EDITORIAL

SIGNIFICANCE AND YIELD OF SEROLOGICAL TESTS: ARE WE RELYING TOO MUCH

Despite the great progress made in prevention and treatment, infectious diseases endure to affect the humankind. While traditional pathogen-detection techniques, like culture, have proven their credibility over time, they are often slow and sometimes insensitive. Immunoassay methods have been used for many decades in the detection of antigen from infectious agents and immune response; newer methods have increased the speed of detection. However, serological laboratory diagnosis of infectious diseases is perpetrated with numerous types of elementary glitches. The main basis of the serological tests is to detect the immune response of the patient to the probable infectious agent. Hence, it neither detect the disease directly nor the cause of the disease. The immune response varies from person to person and it may hamper the diagnostic accuracy of the serological tests, because immune system in each person is unique and polyclonal. The response varies among individuals because of the variability of the genetic background; as a result the measurability of antibodies made in response can be forecasted. Moreover, antigenic variants leading to diverse serotypes also play an important role. Therefore, all these basic problems challenge a diagnostician in order to select appropriate investigations for diagnosis, their interpretation and in standardizing serological tests. Hence, it might lead to wrong decisions and the ultimate sufferer will be the patient. There has been an increase in awareness among the clinical and reference laboratories as well as among the companies of commercial test kits. Keeping in the view the problems, it prompted the U.S. National Committee for Clinical Laboratory Standards (NCCLS) to create specific guidelines that address "the generic problems of preparation and characterization of antigens and antibodies, testing using these reagents, and understanding the results." These approved guidelines were made public in December 1994.

When it comes to serological tests, one of the most overrated investigations in our region is the Widal test. It continues to be a controversial test with respect to its diagnostic performance as a reliable test for enteric fever. Among numerous issues, a greater percentage of false positive results are a major problem. Innumerable febrile illnesses such as tuberculosis, malaria and dengue etc; have been shown to be related with high incidence of false positive Widal test. Widal test is commonly practised by some physicians especially in the rural areas which leads to higher misuse of antimicrobials and it has led to increase in the resistance of these important dugs. A personal physician experience of Ciprofloxacin abuse even for a period of 6 months to years has been noted in afebrile patients just on the basis of borderline/positive Widal test. Moreover, in sexually transmitted diseases the direct detection of the pathogen must be preferred e.g. Herpes simplex, Chlamydia, mycoplasma and gonorrhoea infections because there is high chance of false positive and false negative results. Despite all that for the detection of HIV, HBV and HCV serological tests are the preferred initial screening tests.

In conclusion, the utilization of serological tests should be replaced with other modalities which are more reliable and all efforts must be made to find better, cost effective, diagnostically accurate and rapid tests in infectious diseases.

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