

TABLE III.—SIMULTANEOUS BLOOD AND CEREBROSPINAL FLUID AMPICILLIN LEVELS IN 20 PATIENTS WITH BACTERIAL MENINGITIS

Route and frequency of administration	Total daily dose (mg./Kg./day)	Individual dose (mg./Kg.)	Time of CSF and blood sampling after drug given (hr.)	CSF level (mcg./ml.)	Blood level (mcg./ml.)	Ratio (CSF/blood)
Intravenously every 4 hours.....	150	25	1	0.2	9.0	0.022
Do.....	150	25	1	0.3	10.0	0.030
Do.....	160	27	1	0.5	7.0	0.071
Do.....	160	27	1	0.6	10.0	0.060
Do.....	150	25	1	0.7	15.0	0.047
Do.....	150	25	1	0.7	12.0	0.058
Do.....	150	25	1	0.7	11.0	0.064
Do.....	150	25	1	0.8	15.0	0.053
Do.....	150	25	1	0.9	12.0	0.075
Do.....	150	25	1	1.1	10.0	0.109
Do.....	150	25	1	1.1	9.4	0.117
Do.....	250	42	1	1.2	20.0	0.060
Do.....	160	27	1	1.4	21.0	0.067
Do.....	150	25	1	1.6	15.0	0.107
Do.....	145	24	1	2.1	21.0	0.100
Do.....	150	25	1	2.3	20.0	0.115
Do.....	150	25	1	2.5	14.0	0.179
Do.....	165	28	1	4.1	27.0	0.152
Do.....	150	25	1	6.1	16.0	0.381
Do.....	250	42	1	8.4	27.0	0.311
Mean total.....				1.9	15.0	¹ 0.109

¹ 10.9 percent.

TABLE IV.—ETIOLOGY OF ACUTE MENINGITIS: STUDY, MATCHED CONTROL, AND 5-YEAR REVIEW PATIENTS

	Study patients		Matched control patients		5-year review patients	
	Number	Percent	Number	Percent	Number	Percent
<i>H. influenzae</i>	16	57	12	48	88	46
<i>N. meningitidis</i>	8	29	7	28	8	4
<i>D. pneumoniae</i>	1	3	4	16	35	19
Unknown etiology.....	3	11	2	8	59	31
Total.....	28	100	25	100	190	100

PART II. CLINICAL STUDIES

The clinical progress of three groups of patients was evaluated: (1) 28 patients with bacterial meningitis who were treated with ampicillin during 1964 and 1965 (study patients); (2) 25 matched control subjects treated by conventional methods during 1965; (3) 190 patients treated by conventional methods during the 5 year period 1959 through 1963 (5 year review patients).

Description of study patients. During the nine month period from July, 1964, to April, 1965, 28 patients admitted consecutively to Ben Taub General Hospital with the diagnosis of acute bacterial meningitis due to *H. influenzae*, *D. pneumoniae*, *N. meningitidis*, or to an unknown agent were enrolled in a study designed to determine the efficacy and safety of the treatment of meningitis with ampicillin. One case of meningococcemia without meningitis was included in the study before it became apparent that the patient did not have meningitis. The blood culture was positive but the bacteriologic studies of the cerebrospinal fluid were negative. One patient was considered to have definite meningococcemia and meningitis despite negative blood and cerebrospinal fluid cultures. The direct smear of the spinal fluid revealed gram-negative intracellular diplococci and the patient presented the classical clinical picture of meningococcemia and meningitis. The etiologic agent was considered to be *H. influenzae* type B in 16 of the 28 patients, meningococcus in 8, and pneumococcus in 1 (Table IV). Three patients were classified as having meningitis of unknown etiology since a causative agent could not be positively identified in the cerebrospinal fluid or blood. All of the patients were between 3 months and 9 years of age. The ages, sex, and race of the patients are shown in Table V.