

Field trials of a rapid test for G6PD deficiency in combination with a rapid diagnosis of malaria

IS.Tantular, K. Iwai, Khin Lin, S. Basuki, T. Horie, H. H. Htay, H. Matsuoka, H. Marwoto,
C.Wongsrichanalai, Y. P. Dachlan, S. Kojima, A. Ishii and F. Kawamoto

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Summary

A rapid single-step screening method for detection of glucose-6-phosphate dehydrogenase (G6 PD) deficiency was evaluated on Halmahera Island, Maluku Province, Indonesia, and in Shan and Mon States, Myanmar, in combination with a rapid diagnosis of malaria by an acridine orange staining method. Severe deficiency was detected by the rapid test in 45 of 1126 volunteers in Indonesia and 54 of 1079 in Myanmar, but it was difficult to distinguish blood samples with mild deficiency from those with normal activity. 89 of 99 severely deficient cases were later confirmed by formazan ring method in the laboratory, but 5 with mild and 5 with no deficiency were misdiagnosed as severe. Of the samples diagnosed as mild and no deficiency on-site, none was found to be severely deficient by the formazan method. Malaria patients were simultaneously detected on-site in 273 samples on Halmahera island and in 277 samples from Shan and Mon States. In Mon State, primaquine was prescribed safely to G6 PD-normal malaria patients infected with *Plasmodium vivax* and/or gametocytes of *P. falciparum*. The new rapid test for G6 PD deficiency may be useful for detecting severe cases under field conditions, and both rapid tests combined can be useful in malaria-endemic areas, facilitating early diagnosis, prompt and radical treatment of malaria and suppression of malaria transmission.