

Reliability of the clinical surveillance criteria for measles diagnosis

Editor – WHO has estimated that of the approximately 31 million measles cases and 960 000 measles deaths worldwide, 99% have occurred in the least developed or developing countries (1). Reported cases were considerably lower, at 702 298, which indicates the need to improve surveillance if measles is to be ultimately eradicated. In the industrialized world where there is a low incidence of measles cases, the problem is one of overreporting.

The WHO case definition of measles requires the presence of fever and rash with one or more of the following symptoms: cough, coryza or conjunctivitis (2). However, these clinical presentations can readily be confused with other rash-associated conditions, particularly those due to viruses, such as roseola infantum, human herpesvirus-6 (HHV-6), rubella, dengue and parvovirus. The consequences of misdiagnosis may adversely affect policy decisions. In the first 35 weeks of an enhanced surveillance programme in England and Wales (3), it was reported that only 3.7% (126/3442) of notified measles cases were confirmed in the laboratory. This emphasizes the importance of laboratory confirmation of clinically suspected measles cases.

South Africa has implemented strategies to eliminate measles, including mass immunization campaigns during 1996–97 which reached over 90% of the target population, in addition to a national

routine coverage rate of 85% for children 12–23 months of age. As part of this policy, it has been recommended that cases suspected to be measles, on WHO criteria, should have a blood specimen taken for laboratory confirmation by measles IgM determination.

To investigate reliability of the criteria and to establish a diagnosis in non-confirmed cases, sera from 220 patients reported clinically as measles cases were submitted to the laboratory for confirmation. The sera were tested for IgM antibodies to measles, rubella, parvovirus B19, EBV and HHV-6. Avidity tests were carried out on HHV-6 IgM positive sera. Of the 220 sera tested only 12 were measles IgM positive (5.5%), emphasizing the importance of laboratory confirmation of clinically suspected measles cases. A high proportion of the cases, 106/220 (48.2%), were positive for rubella, as has been found in several previous reports for clinically suspected measles cases. Parvovirus serology was positive in two cases and EBV in none, suggesting that these viruses may not be a significant differential diagnosis of measles-like rash illness. IgM serology for HHV-6 was positive in 12.7% (28/220) of the sera, however the age group of these patients and the avidity test results suggested that these were not primary infections.

Thus, it would appear that, in South Africa, rash-like illnesses fitting the surveillance criteria for measles were far more likely to be rubella. Nevertheless, the WHO clinical case definition is of value as regards optimizing the sensitivity of the clinical examination, even if there is some loss of specificity. ■

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1. Progress towards global measles control and regional elimination, 1990–1997. *Morbidity and Mortality Weekly Report*, 1998, **47**: 1049–1054.
2. Laboratory diagnosis of measles infection and monitoring of measles immunization. Memorandum from a WHO meeting. *Bulletin of the World Health Organization*, 1994, **72**: 207–211.
3. **Ramsay M, Brugh R, Brown, D.** Surveillance of measles in England and Wales: implications of a national saliva testing programme. *Bulletin of the World Health Organization*, 1997, **75**: 515–521.