

Incidence of Acute Pyogenic Meningitis in Infants and Children

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118 cases of acute pyogenic meningitis were admitted in the department of Paediatrics Liaquat Medical College, Hospitals Jamshoro/ Hyderabad in one year period with prevalence of 1.57% of the total admissions. After selecting the cases on clinical ground we proceeded further to confirm the diagnosis by cerebrospinal fluid cytochemical analysis, gram staining,, culture and sensitivity and detection of the antigen of micro-organism by latex agglutination test.

Key words: Pyogenic meningitis, paediatrics

Harpin (1803) used the term meningitis for the first time in connection with the inflammation of meninges, caused by the head trauma in army soldiers (Neal et al, 1932). Meningitis is an inflammation of the coverings of the brain, spinal cord, and the fluid residing in the space which in enclosed and also that in the ventricles of the brain. When the pia and archnoid matter is involved the term "leptomeningitis" and for dura "pachy meningitis" is used. Pyogenic meningitis is with the evidence of pathogens in the cerebrospinal fluid (Harter, Donald H et al, 1987).

Materials and methods

The study conducted from October to September (one year) total number of patients admitted were 7480, constituting (118/7480) 1.57% of total admissions 10.16% (31/305) of all the neonates admitted with acute pyogenic meningitis, 1.21% (87/7175) of post neonatal group admitted with acute pyogenic meningitis. The patients selected initially on clinical grounds and then investigated according to our proposed protocol including blood examination for complete picture and blood sugar for comparison with CSF sugar, cytochemical analysis and gram staining, culture and sensitivity of CSF, Swab from Throat, Ear, Umblicus and skin for C/S and latex agglutination test. The patients were treated to our wards protocol accordingly discharged and a follow-up was done for two years. Which is not discussed in this paper.

Results

118 cases of Acute Pyogenic Meningitis were studied. Most of our patients came from interior Sind as well as Hyderabad without any significant concentration in any one locality. The patients belonging to far flung areas, would not reach our Hospitals therefore referred to be treated at concerned District Hospitals and thus not registered with us (Fig- 5-1 and Table I)

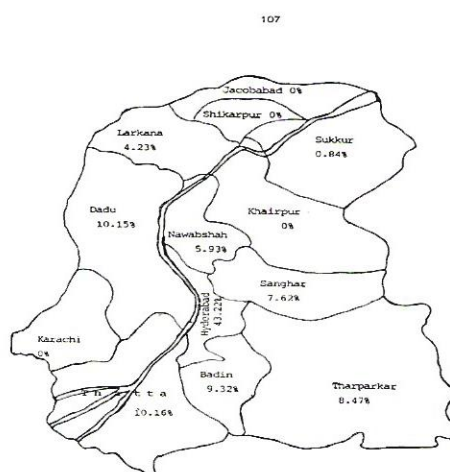


Figure No.5-1. Showing the epidemiological pattern of acute pyogenic meningitis admitted in Paediatrics Wards of Liaquat Medical College Hospitals Jamshoro/Hyderabad during October, 1990 to September, 1991.

Table.1: Epidemiological pattern of acute pyogenic meningitis in Paediatrics.

Districts	n	%age
Hyderabad	51	43.22
Dadu	12	10.16
Thatta	12	10.16
Badin	11	9.32
Tharparker	10	8.47
Sanghar	09	7.62
Nawabshah	07	5.93
Larkana	05	4.23
Sukkar	01	0.84
Khair pur (mirs)	00	0.00
Jacobabad	00	0.00
Karachi	00	0.00

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Total numbers of patients admitted during study period were 7480, of which 305 were neonates and 7175 were beyond neonatal period. The proved cases of acute pyogenic meningitis were 118, of which 31 were neonates and 87 were beyond the neonatal period (Table-2).

Table 2: Statement showing the number of total admission and cases of acute pyogenic meningitis.

	=n	Neonates	%age	Beyond neonates period	%age
No. of admission from Oct. 90 to Sep t. 91.	7480	305	4.07	7175	95.93
Cases of acute pyogenic Meningitis (Studied)	118	31	26.27	87	73.72
Clinically suspected cases who refused for lumbar puncture.	10	07	70.00	03	30.00
LAMA cases were not included in study results	22	12	57.54	10	45.45

In cases of neonatal meningitis 17 male and 14 were female. Beyond neonatal period 49 male and 38 were female with a ratio of 1.2 :1 in total(Table-3).

