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APPENDIX V

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SAFE AND EFFECTIVE CHLORAMPHENICOL DOSAGES FOR PREMATURE INFANTS

(By Joan E. Hodgman, M.D. and Lafayette E. Burns, M.D., Los Angeles)

Infections are a significant cause of death in premature infants. Arey and Dent(1) reported, in 1953, a survey of 102 neonatal deaths of which 84 were premature. They listed infection as the major cause of death in 13 (15.4%) of the prematures. Six years later Branton,(2) in a report of 176 consecutive newborn deaths, of which 136 were prematures, attributed death to infection in 20 (14.7%) of the prematures. He reported gram-negative coliform bacilli in 5 of 6 positive blood cultures. Infection also plays a significant role in the mortality at the Premature Center of Los Angeles County Hospital, which cares for over 1,200 premature infants yearly. The main organisms cultured from infections have been gram-negative coliform bacilli, particularly E. coli and Klebsiella aerogenes group. Studies have indicated that these organisms are most consistently sensitive to chloramphenicol. The toxicity of chloramphenicol to premature infants in doses over 100 mg/kg is well documented(3–6). Reported studies have correlated this toxicity with high blood levels of chloramphenicol. Prophylaxis with chloramphenicol as well as other antibiotics has been discontinued at the Premature Center, since in a controlled study they did not lower the mortality rate(3). Chloramphenicol would still be useful for the treatment of infected prematures if a safe dosage schedule were established.

This paper is a report of studies of blood-level responses to intramuscular and intravenous chloramphenicol made to determine whether lower doses would give therapeutic blood levels without toxicity.

METHOD

Premature infants of varying weights and ages were given microcrystalline or the succinate ester of chloramphenicol intramuscularly and intravenously, according to planned dosage schedules. Blood levels of total nitro compounds were

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NOTE.—Numbered references at end of article.