

Paediatric Research Society

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Abstracts of Papers

Parameters of Connective Tissue Metabolism Metabolism in the Neonatal Period. Brian Wharton and Charles Pennock (*Department of Child Health, University of Bristol; and Department of Chemical Pathology, United Bristol Hospitals*). Two parameters of connective tissue metabolism, viz. urinary hydroxyproline and urinary glycosaminoglycans, have been studied in newborn babies.

A characteristic pattern is discernible, which is probably related to the rate of growth. The precise clinical value of these observations is yet to be determined, but it seems probable that they will provide a useful assessment of 'chemical growth' in the newborn.

Preliminary Studies in Nervous Conduction through Myelomeningocele Lesions.* Alistair Blair (*introduced by Peter Dunn*) (*Department of Child Health, Bristol University*). Using the summation technique pioneered by Dawson (1947), somatosensory-evoked potentials were used in a group of children with myelomeningoceles and in a control group of young adults, to study how practical such a method might be in establishing the exact level of the sensory lesion in cases of gross cord damage. In only 5 out of 11 such attempts was a definite level established, but all of these corresponded with clinical neurological findings. The conclusion is drawn that, though with further refinement the method could be more reliable, at present its clinical use is limited.

REFERENCE

Dawson, G. D. (1947). Cerebral responses to electrical stimulation of peripheral nerve in man. *Journal of Neurology, Neurosurgery and psychiatry*, 10, 137.

Minimal Rates of Oxygen Consumption in Small-for-dates Newborn Babies. O. N. Bhakoo (*introduced by J. W. Scopes*) (*Hammersmith Hospital, London*). Scopes and Ahmed (1966) showed that the small-for-dates baby, unlike the normal term baby, has no rise in resting metabolic rate in the first 3 days of life. They found an abrupt rise in such babies on the fourth day. This study has now been repeated in the same Unit with the same techniques with quite different findings—namely that the small-for-dates baby now behaves as does the term baby. An important difference in the care of these babies between 1964–65 and 1969 is the much more liberal early feeding regimen used now.

*From work done during tenure of Wellcome-Swedish Research Fellowship.

A possible explanation of these findings is that, in 1965, inadequate food reserves were limiting basal metabolic rates.

REFERENCE

Scopes, J. W., and Ahmed (1966). Minimal rates of oxygen consumption in sick and premature newborn infants. *Archives of Disease in Childhood*, 41, 407.

Sequelae of Neonatal Jaundice. P. E. Culley, J. E. Powell, J. A. H. Waterhouse, and B. S. B. Wood (*introduced by J. Insley*) (*New Birmingham Maternity Hospital, and Department of Social Medicine, Birmingham University*). 381 newborn infants falling into 3 groups—non-haemolytic jaundice, haemolytic jaundice, and non-jaundiced controls—have been reassessed in the sixth year of life as regards neurological, audiological, and psychological function. Neurological handicap was concentrated among the infants of low birthweight, and was not related to jaundice apart from one case of athetoid cerebral palsy with deafness. No other cases of perceptive deafness were discovered. Intelligence testing on the Stanford-Binet scale showed no relation between depth of jaundice and IQ.

The findings support the majority of reports in the literature, that reduction in intelligence does not occur in non-haemolytic jaundiced babies with serum bilirubin levels below 20 mg./100 ml.; in haemolytic jaundice slight doubt remains. There is no indication for changing present standards for exchange transfusion.

Histopathological Studies in Post-streptococcal Glomerulonephritis. E. F. Glasgow (*introduced by R. H. R. White*) (*Department of Pathology, the Children's Hospital and Birmingham University*). In post-streptococcal glomerulonephritis, the glomeruli on renal biopsy present histological appearances which reflect the time at which biopsy is done. Among the characteristics of early biopsies are hypercellularity of the swollen tufts, polymorphonuclear infiltration, and a reduction in the number of patent capillary loops. On electron microscopy discrete, electron-dense aggregations may be seen within the basement membrane of the loops and also as subepithelial 'humps'; they are seen only in early biopsies, and the latter are said to be pathognomonic of post-streptococcal glomerulonephritis. Usually they have their bases applied to the basement membrane, while the remainder of the hump is completely separated from the urinary space by cytoplasm of the podocyte. Occasionally they appear to be entirely surrounded by podocyte cytoplasm. On ultra-thin sections of glutaraldehyde-fixed material, stained with a modification of