

BIRTH WEIGHT AND THE INCIDENCE OF KERNICTERUS: UNRELIABILITY OF PRE-EXCHANGE BILIRUBIN LEVELS. A.V. Plioplys* and F. Kleinberg,* Rochester, MN (Introduced by G.S. Gilchrist, Rochester, MN.)

To study the clinical and laboratory correlates suggesting predisposition to the development of kernicterus, we reviewed the autopsy data on all newborn infants who died between 1974 and 1980. Twenty-six cases of kernicteric staining of the brain were identified from a total of 230 complete autopsies. In the kernicteric infants with birth weights between 700 and 1,900 g, birth weight and peak serum indirect bilirubin concentration showed significant correlation: infants with lower birth weights were more susceptible to kernicterus at lower bilirubin levels ($P < 0.0001$). Linear regression analysis of these data generated 95% confidence limits, the lower level of which indicated acceptable peak bilirubin levels much lower than those currently used (from 2 mg/dl in the 700-g infant to 11.5 mg/dl at 1,900 g). However, these limits would require vigorous exchange transfusion programs in 58% of infants of similar weights in whom kernicterus did not develop and thus would subject them to unnecessary risks of the procedure. Also, these lower limits would fail to protect kernicteric infants with birth weights of more than 1,900 g. Our observations raise serious doubts about the reliability of basing exchange transfusion levels on serum bilirubin levels in sick premature infants and suggest that rational management requires other laboratory investigations in addition to the bilirubin determina-