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CSFC-Reactive Protein Estimation for Bedside Diagnosis of Pyogenic Meningitis

Pyogenic meningitis is a major pediatric problem all over the world, especially in developing countries like India. Antibiotics have reduced the mortality from almost 100% to 8%-30%(1). Early and reliable diagnosis is the key to successful outcome. The rapid diagnostic tests including counter immunoelectrophoresis and enzyme linked immunosorbent assay are helpful in establishing etiologic diagnosis(1,2). But these tests are costly, difficult to perform and not easily available. In such circumstances, the estimation of cerebrospinal fluid C-reactive protein concentration provides a new dimension to the specific diagnosis of meningitis.

One hundred children suffering from meningitis and other neurological disorders admitted over a period of one year were studied. The patients admitted with suspicion of meningitis that later proved to be having either tubercular or pyogenic meningitis were included in the study group. Control group consisted of patients with febrile convulsions, acute respiratory tract infection with meningismus and acute flaccid paralysis. A qualitative slide test utilizing latex agglutination method was used. The minimum concen-

tration of C-reactive protein that can be detected by this kit is 1.2 mg/dL. Observations were tested statistically by the Chi-square test and Student 't' test, and for sensitivity, specificity and predictive value of cerebrospinal fluid C-reactive protein in different types of meningitides.

We found that C-reactive protein test was able to detect 80% cases of pyogenic meningitis and 15% cases of tubercular meningitis and was negative in all controls. The positive predictive value of the test for pyogenic and tubercular meningitis was 100%. Similarly, negative cerebrospinal fluid C-reactive protein test was 100% specific for absence of pyogenic and tubercular meningitis. Cerebrospinal fluid culture showed growth in 16 cases (52%) with pyogenic meningitis (*Table I*).

This test appears to be promising in view of its rapidity, simplicity and relative low cost(3,4). The present study was planned to verify this contention and evaluate its relative importance amongst conventional diagnostic methods. In this study, 80% cases of pyogenic meningitis revealed a positive latex agglutination test for C-reactive protein, there was a striking absence of any positive case in the non-meningitis group.

Our findings show that estimates of C-reactive protein in cerebrospinal fluid is a valuable, rapid, bedside diagnostic test for pyogenic meningitis with reasonably good sensitivity and 100% specificity and positive

TABLE I—*Diagnostic Utility of C-Reactive Protein (CRP) Test in Cerebrospinal Fluid.*

Meningitis	N	CRP +ve	CRP -ve	Sensitivity	Specificity	Positive Predictive value
Pyogenic	30	24	06	80	100	100
Tubercular	40	06	34	15	100	100
Control	30	-	30	-	-	-
Total	100	30	70	-	-	-

predictive value. Absence of C-reactive protein rather than its presence is more important for the diagnosis of tubercular meningitis(3-5). Maximum prediction of pyogenic meningitis can be made if the test is positive. Additionally this test virtually rules out the possibility of tubercular meningitis. However, recommending it for routine clinical application needs further evaluation utilizing accurate and precise quantitative assay for measuring C-reactive protein levels in the cerebrospinal fluid.

Ajay Gaur,
S. Venkata Seshan,
Department of Pediatrics,
Gajra Raja Medical College &
Associated Kamala Raja Hospital,
Gwalior (M.P.) 747 001, India.
E-mail: drajaygaur@rediffmail.com

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Lateral Sinus Thrombosis with Neurocysticercosis

Cysticercosis is a frequent parasitic infection in developing countries and is related to poverty, ignorance and pig rearing practices in community(1). Variety of structural involvement of central nervous

system and orbit have been reported but cysticercus involving lateral sinus causing thrombosis is extremely rare.

A 13-year-male child presented with complaint of headache for 3 months. Headache was insidious in onset, localized to right temporal and frontal region and present throughout the day. There was no history of fever, vomiting, photophobia, blurring of