

Correspondence

To the Editors

Incidence of invalid results in using glucose-6-phosphate dehydrogenase (G6PD) rapid test: a note

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Dear Editors,

Glucose-6-phosphate dehydrogenase (G6PD) deficiency is a common genetic red blood cell disorder. This enzymatic defect becomes an important problem causing drug and stress induced intravascular haemolysis. In paediatrics, G6PD deficiency is also an important cause of neonatal jaundice. G6PD deficiency is endemic in many regions of the world including Africa, Southeast Asia and the Mediterranean. The laboratory investigation plays an important role in the diagnosis of G6PD deficiency.

In endemic areas the G6PD rapid diagnostic test (RDT) is widely used. For example, the assay is recommended as a screening tool before prescribing antimalarial drugs for a paediatric malarial case¹. A recent report from Southeast Asia showed that RDT had very good sensitivity and specificity when compared to the standard spectrophotometry test². The test also had a better diagnostic property when compared to the fluorescent spot test². Additionally, cost-effective analysis showed that RDT was cost-effective for use in a routine control programme³.

In laboratory medicine, an important consideration on G6PD RDT is its diagnostic property. In addition to inaccuracy (false positive and false negative), an important laboratory issue is invalid results. In previous observations from Indochina, where both malaria and G6PD deficiency are common, the problem of invalid results from using G6PD RDTs have been reported^{4,5}. Here, the authors perform a summative analysis on using G6PD RDT (Carestart, USA) for G6PD deficiency screening in endemic areas of the disease. From 866, there are 39 cases with invalid results giving an invalid result rate equal to 4.5 %.

The invalid results from the rapid test is an important consideration in using point of care testing. Invalid results in G6PD RDT might be due to several reasons such as high local temperature or high haematocrit⁴. The exact magnitude of invalid results is little studied. Here, it can be shown that the incidence of invalid results is not but it might be a

problem in the clinical usage of rapid test in the rural field setting.

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