

determined by analyzing capillary blood according to the method of Glazko(7).* This method measures both active and inactive metabolites of chloramphenicol as total nitro compounds.

Timed urine specimens were collected by plastic bags from some of the infants. These were analyzed for chloramphenicol content by microbiologic assay against *Shigella sonnei*(8), as well as by chemical determination for total nitro compounds.*

Microchemical analyses for serum sugar, BUN, and potassium levels were performed at the start of treatment, at 24 hours, and at 96 hours in the group of infants receiving chloramphenicol 25 mg/kg/day. Serum bilirubin determinations were done on any infant who developed jaundice.

MICROCRYSTALLINE CHLORAMPHENICOL†

Figure 1 shows the average blood level of total nitro compounds obtained in premature infants 1 to 6 days old given microcrystalline chloramphenicol, 10 mg/kg every 12 hours intramuscularly. The average level is low and probably inadequate for 12 to 24 hours after the start of treatment. From then on, it gradually rises as the nitro compounds accumulate. A tendency for the level to plateau may be noted during the fourth day of treatment. Of the 13 babies studied, 11 reached therapeutic levels of 10-20 μ g/cc(9), and showed no toxic symptoms. One infant failed to reach a therapeutic blood level. One infant accumulated nitro compounds to high levels and developed symptoms of chloramphenicol toxicity.

This infant was 3 days old at the start of treatment and weighed 1,980 gm. On the third day of treatment, he was noted to be voiding very little. During the next 24 hours he became limp and lethargic, at which time his blood level of nitro compounds had risen to 78 μ g/cc. Following the omission of one dose, the blood level fell to 52, and his symptoms became less severe. Treatment was continued for 3 more days, during which time he was anorexic and somewhat listless. His symptoms disappeared 3 days after treatment was stopped.

Figure 1 also shows the average blood level of nitro compounds in 5 premature infants 12 to 67 days old on the same dosage schedule, 10 mg/kg every 12 hours intramuscularly. Of the 5 infants, 4 had been tested previously in the 1- to 6-day-old group. The absence of accumulation in this group is clearly demonstrated. None of these infants reached adequate blood levels on this dosage.

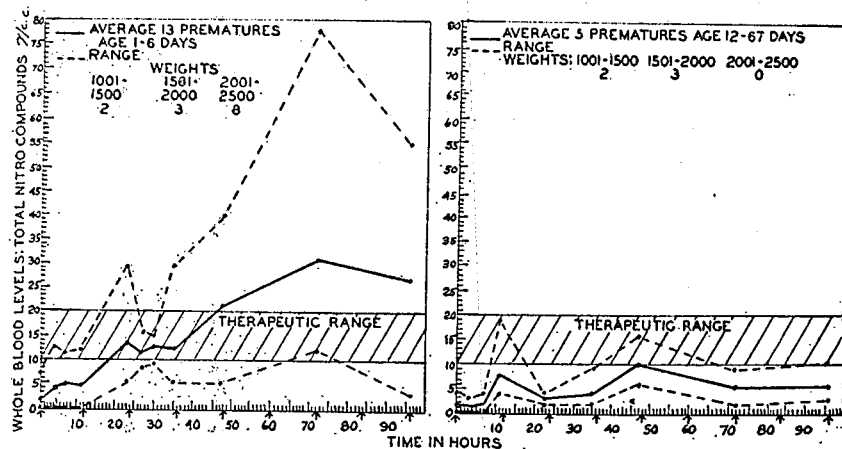


FIGURE 1.—Blood levels during treatment with microcrystalline chloramphenicol 10 mg/kg every 12 hours i.m.

*Analyses were done by the Parke, Davis & Company Laboratories.

†Chloromycetin Intramuscular.