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Commentary

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At first glance the results of this interesting study appear to conflict with the findings of several previous authors that babies dying with IVH tend to be small for gestational age (SGA).1–3 Careful examination of the data presented in this paper suggests that the conflict with studies based entirely on necropsy findings may be more apparent than real.

The authors have established clearly that their SGA group had a significantly lower incidence of both HMD and IVH than the AGA infants, and that these differences persisted when the SGA infants were compared with a subgroup of AGA infants matched for gestational age and other risk factors for IVH. However, at the mean gestation of 30 weeks recorded in the matched study groups, the hypoxia and hypercapnia associated with development of HMD may of themselves represent the most important ‘risk’ factors causing loss of autoregulation with resultant cerebral hyperperfusion and IVH.3 IVH is seldom found at necropsy in infants without HMD born at a gestational age of 30 weeks or more.4 From the analyses presented it is thus not possible to tell whether the low incidence of IVH in the SGA group was purely a consequence of biochemical maturation of the lungs by prenatal stress, or was related in part to a concomitant advance in maturation of structure or autoregulatory function in the brain.

In addition, the limitation of analysis to infants ≤1500 g birthweight has excluded from the study many AGA infants of 28–32 weeks' gestational age. This means that the AGA group may contain a high proportion of relatively undergrown infants. This in no way detracts from the main finding that severely growth-retarded infants may be protected from developing IVH by the effects of chronic prenatal stress. It does however allow the possibility that less severe degrees of fetal growth impairment, not associated with advance in lung maturation, could increase susceptibility to IVH as indicated by previous studies. It would be interesting to know whether, among infants with HMD, those who developed IVH were of lower birthweight for gestation than those who did not. This might help to answer the outstanding question as to whether fetal growth retardation confers an increased or decreased risk of developing IVH when any effects on lung maturation are excluded.

References