A Preliminary Study on Prevalent Serovars of Leptospirosis among Patients admitted to Teaching Hospital, Kandy, Sri Lanka

Dear Editor,

Leptospirosis is an emerging infectious disease with worldwide distribution.[1] It is endemic in most tropical and subtropical countries. In Sri Lanka, leptospirosis is a notifiable disease and around 1500 cases are reported annually to the epidemiology unit.[2] Almost all the cases are reported on clinical suspicion without laboratory confirmation.[3] Seroepidemiological data on leptospirosis in Sri Lanka is scarce. Hence, this study was conducted to identify circulating serovars among hospitalised patients with pyrexia for more than five days.

From October 2002 to November 2003, all patients admitted to teaching hospital Kandy, with suspected leptospirosis were included in the study. IgM ELISA was performed on all suspected cases and positive samples were confirmed using MAT. Twenty two reference strains belong to serovars australis, ballum, bataviae, bulgarica, canicola, celledoni, copenhageni, cynopteri, djasiman, grippotyphosa, hardjo, hursbridge, javanica, kremastos, medenensis, pomona, panama, robinsoni, shermani, szwajizai, tarassovi, and zanoni were included in MAT analysis. Positive MAT was defined as a single titer of greater than or equal to 400.

Out of 473 suspected cases, 74(15.6%) were positive, 25(5.3%) were equivocal and 374(79.1%) were negative for IgM ELISA test. Age distribution of the IgM positive cases showed an equal distribution among all age groups. Out of the 74 positives 48(64.9%) were males and 26(35.1%) were females. Around one third (35.1%) of these positive cases were either housewives or unemployed males. Common occupational categories were manual labourers (14.9%), agricultural workers of farmers (10.8%) and soldiers (5.4%). In MAT analysis, 31 serum samples showed anti-leptospira antibodies of which 18 (24.3%) had a MAT titer greater than or equal to 400. The serovars identified included medenensis (4), australis (2), ballum (2), canicola (1), celledoni (1), cynopteri (2), hardjo (3), pomona (1) and robinsoni (2).

Our findings showed that the predominant serovars among the study sample were serovar medenensis and hardjo. Interestingly serovars copenhageni, which belongs to serogroup icterohaemorrhagia was not detected in the samples. Previous studies have identified serogroup icterohaemorrhagia as the commonly circulating serovar causing human infection in Sri Lanka.[4] Accordingly, disease control activities targeted the rodent population.[5] The present study raises the probability that other peridomestic animals may be the reservoirs for human leptospirosis in Sri Lanka. In addition, the traditional target group (farmers) accounted for only a part of risk group identified in the study.

According to these observations it is evident that epidemiology of human leptospirosis in Sri Lanka is either changing or not yet properly understood. We recommend a prospective study with proper sample size to provide evidence, which could be used for diagnosis, control, and preventive activities.

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References

Dear Editor,

We read with interest the article entitled "Ciprofloxacin breakpoints in enteric fever—time to revise our susceptibility criteria" by Rodrigues et al., published in Jan-Mar 2008 issue of the Indian Journal of Medical Microbiology. The article is thought provoking but certain critical aspects have been overlooked, which if mentioned would be enriching for the various investigators and decision makers in this crucial area.

Firstly, this study only mentions the number of nalidixic acid resistant strains isolated in 2005, but does not mention the total number of *Salmonella typhi* isolates from which they have been characterized. This does not allow us to calculate the prevalence of nalidixic acid resistant strains in a geographical area, which in this study happens to be Mumbai. Secondly, the methodology used in obtaining the results has not been mentioned. The MIC values are known to vary significantly with the methodology used. [2] To revise the susceptibility criteria in our country all the centers working on *S. typhi* should follow same methodology.

Thirdly, this study does not comment on the clinical outcome of the cases from which the 96 nalidixic acid resistant strains have been isolated. The increased MIC values of ciprofloxacin in *S. typhi* in India have been reported since many years, [3,4] but the important issue that has not been adequately addressed in many of these studies is the extent of clinical failure. Fourthly, this article mentions that the attainable AUC of ciprofloxacin is 31.06 μg/mL with 750 mg twice daily dose of ciprofloxacin, which is a satisfactory PK-PD value for the treatment of *S. typhi* enteric fever. However, there is evidence to suggest that free drug AUC and not the total AUC is more predictive of clinical success. [2] Considering plasma protein binding of approximately 30% for ciprofloxacin, for 750 mg b.d. daily dose, AUC free gets reduced to 22, and at MIC = 0.25μg/mL, AUC free:MIC ratio becomes 88.[5] This implies a dose of 750 mg b.d. daily would also be inadequate, as the recommended AUC free:MIC ratio for gram negative microorganisms is >100.

References


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