

Clinical Profile of Meningitis With Special Reference To Correlation of Csf Parameters With Mean Duration of Hospital Stay and Developing Residual Neurological Deficit at Discharge.



Medicine

KEYWORDS :

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ABSTRACT

In this clinical study, 50 patients of meningitis were studied for their clinical profile, laboratory parameters, csf analysis & neuroimaging findings. Our present clinical study showed that csf parameters is not only used for etiological diagnosis of meningitis but also that give information about mean duration of hospital stay and developing residual neurological deficit at discharge.

INTRODUCTION

Meningitis is the inflammation of the meninges limited to the subarachnoid space. Meningitis itself can be divided into bacterial, viral which presents more acutely and the granulomatous type which include tubercular and fungal predominantly. Diagnosis of meningitis depends predominantly on cerebrospinal fluid analysis. The morbidity and mortality due to meningitis still remains very high in spite of advent of newer antibiotics and key to prevent adverse outcome depends on early diagnosis and treatment. This study endeavors to observe the clinical profile of all patients of meningitis and to study the factors having adverse outcome.

MATERIALS AND METHODS

We studied 50 cases of meningitis admitted in medical wards of our institute during september-2013 to october-2015. Our aims and objectives were to study clinical profile of meningitis and to determine the correlation of csf parameters with mean duration of hospital stay and developing residual neurological deficit at discharge.

CONCLUSION

In this clinical study, 50 patients of meningitis were studied for their clinical profile, laboratory parameters, csf analysis. The chance of developing residual neurological deficit and mean duration of hospital stay depends upon raised csf cell count (>5/cumm), raised csf protein (>45 mg/dl), raised csf glucose (>60 mg/dl) and etiology of meningitis. It is concluded that this study highlights importance of csf parameters for etiodiagnosis of meningitis as well as getting the idea of staying in hospital & possibility of developing residual neurological deficit at the time of discharge.

INTRODUCTION

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MATERIALS AND METHODS

We studied 50 cases of meningitis admitted in medical wards of our institute during September-2013 to October-2015. Our aims and objectives were to study clinical profile of meningitis and to determine the correlation of CSF parameters with mean duration of hospital stay and developing residual neurological deficit at discharge.

All patients aged above 12 years with clinical symptoms and signs (fever, headache, vomiting, convulsion, neck rigidity, Kernig and Brudzinkis signs, altered sensorium, focal neurological deficit), CSF picture, routine laboratory parameters and radiological features consistent with diagnostic meningitis were included in our study. Those excluded from our study were patients with suspected meningitis but normal CSF report, critically ill patients requiring ICU and pregnant patients.

RESULTS AND DISCUSSION

Of total 50 patients studied, 15 patients were having residual neurological deficit at discharge time where cognitive impairment (18%), cranial nerve palsies (8%), hemiparesis (2%) and paraparesis (2%).

There is a significant association between CSF proteins and developing residual neurological deficits where CSF protein of >45 mg/dl, proportion of residual neurological deficit was found to be the highest (31.2%, 15 out of 48) in which most common etiological diagnosis were of tubercular & pyogenic meningitis.

CSF glucose <40 mg/dl was present in 100% cases of pyogenic meningitis followed by 59.5% cases of tubercular meningitis. CSF glucose normal (40-60 mg/dl) as well as increased (>60 mg/dl) level were found in cases of Viral meningitis.

Maximum mean duration of hospital stay (19 days) as well as maximum proportion of Residual neurological deficit (62.5%, 5 out of 8) were seen in group of patients with CSF Glucose >60 mg/dl.

TABLE-1.

CSF protein (mg/dl) CSF Cells/ cum CSF Glucose	Tubercular meningitis (n=42)	Pyogenic meningitis (n=2)	Cryptococcal meningitis (n=2)	Viral meningitis (n=4)	Mean duration In Hospital stay (Days)	Residual Neurological Deficit at discharge

<45mg/dl <5cells/ cumm <40mg/dl	0% 23.8%(10) 59.5(25)	0% 0% 2%(100)	0% 0% 50%(1)	50% (2) 50%(2) 0%	10 11 11	0 2 8
45-150mg/ dl 6-100 cells/ cum 40-60mg/dl	43% (18) 52.4%(22) 26.2%(11)	50% (1) 50%(1) 0%	50% (1) 50%(1) 50%(1)	50% (2) 25%(1) 50%(2)	13 13 9	6 8 2
>150mg/dl >100cells/ cumm >60mg/dl	57% (24) 23.8(10) 14.3%(6)	50% (1) 50% (1) 0%	50% (1) 50% (1) 0%	0% 25%(1) 50%(2)	15 14 19	9 5 5

From all of the above findings we can summarize that CSF glucose and CSF protein can be used for etiodiagnosis of meningitis as well as getting the idea of staying in hospital & possibility of developing residual neurological deficit at the time of discharge.

TABLE-2

Type of Meningitis	Mean duration in hospital stay (Days)	Residual neurological deficit at discharge
Tubercular	18	11
Pyogenic	12	1
Cryptococcal	14	1
Viral	10	1

Overall mean duration of hospital stay (18 days) as well as residual neurological deficit were found to be maximum in patients of tubercular meningitis probable reason behind this could be subacute to chronic onset of the disease.

CONCLUSION

In this clinical study, 50 patients of meningitis were studied for their clinical profile, laboratory parameters, CSF analysis. The chance of developing residual neurological deficit and mean duration of hospital stay depends upon raised CSF cell count (>5/cumm), raised CSF protein (>45 mg/dl), raised CSF glucose (>60 mg/dl), & etiology of meningitis.

It is concluded that this study highlights importance of CSF parameters for etiodiagnosis of meningitis as well as getting the idea of staying in hospital & possibility of developing residual neurological deficit at the time of discharge. HIV is a detrimental prognostic factor for residual neurological deficit.

REFERENCE

1. Josef brudzinski and vladimir mikhailovich kernig: signs for Diagnosing meningitis. 2010 mar; 8(1): 13–17. Doi:10.3121/cmr. 2010.862 pmcid: pmc2842389
2. Greenwood b (june 2006). "100 years of epidemic meningitis in westAfrica - has anything changed?". Tropical medicine & international Health: tm & ih (pdf) 11 (6): 773–80. Doi:10.1111/j.1365-3156.2006.01639.x. Pmid 16771997.
3. Ginsberg I (march 2004). "difficult and recurrent meningitis". Journal Of neurology, neurosurgery, and psychiatry. 75 suppl 1 (90001): i16–21. doi:10.1136/jnnp.2003.034272. Pmc 1765649. Pmid 14978146.
4. Sáez-llorens x, mcracken gh (june 2003). "bacterial meningitis in Children". Lancet 361 (9375): 2139–48. Doi:10.1016/s0140-6736(03) 13693-8. Pmid 12826449.
5. Tunkel ar, hartman bj, kaplan sl et al. (november 2004). "practice Guidelines for the management of bacterial meningitis".clinical Infectious diseases 39 (9): 1267–84. Doi:10.1086/425368. Pmid15494903.