

Use and abuse of eight widely-used diagnostic procedures in clinical immunology: a WHO Memorandum*

This Memorandum assesses eight widely-used diagnostic procedures with the aim of establishing their usefulness in patient care. For each procedure, the main methods that can be recommended at present are outlined and their pitfalls discussed. For each procedure, recommendations are made as to the clinical conditions for which the test is essential for diagnosis, the conditions for which the test will help in assessing and monitoring disease activity, and the conditions for which the test is useful for research purposes only.

The recent expansion of clinical immunology has been accompanied by the introduction of a variety of immunological diagnostic tests in clinical laboratories. Owing to increasing demands from clinicians for such procedures, their use has often been exaggerated and there is a general feeling that a better definition of the indications for such tests, made in relation to patients' needs, would be beneficial.

Obviously, immunological tests, like any other diagnostic tests, can be graded according to their usefulness in the care of patients. Some tests are essential for diagnosis, prognosis, or monitoring of disease; many tests are useful but optional for routine investigations; other tests are of interest only for research purposes. In addition, a number of immunological tests are useless in some circumstances.

There is a consensus among immunologists that an effort should be made to reduce their share in the continually increasing cost of medical laboratory investigations. This requires self-limitation in the routine

application of some immunological techniques, without detriment to patient care. The present Memorandum is an attempt to define indications for immunological tests. It has been restricted to the analysis of eight widely-used diagnostic procedures.

For each procedure, two aspects have been considered. First, the main methods currently recommended are outlined and their pitfalls discussed. Technical details are not included since they are readily available (1).^a Second, particular attention has been given to definition of the clinical conditions for which the test is essential for diagnosis, those for which the test is helpful in assessing or monitoring the disease activity, and those conditions for which the test should be used only for clinical research purposes.

The conclusions of this committee reflect the present status of the art and do not preclude future improvements. It was the feeling that the primary goal of clinical immunology should be to help the patient in the most cost-effective manner.

QUANTIFICATION OF IMMUNOGLOBULINS

The assessment of the three major immunoglobulin classes in body fluids involves three laboratory techniques: serum electrophoresis, quantification of major immunoglobulin classes, and immunoelectrophoresis. The measurement of IgE requires more sensitive techniques (see pages 720-721). There is no clinical indication for the measurement of serum IgD.

Quantification of the immunoglobulin classes by

immunological methods is important in a limited number of clinical conditions. This test is too often performed without good indication.

METHODOLOGICAL CONSIDERATIONS

Many methods have been described for the quantitative assessment of immunoglobulins. Two of them are currently of the most value and of comparable accuracy: *a*) radial immunodiffusion (RID) and *b*) nephelometry.

* This Memorandum was prepared by the participants in a working group organized jointly by the International Union of Immunological Societies and the World Health Organization, in Geneva on 18-20 May 1981. The names of the participants are listed on pages 727-728. Reprints should be requested from Chief, Immunology, World Health Organization, 1211 Geneva 27, Switzerland. A French translation of this Memorandum will appear in a later issue of the *Bulletin*.

^a MACKAY, I.R. & RITTS, R.E. *WHO handbook of immunological techniques*. Unpublished WHO document, WHO/IMM. TECH/79.1 (1979).