Can rapid malaria diagnostic tests improve health outcomes in practice?

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A new study, carried out in primary care units in Zanzibar and published in this week's issue of *PLoS Medicine*, evaluates the impact of rapid malaria tests on prescribing practice and clinical outcomes. The findings suggest that routine use of such tests may reduce the number of people who are inappropriately given antimalarial drugs.

Currently, malaria in sub-Saharan Africa tends to be diagnosed on the basis of symptoms alone (i.e. fever). However, such symptoms are not very accurate and overuse of antimalarial drugs, such as artemisinin combination therapy, for individuals whose fever is actually caused by another disease may result in increased resistance to the drugs, in increased cost, and delayed treatment for the relevant condition. However, tests for malaria now exist which can be quickly carried out even in settings where a well-resourced laboratory is not available. One of these, Paracheck, was tested in this study by Anders Björkman and colleagues.

The study took place in four primary health care units in Zanzibar, where malaria is generally considered endemic. In the study, each unit alternated between weeks when "normal" clinical diagnosis guided treatment, and weeks when clinical diagnosis plus use of the rapid test were used to guide treatment. Study nurses, who were responsible for implementing the study and carrying out treatment, were encouraged to rely on the rapid diagnostic tests during weeks when these were used. 1,887 patients were included in the study (1,047 were children aged under five).

The researchers found that during weeks when rapid test-aided diagnosis was in place, there was a statistically significantly lower prescription of antimalarial treatment (36% of patients in the rapid test category, compared to 85% in the clinical diagnosis category). Prescription of antibiotics was also higher in the group of patients receiving rapid tests (37%, compared to 27% in the group receiving clinical diagnosis). This finding suggests that use of rapid diagnostic tests resulted in non-malarial causes of symptoms being considered and treated.

Encouragingly, the researchers found a lower rate of reattendance due to perceived lack of cure in the group who received a rapid test - 2.5% compared to 4.9% in clinical diagnosis alone.

The findings are in contrast to the results of other trials in which use of rapid diagnostic tests has not led to a reduction in inappropriate prescribing. Studies carried out in Zambia and Tanzania have suggested that healthcare workers may often give antimalarials even when a rapid test suggests the patient does not have malaria. Although the findings from this study in Zanzibar are encouraging, further work will be needed before it is clear that they can be generalized to other types of settings in sub-Saharan Africa, where training for healthcare practitioners, and practice may be very different.

More information: Msellem MI, Martensson A, Rotllant G, Bhattarai A, Stromberg J, et al. (2009) Influence of Rapid Malaria Diagnostic Tests on Treatment and Health Outcome in Fever Patients, Zanzibar—A Crossover Validation Study. PLoS Med 6(4): e1000070. doi:10.1371/journal.pmed.1000070, medicine.plosjournals.org/perl … journal.pmed.1000070

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