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Images in Clinical Tropical Medicine

New Diagnostics for Yaws

Christian Kositz,1 Robert Butcher,1 and Michael Marks1,2*

1Clinical Research Department, Faculty of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine, London, United Kingdom; 2The Hospital for Tropical Diseases, London, United Kingdom

Yaws, caused by Treponema pallidum subsp. pertenue, is an important public health problem in many tropical countries.1 Like syphilis, the disease manifests in three stages; however, unlike syphilis, its route of transmission is non-genital skin-to-skin contact and not by sexual intercourse. Primary yaws manifests as either a papilloma or a chronic ulcer. Typically, ulcers are painless, with a raised edge and friable base (Figure 1). In secondary yaws, skin manifestations, involvement of the bones and joints including periostitis have been reported. Tertiary yaws develops in a minority of patients causing destructive lesions of the skin and soft tissues. Interest in yaws has been revived by the finding that azithromycin is a highly effective treatment of both primary and secondary yaws.2 Clinical diagnosis alone of primary yaws is unreliable, but a point-of-care test has been shown to be of value.3 This test provides a result analogous to a T. pallidum particle agglutination assay (Figure 2, line 1) and a rapid plasma reagin (RPR) assay (Figure 2, line 2). In early infection, only the RPR may be positive. Diagnosis has been further complicated by the discovery that Haemophilus ducreyi may cause clinically similar ulcers.4 New polymerase chain reaction (PCR) assays have been developed for yaws.5 DNA suitable for can be extracted directly from swabs collected into dry tubes without the need for transport medium. Figure 3 demonstrates real-time PCR amplification curves of positive and negative controls and a clinical swab from a yaws lesion containing T. pallidum pertenue DNA. Both serological and molecular tests have a major role to play in the World Health Organization yaws eradication campaign.

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Authors’ addresses: Christian Kositz and Robert Butcher, Clinical Research Department, Faculty of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine, London, United Kingdom, E-mails: christian.kositz@gmail.com and robert.butcher@lshtm.ac.uk. Michael Marks, Clinical Research Department, Faculty of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine, London, United Kingdom, and The Hospital for Tropical Diseases, London, United Kingdom, E-mail: michael.marks@lshtm.ac.uk.

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*Address correspondence to Michael Marks, Clinical Research Department, Faculty of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT, United Kingdom. E-mail: michael.marks@lshtm.ac.uk
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Figure 3. Quantitative polymerase chain reaction for yaws.