

TABLE IV.4.—SINGLE VERSUS MULTIPLE ANTIMICROBIAL THERAPY IN ACUTE BACTERIAL MENINGITIS¹

Type of bacteria isolated	Therapeutic regimen selected						
	Ampicillin alone		Ampicillin+chloramphenicol+streptomycin		Total patients treated ²		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Percent
Meningococci.....	45	1	35	3	80	4	5
H. influenzae.....	36	0	32	2	68	2	3
Pneumococci.....	23	4	25	6	48	10	21
Purulent, unknown.....	25	0	19	2	44	2	5
Total.....	129	5	111	13	240	18	-----
Case fatality (percent).....	3.9		11.7		7.5		

¹ Table was computed by type of causative organism. Los Angeles County General Hospital, 1 year experience to July 1966.

² Patients excluded: infants <2 months of age, 15; unusual organisms, 15; error in treatment assignment, 9; endocarditis, mechanical defect, 6; total exclusions, 45 with 11 deaths.

TABLE IV.5.—NEONATAL MENINGITIS¹

[Distribution of etiology]

Gram-negative.....	45	Gram-positive.....	13
Escherichia coli.....	19	Streptococci.....	6
Paracolon.....	12	α.....	1
Klebsiella-Aerobacter.....	6	β.....	3
Proteus.....	3	γ.....	2
Salmonella.....	2	Listeria.....	4
Mimae.....	1	Diplococcus pneumoniae.....	1
Hemophilus influenzae.....	1	Staphylococcus albus.....	2
Pseudomonas.....	1		
	Unknown: 13		

¹ Los Angeles County General Hospital, 1961-65.

While sensitivity studies are pending, the above antimicrobial agents should be administered in doses of 75 to 150 mg. per kg. i.v. per day of ampicillin and 15 mg. per kg. per day of kanamycin given intramuscularly. Occasionally, intrathecal therapy with polymyxin or kanamycin is necessary; this route is invariably required when polymyxin is the agent selected. Although ampicillin should be given by the intravenous route, it is not advisable to use this route for kanamycin. At times, dosages in excess of those mentioned above may be necessary, but careful attention to signs of renal toxicity and full awareness of the potential ototoxicity of kanamycin are necessary. It is reassuring to note that the latter agent, contrary to expectations, has not been associated with appreciable ototoxicity in the newborn period when used carefully within accepted dosage limits (2).

OTHER THERAPEUTIC CONSIDERATIONS

The use of proper methods of monitoring the patient's condition (such as indwelling central venous catheters and frequent blood pressure determinations in shock), during the course of the infection, is essential. Attention should be paid to complications of both disease and therapy. An important, but often overlooked, procedure is a second spinal fluid examination after 24 or 36 hours of therapy. This is the only method of adequately evaluating proper *in vivo* response to the particular antimicrobial agent selected. With the exception of infections in the newborn period, no organisms should be seen after 24 hours. Provided that effective antimicrobial therapy has been selected and proper dosage given, cultures obtained after 24 to 36 hours of treatment should be sterile, even in cases of neonatal infection.

Although enzymes of various types have been advocated for intrathecal use in patients with unusually purulent spinal fluid, we believe that there are insufficient experimental data available at present to justify their general use, even in the presence of grossly purulent spinal fluid.

Intrathecal administration of antibiotics has also been advocated, although, with the exception of polymyxin which does not reach the spinal fluid in therapeutic concentration after intramuscular administration, there is no evidence that mortality or morbidity is decreased by the use of this route.