Editorial

Laboratory Investigation: Are They Always Useful?

Internal medicine is a vast specialty. The complexity of the clinical problems and ever increasing number of sophisticated investigations can be confusing for many physician.

Factors like normal reference range and predictive values of a test need to be considered while interpreting result of a test. Whether a test is being used for screening or detection of a disease is also important.

By convention, the normal range is defined as those values which encompass 95% of population, thatis the value within 2 SD above or below the mean. If this convention is used. However, 2.5% of normal populationwill have values above and 2.5% will have values below the normal. For this reason, it is more precise to describe reference rather than normal ranges.[1]

The phenomenon of clinic-serologic discordance needs emphasis.

Casual interpretation of test result can lead to inappropriate treatment. Making a diagnosis of rheumatic fever in all patients with high ASO titre and institution of Benzathine penicillin is a common incorrect practice. High ASO titre is indicative of recent streptococcal infection. It is not diagnostic criteria for rheumatic fever.[2]

The widal test is misinterpreted by the physicians. This test measures antibodies against O and H antigens of *S.typhi*. But lacks sensitivity and specificity in endemic area. Because many false positive and false negative results occur, diagnosis of typhoid fever by widal test alone is prone to error.[3]

Routine biochemical test may not also indicate underlying disease. Serum levels of creatinine may be raised, reflecting reduced GFR, although serum creatinine values can remain within the reference range inpatients with reduced muscle mass, even when the GFR has fallen by more than 50%. Serum levels of urea are often increased in kidney disease but this analyte has limited value as a measure of GFR since levels increase with protein intake, following gastrointestinal haemorrhageand in catabolic states. Conversely, urea levels may be reduced in patients with liver failure or anorexia and in malnourished patients, independently of changes in renal function.[4]

It is also common to see clinicians ordering a battery of tests only to be confused by result. For example absence of anti DNA antibodies in a patient with suspected SLE. Again mere presence of autoantibodies does not translate into a diagnosis of autoimmune disease. Apart from autoimmune rheumatic diseases, infections and malignancy can trigger a wide variety of autoantibodies.

Clinicians ordering laboratory test should be aware of the performance characteristics of the test ordered and the positive or negative predictive values. The most powerful test in clinical practice are still the meticulous history and physical examination.

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