

Truenat: An affordable and user-friendly option for screening of sub-microscopic *Plasmodium* infections in low resource countries

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Sub microscopic infections (SMI) are one of the major hurdles in achieving the goal of malaria elimination. SMI remains undetected through standard diagnostic tools and contribute to sustenance of malaria transmission. Deora and colleagues in *The Lancet Regional Health-Southeast Asia* review SMI and highlight the issue of SMI in context of India where burden of SMI ranged from 0.4 to 38.4%.¹ The sensitivity of microscopy is lower for *Plasmodium falciparum* (Pf) malaria than *Plasmodium vivax* (Pv) and extremely compromised for mixed Pf-Pv infections. Importantly, the prevalence of Pf (63.8%) is ~ 1.8 times higher than Pv (36.2%) in India which means that a significant proportion is missed by microscopy.² The review advocated the importance of mapping hotspots of sub-microscopic infections using molecular techniques. But, molecular technique like polymerase chain reaction (PCR) requires skilled technician with sophisticated instrument and well equipped laboratory infrastructure. For elimination of SMI, point of care tests with better sensitivity will be required considering the diverse eco-geography of India. Truenat[®] Malaria, a chip-based microPCR test, is one such point of care diagnostic tool which has comparable limit of detection (<5 malaria parasites per microlitre) with PCR.^{3,4} The Truenat has aided advantage of portable, battery operated with no requirement of skilled manpower. The tool has shown proven benefits in successful screening and management of disastrous infections such as COVID-19 and Tuberculosis. Therefore, Truenat may produce

substantial benefits in identifying sub-microscopic *Plasmodium* infections in low resource settings due to its easy operations and cost-effectiveness. For successful elimination of SMI in India, demarcation of SMI hotspots by microscopy and Truenat supported with effective treatment would be a cost effective and more robust approach.

Contributors

GK: Conceptualization, Writing – GK and HS.

Declaration of interests

None.

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