

in this group than in the premature infants whose membranes had ruptured at birth. Routinely, these infants had been placed on antibiotics shortly after birth because of assumed exposure to infection. The role of antibiotics in this higher mortality was questioned. A comparative study of these infants on different treatment schedules was conducted from March, 1958, to February, 1959. This is a report of that study.

METHOD

All premature infants delivered in the birth suites of the Los Angeles County Hospital after spontaneous rupture on the fetal membranes for twenty-four hours or more were assigned to one of four groups according to the time of admission to the premature center. Group 1 received no antibiotics. Group 2 received chloramphenicol,¶ 100 to 165 mg. per kilogram of body weight per day intramuscularly. Group 3 received procaine penicillin, 150,000 to 600,000 units per day, and streptomycin, 50 mg. per kilogram of body weight per day. Group 4 received all three antibiotics in the same dosage previously mentioned. Half of the daily dose of each antibiotic was given intramuscularly every twelve hours.

RESULTS

Table 1 lists the results of the study. The mortality rates in the nontreated group and the group treated with penicillin and streptomycin are similar. The mortality in both groups given chloramphenicol is strikingly higher than that in the groups not receiving it. The higher mortality is most obvious in the infants weighing 2001 to 2500 gm., that of the babies given chloramphenicol being 45 per cent and that in those not given it 2.5 per cent.

TABLE 1.—COMPARISON OF MORTALITY

Birth weight (grams)	Group 1 (no treatment)		Group 2 (chloramphenicol)		Group 3 (penicillin and streptomycin)		Group 4 (penicillin and streptomycin and chloramphenicol)	
	Total infants	Percent-age who died	Total infants	Percent-age who died	Total infants	Percent-age who died	Total infants	Percent-age who died
<1,000.....	1	100.0	0	0	3	100	1	100
1,001-1,500.....	5	40.0	5	100	2	0	4	100
1,501-2,000.....	9	22.0	9	67	4	75	11	90
2,001-2,500.....	17	5.9	16	50	24	0	15	40
Total.....	32		30		33		31	
Average.....		19.0		60		18		68

The general care of the babies in this study followed the established routine for the nursery. All babies came from the socioeconomic group cared for by the county hospital. All babies had ruptured fetal membranes for twenty-four hours or longer before delivery. Analysis for sex and race showed no significant difference among the groups.

CLINICAL STUDY

The clinical histories of the infants were reviewed. Figure 1 lists the common physical signs and symptoms and presents the percentage in each group who were symptomatic. The two groups given chloramphenicol were similar and were combined to simplify the presentation. All the signs and symptoms but jaundice were present in markedly increased numbers in the babies receiving chloramphenicol. The higher number of gastrointestinal symptoms in the infants treated with penicillin and streptomycin as compared to the nontreated group should be noted. The clinical courses of the chloramphenicol-treated babies who died were strikingly similar. The symptoms appeared in a typical order. Figure 1 lists the overage age at onset of each symptom for the chloramphenicol-treated groups.

¶In the form of Chloromycetin Intramuscular, Parke, Davis and Company, Detroit, Mich.