

## Growth of Infants With Neonatal Growth Hormone Deficiency

There are limited data regarding the growth patterns of infants with neonatal growth hormone deficiency (GHD), and differences of opinion exist regarding the need for growth hormone (GH) to produce normal growth in the first 6 months of life. The authors studied 15 patients (8 males, 7 females) with GHD as well as other tropic hormone deficiencies in an attempt to answer this question. The patients were categorized as having GHD in the newborn period because of the presence of at least 1 of the following in association with GHD: hypoglycemia (13 of 15), micropenis (7 of 8 males), and/or jaundice (13 of 15). Breech delivery occurred in 5 of the 15.

Five had a birth length less than 2 standard deviations (SD) below the mean for gestational age. The mean birth length of the 15 was -1.5 SD below the normal average length. Eight patients had a growth curve with a downward deviation from birth onward, and 7 had no marked lateral deviation from the normal percentile curves up to 9 months.

The conclusion made was that the data are compatible with the hypothesis that (1) some infants with neonatal panhypopituitarism do not have total GHD at birth but develop such deficiency in the ensuing months. In support of this, 2 infants had shown peaks of normal GH release to provocative tests shortly after birth, but the peaks decreased later; (2) GH is necessary for growth immediately after birth; (3) it is uncertain whether, on the basis of the data presented, GH plays a part in prenatal growth; and (4) the ICP (infancy-childhood-puberty) growth model is dependent upon the presence of GH throughout all phases and is not independent during the

infantile phase, as postulated by some clinical investigators.

Wit JM, van Unen H. *Arch Dis Child* 1992;67:920-924.

**Editor's comment:** *These data and conclusions are confirmatory as they support, in part, conclusions made some years ago. Brasel et al (Am J Med 1965;38:484) reported that 39.5% of 39 patients with idiopathic GHD had growth failure during the first year of life. Of the 36 infants born at term, only 4, or 11%, had birth weights less than the third percentile, which is in contrast to the data of Wit and van Unen. Brasel et al concluded that GH was necessary for growth in the first year of life but probably not necessary in utero. The latter also is deducible from the studies of GHD infants born to GHD mothers where the infants are of normal birth weight and length. Interestingly, the GH insensitive patients of the Laron-type often are small at birth. Laron (Adv Intern Med 1984) reported that 10 of 16 were more than 2 SD below the mean birth weight of normals. These data suggest that absence of the pituitary receptor may be more important in normal uterine growth than GH itself.*

*A clinical point made by Brasel et al, which is not appreciated by many, is that one third of 33 patients with adequate dental records had delayed eruption of the primary teeth, and 75% of 36 GHD patients with adequate dental records had delayed eruption of the secondary teeth.*

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