

Genetic-screening trial could reduce drug side-effects

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(Medical Xpress) -- Patients with a range of common inflammatory diseases that also have genetic variations leading to low levels of a particular enzyme in their bodies are at greater risk of suffering side-effects from the widely-used drug azathioprine.

Researchers at The University of Manchester and the National Institute for [Health Research](#)'s Manchester Biomedical Research Centre (BRC) recruited 333 patients and carried out genetic screening tests on half of them to see if they could identify those with variants in the gene that makes the enzyme thiopurine methyltransferase.

Thiopurine methyltransferase helps the body process, or metabolise, azathioprine, so the team wanted to test whether patients with lower levels of the enzyme were at greater risk of developing side-effects from the drug.

“We found that patients with very low levels of thiopurine methyltransferase were at increased risk of developing side-effects to [azathioprine](#), as were elderly patients,” said Dr Bill Newman, who co-led the study in Manchester with a team of colleagues including Professors Katherine Payne and Bill Ollier.

“This was the UK’s first large-scale trial to find out if taking a genetic test before receiving the drug could help reduce the risk of serious side-effects and has helped to establish the benefits of pre-treatment testing of patients.

“Not only could genetic testing prior to treatment mean at-risk patients can be monitored more closely by their doctors but it should provide reassurance to patients who are not at increased risk of running into problems.”

The trial involved adult patients with conditions such as inflammatory bowel disease, from hospitals in the North West, Staffordshire and Somerset. The results have been published in the journal *Pharmacogenomics*.

“There is a lot of excitement about this new area of research, called stratified or personalised medicine, where tests are used to try to work out the most effective or safest treatments for each patient,” added Dr Newman.

“Using the test appropriately will help doctors to identify [patients](#) at risk of the most severe side-effects and to use other treatments instead.

“We hope that this work paves the way for other studies to see if genetic tests can be used to make treatments safer and more effective.”

Provided by University of Manchester

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