Reply from the Authors

Sir,

We thank Drs. S Shivakumar and B Krishnakumar for reacting to our review paper. The current status of microagglutination test (MAT) in leptospirosis brought about by them in the letter is appreciated.

The tabular approach and interpretation of results, as mentioned, according to varying MAT titres is a standard practice in any laboratory situated in a leptospirosis-endemic area including at ours at JIPMER, Pondicherry. We too take single high titre of 1:400 as positive.

Nevertheless, the problem with MAT will be one of availability of facility, as mentioned in our original article. Thus, ELISA IgM will continue to play a positive role in the present setting (in India).

We have however, some reservation in equating slide-agglutination test (SAT) with ELISA IgM in interpreting the results since ELISA IgM as test is definitely superior to SAT.

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Received : 26.10.2005; Accepted : 6.2.2006

REFERENCE


Polymerase Chain Reaction in the Diagnosis of Leptospiral Infection

Sir,

The aims of our study were to identify cases of leptospiral infection in patients admitted with fever, myalgia and jaundice and to institute treatment before complications set in. We have used Polymerase Chain Reaction (PCR) as a laboratory method for the early diagnosis of leptospirosis infection.

A total of 200 patients who presented with fever, myalgia, jaundice and conjunctival congestion were studied over one year (2002-03). Detailed histories were taken from all patients and a screening protocol was prepared using available medical data and clinical examination findings. These patients were also screened for malaria, dengue and typhoidal fever.

In 50 patients the clinical picture and abrupt presentation were suggestive of leptospiral infection and in 34 cases (68%) polymerase chain reaction for leptospira was found positive within 5 days of the illness. 16(32%) patients presented in the second week of the illness and had complications of renal failure, neuroparalysis, hepatic failure and bleeding tendencies. In them, polymerase chain reaction for leptospira was negative, however, IgM antibody assay was found positive confirming the diagnosis of leptospirosis infection.

Polymerase chain reaction: The technique employed in our study was a simple, rapid and flexible one. In cases where the clinical picture was suggestive of leptospiral infection, the patient’s serum was collected in EMJH medium and centrifuged. The sample was added to a master mix and the leptospiral DNA was fixed to the PCR primers covering all leptospiral strains. The amplified DNA was subjected to electrophoresis and identified as a golden fluorescence by ultraviolet light on agar plates. This technique is 100% specific for pathogenic leptospira. A positive test leads to a definite diagnosis of infection, early treatment and prevention of fatal complications like hepatorenal syndrome and renal failure. Polymerase chain reaction by DNA amplification has a 100% specificity and sensitivity for the diagnosis of leptospiral infection.

Leptospiral infection is a zoonotic disease rampant in our population during the rainy season. The clinical manifestations range from a mild asymptomatic illness to a fulminant hepatorenal failure which may be fatal if the diagnosis has been delayed. Hence the early diagnosis of this potentially dangerous disease is imperative in preventing fatalities caused by leptospirosis. The organism responds readily to antibiotics like crystalline penicillin, doxycycline and third generation cephalosporins. In complicated cases life supporting measures like dialysis, hydrocortisone and inotropic drugs may be included in the treatment schedule.
A 14 years boy presented with gradually progressive acral enlargement and pain in both hands and feet of 2 years duration. The pain was moderate to severe and was partially relieved with rest. He had neither history of rapid height gain, coarsening of facial features, headache or visual disturbance suggestive of pituitary pathology nor any suggestion of pulmonary, cardiovascular or gastrointestinal disease. No other sibling or family members were afflicted by similar complaints. On general examination, the lower part of both upper and lower limbs was thickened, and hands and feet enlarged with palmoplantar hyperhidrosis. There was gross clubbing of all the digits without cyanosis. Systemic examination was unremarkable. Serum biochemistry including calcium and thyroid profile were normal. X-ray of the legs showed marked thickening of the periosteum and non-visualization of the marrow spaces and that of the skull was unremarkable with normal appearing sella. The 99mTc MDP bone scan showed markedly increased uptake in the diastal ends of forearms and legs. The overall clinical profile was characteristic of pachydermoperiostitis with no discernible secondary causes. He was managed with intravenous pamidronate (60 mg IV) with which the pain subsided remarkably and is planned for repeated administration. One of the main concerns in the management of this condition is the pain associated with the bone resorption and periosteal thickening of various bones. In the secondary form, treatment of the underlying condition ameliorates the symptoms in at least a minority of the patients. Usual line of treatment includes use of non-steroidal anti-inflammatory drugs and corticosteroids for pain relief. Bisphosphonates, especially pamidronate has been used extensively in various other conditions like lytic lesions,2 secondaries, with varying success in HPOA associated with cystic fibrosis. In pachydermoperiostitis, bisphosphonates have been used in meliorating pain.3 In our case the patient reported significant improvement in pain after administration of a single dose of intravenous pamidronate (60mg) and no untoward effects (hypocalcemia) were observed. The dose may be repeated on follow-up depending on the clinical course. The rationale of bisphosphonate use in pachydermoperiostitis is an extension of their pharmacological action - osteoclast inhibition and anti-resorptive effect. Also, bisphosphonates are now being increasingly used in the pediatric age group for various other metabolic bone disorders viz fibrous dysplasia, osteogenesis imperfecta. Patients with osteogenesis imperfecta improved (reduction in fractures) without comprising linear growth.

References