Benefits of pharmacogenetic testing are unclear

UCL Genetics Institute, UCL, Darwin Building, Gower Street, London WC1E 6BT.

Correspondence:

David Curtis *d.curtis@ucl.ac.uk*

Swen and colleagues report that for patients with an actionable pharmacogenetic test result, adverse drug reactions occurred in a smaller proportion for whom testing was available and used to guide treatment than in those for whom testing was only carried out after treatment (1). However they report an effect of exactly the same magnitude when all patients were analysed, regardless of whether or not they had an actionable result. What this means is that even among the patients with no actionable results there was a reduction in side effects: 476 (21.7%) out of 2198 with test results versus 703 (28.8%) out of 2437 without test results (chi-squared = 18.5, 1 df; p = 0.000017).

This reduction in adverse effects even when testing did not yield actionable results suggests that patients were less likely to report side effects if they knew that the pharmacogenetic testing had been performed, which they did as this was an open label study. The authors propose other possible mechanisms such as differences in medications prescribed between tested and untested patients. Whatever the reason, such biases could apply equally to those patients who did have actionable results. Which would suggest that the actionable results themselves had no substantive effect.

A second concern is the possibility that the pharmacogenetic testing might lead to lower doses and hence lower efficacy of treatment. A thorough assessment of the value of pharmacogenetic testing should assess all outcomes and not focus only on adverse drug reactions.

References

1. Swen JJ, van der Wouden CH, Manson LE, Abdullah-Koolmees H, Blagec K, Blagus T, et al. A 12-gene pharmacogenetic panel to prevent adverse drug reactions: an open-label, multicentre, controlled, cluster-randomised crossover implementation study. The Lancet [Internet]. 2023 Feb [cited 2023 Feb 3];401(10374):347–56. Available from: https://linkinghub.elsevier.com/retrieve/pii/S0140673622018414