pounds following a single 50 mg/kg intramuscular injection of the succinate ester in 15 prematures 1 to 4 days old. Peak levels were obtained within 3 hours, clearly showing rapid absorption. Adequate levels were present for over 48 hours, but fell more rapidly, the half-life being 24 hours, as compared with a half-life of 28–44 hours with the microcrystalline form. Levels fall even more rapidly in older children, the half-life being 4 hours in 5-year-olds given the succinate ester. (1,10) Figure 3 shows the average blood level found in 5 prematures, 10 to 19 days old, given the same dose. Absorption was again rapid, and here, too, excretion was more rapid than with the younger prematures. The half-life was 14 hours with adequate levels maintained for 12 to 18 hours.

Eight premature infants, 2 to 4 days old, given chloramphenicol sodium succinate, 25 mg/kg intramuscularly once daily, after an initial dose of 50 mg/kg, had adequate levels for the week they were treated. One infant accumulated nitro compounds on this schedule, the blood level on the third day reaching 56μg/cc. At this time the infant's abdomen was distended; he had liquid stools and grunting respirations. The infant recovered, and the blood levels dropped without stopping the drug. Although the symptoms disappeared while treatment was continued, they may represent a toxic reaction.

Three prematures, 12 to 22 days old, had inadequate levels when given 25 mg/kg/day intramuscularly. Five prematures, ages 10 to 18 days, had good levels on 50 mg/kg/day without toxic symptoms. Again, no correlation between birth weights and blood levels was found.

Chloramphenicol sodium succinate given intravenously to premature infants was also slowly excreted, as shown in Figure 4. Three 1-day-old infants were given 25 mg/kg in 50 cc. 5% glucose in water over a 5-hour period. Blood levels remained in the therapeutic range for 18 to 24 hours following completion of the infusion; the half-life was 15 to 22 hours. Two infants, 13 and 23 days old, were given 50 mg/kg over a 3-hour period. Again, adequate levels persisted for the succeeding 12 and 21 hours, with a half-life of 8 and 15 hours, respectively. One infant developed ashen gray pallor and lethargy within 1 hour after starting the infusion, when his blood level was 72μg/cc. The symptoms disappeared in the next 3 hours coincident with the fall in blood level to 53μg/cc.

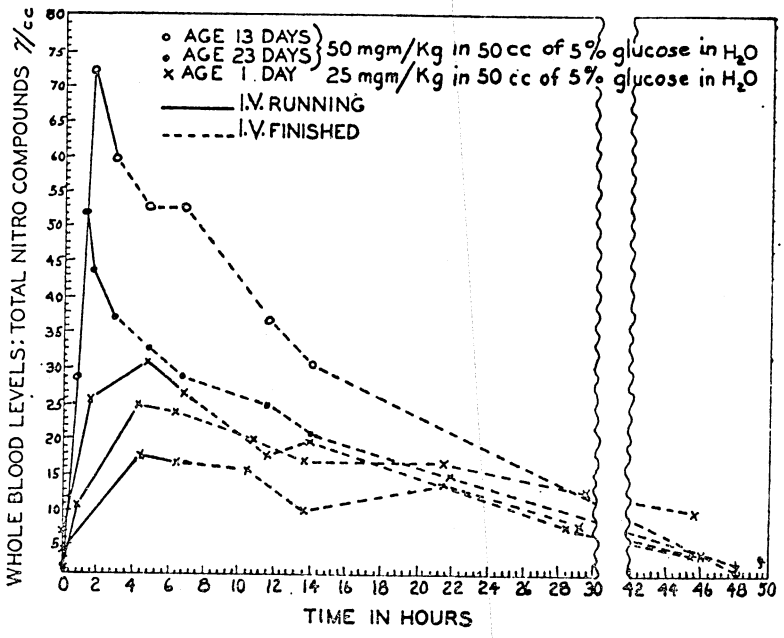

FIGURE 4.—Blood levels following I.V. administration of chloramphenicol sodium succinate.