapy. If a patient has a 10 percent risk of having a heart attack and if he is prescribed statins which cut down his risk by 7 percent (an approximate 30 percent reduction), then statin therapy is effective for him. However, a patient who has only 1 percent risk and he is prescribed statins that reduce his risk to 0.7 percent (the same 30 percent reduction), there is really no benefit that is being provided to the patient.

The authors believe that with additional research, the genetic-risk score could be a useful tool in determining which patients are likely to benefit from statin therapy.

Source: Washington University in St. Louis

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