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Determination of cut-off titer of ELISA test used in diagnosis of leptospirosis in South Gujarat

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Re-establishing the cut-off titer for IgM ELISA using ROC (Receiver Operating Characteristic) curve in South Gujarat region because cut off titer for these serological tests needs to be re-confirmed at timely intervals keeping in mind the endemicity of leptospirosis in the region. For determining the ROC curve and the cut off titer, 30 healthy peoples from each geographic region like districts Tapi, Navsari and Valsad. 30 patients with diseases other than leptospirosis as well as 30 known leptospirosis cases was taken from South Gujarat region and tested for Panbio ELISA for leptospirosis. All the data obtained by testing was entered into SPSS (Statistical Package for Social Sciences) software for ROC analysis. Analysis showed best cutoff value for Valsad and Navsari 14.5 PANBIO units and for Tapi 16.5 PANBIO units as being higher than kit base cutoff value of 11 PANBIO units. Using the cutoff value recommended by the manufacturer (11 PANBIO units), the sensitivity on paired sera is high (90.8%) and may be used to rule in patients with suspected leptospirosis. However, the poor specificity of the test (55.1%) suggests that using this test in the clinical setting could lead to over diagnosis of leptospirosis and a high frequency of false positivity. Using the high cutoff value generated by ROC curve analysis (15 PANBIO units), the overall accuracy of the test was improved. We recommend by WHO to use such an assay for the diagnosis of leptospirosis if financial resources permit requires area-specific evaluation to determine its clinical use before implementation.

Biography

Summaiya Mullan is currently a Professor and Head of the Department of Microbiology since 2004. She has established state reference laboratory for leptospirosis diagnosis and has been awarded for contribution in leptospirosis control and diagnosis by health minister in 2006. She has established swine flu molecular laboratory at GMC Surat and awarded for control of swine flu by health secretory in 2011. She has also developed state reference laboratory for tuberculosis and has more than 30 paper publications in national and international journals. She has presented oral as well as poster presentations at different international conferences worldwide. She has participated as delegate in many national and internal workshops and conferences.

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