Table 3:- Prevalence of acute pyogenic meningitis related to the age and sex.

	Age		Gender		Ratio
	=n	%age	Male	Female	
Neonates	31	26.27	17	14	1.2:1
2-12 months	46	38.98	26	20	1.3:1
2-5 years	21	17.79	12	09	1.3:1
6-12 years	20	16.94	11	09	1.2:1
Total	118	100.00	66	52	1.2:1

Majority of cases belonging to low socio-economic class (Table 4).

Table 4: Socio-economic status of patients with acute pyogenic meningitis studied.

	Monthly Income in Rupees		
	Above 2000	Below 2000	Total
Neonatal period (total)	09	22	31
Percentage %	29.04%	70.96%	
Post-Neonatal Period (Total)	19	68	87
Percentage %	21.84%	78.16%	

In neonatal age group on basis of weight there was no remarkable difference, but beyond neonatal age group the incidence was remarkable in Malnourished children according to modified Gomez classification (Table-5).

Table 5: Weight of neonates according to modified Gomez classifications in patients beyond neonatal age period.

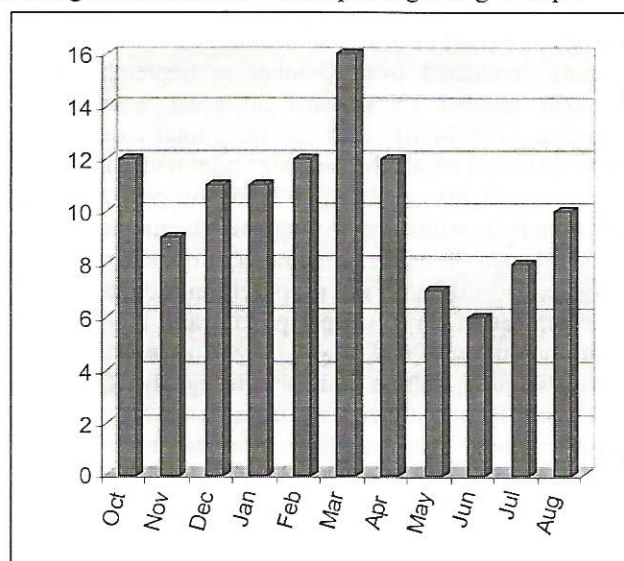
	Weight less than 3500gm	Weight more than 3500gms
Total number	16	15
Percentage	51.62	48.32

Table 6: Nutritional status

	Normal	Nutritional status		
		PCM-I	PCM-II	PCM-III
Total nos.	23	27	21	16
%age	26.43	31.03	24.13	18.29

The peak prevalence was seen in the months of February, March, April, August and October, that is the late winter, early summer and autumn (Figure-2).

Fig 2. Seasonal variation, cases of acute pyogenic meningitis studied from Oct. upto beginning of Sept.



Discussion

Acute Pyogenic Meningitis is not an uncommon disease in children and is a common Paediatrics Emergency. 118 cases of acute pyogenic meningitis were admitted in our study period from October to September, constituting 1.57% of the total admission, 10.16% (31/305) of all neonatal age group admitted with acute pyogenic meningitis and 1.21% (87/7175) a post neonatal age group admitted with acute Pyogenic Meningitis. This result correlate with Butler Ian J et al 1974. Who reported meningitis in 7% neonates and 1.5 Post neonatal age of

total hospital admissions. The prevalence under one year of age was 65.25% of all the cases of meningitis, which is same as reported by Akbani Y et al 1988, which was 65.2%. The prevalence in male babies was higher with a ratio of 1.2:1, confirming the generally observed male predominance as reported by the various studies, like Akbani Y et al 1988, Louvois J et al, 1991. This is reported to be due to location of gene for synthesis of gamma globulin on the X Chromosomes and the male possess only single X chromosome. Although we came across the disease though out the year in our study, yet slightly increased prevalence was observed from February to April and August to October, which tallies with the result of Broome CV, 1987, Azubiuck, 1990 and Carter PE et al, 1990.

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