

Aberdeen in 1964–65 when interviewing was carried out. From this sample of 2500, 300 possibly asthmatic children were medically examined and their parent or guardian interviewed by a paediatrician. 121 children were confirmed to be asthmatic. There were 84 boys and 37 girls: 16 of the 20 severe cases were boys. Age of onset of asthma showed that 98 (80%) had experienced their first attack by the age of 5.

There was a family history of asthma among first degree relatives in 64 (53%), of eczema in 14 (12%), and of allergic rhinitis in 21 (17%). The asthmatic children themselves showed other allergic manifestations: 35 (29%) had had infantile eczema, 27 (22%) had had flexural eczema, and 49 (37%) had had allergic rhinitis.

Review of therapy revealed that only one of the asthmatic children had received steroids before the survey.

The group of 121 were graded according to severity—mild (50), moderate (51), and severe (20). Allocation was made on the basis of history and examination. Subsequent evaluation of pulmonary function tests showed good correlation with this grading.

Heights and weights of children in all grades tended to be below the mean, but those in the severe grade were at or less than 2 SD below the mean.

Sociological data obtained and evaluated revealed that there were significantly more of the severe asthmatics in the semi- and unskilled manual classes. The severe asthmatics tended to occur in families of 4 or more, regardless of social class. The IQ score at 7+ years showed that all asthmatics tended to score higher than the rest of the population. This was particularly apparent in the semi- and unskilled manual classes where the mean IQ of the asthmatics was 109 and that of the population 102.

The over-all prevalence of asthma in this sample of Aberdeen schoolchildren was 4.8%.

### Arterial Blood Gas Tensions and pH in Acute Asthma in Childhood

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The arterial blood gas tensions and pH in 21 children studied during 24 acute attacks of asthma were reported. All were hypoxic on admission to hospital, and in 10 there was evidence of CO<sub>2</sub> retention. Cyanosis, invariably present when the arterial oxygen saturation was below 85%, and restlessness in patients breathing air, were the most reliable indices of the severity of hypoxia. There were no reliable clinical guides to the PCO<sub>2</sub> level. Conventional oxygen therapy in tents (25–40%) did not always relieve hypoxia, and in 3 cases the administration of oxygen at a concentration of 40% or over failed to produce a normal arterial oxygen tension. Uncontrolled oxygen therapy could aggravate respiratory acidosis, and 2 children developed CO<sub>2</sub> narcosis while breathing oxygen. The necessity for blood gas measurements in the management of severe acute asthma in childhood was emphasized.

### Some Biochemical Aspects of Intrauterine Growth Retardation

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A group of 9 infants with birthweight below the 10th centile for gestational age, born to mothers with pre-eclamptic toxæmia and a low urinary excretion of oestriol, were studied at birth and daily during the first week of life.

Samples of blood were obtained at caesarean section from maternal vein, umbilical vein, and umbilical artery. At 24-hour intervals capillary blood samples were obtained 2–2½ hours after standard evaporated milk feeds. Values obtained from a group of 15 normally grown infants delivered by caesarean section were used as controls.

Haematocrit and pH values in maternal and fetal samples of control and low birthweight (LBW) groups were comparable at birth. During the first 4 days after birth the haematocrit was significantly higher in the LBW infants. Capillary pH values were lower in the LBW group throughout the first week. A mean maternal vein—umbilical vein difference of 24 mg. glucose/100 ml. plasma was found in the LBW group compared with 10 mg./100 ml. plasma in the normal. The umbilical venous and arterial glucose concentrations in the LBW infants were significantly below those of the controls and remained lower throughout the first week. Total plasma protein concentrations of the LBW group were significantly below normal in maternal as well as in all the perinatal samples. There were no gross differences in umbilical vein plasma amino acid concentrations apart from a higher taurine concentration in the LBW samples. The over-all ratio of umbilical vein/maternal vein plasma amino acid concentration was reduced from 1.9 (control) to 1.5 (LBW) due to an increase in the toxæmic mothers' amino acid concentrations towards the non-pregnant values.

Plasma calcium was significantly lower and inorganic phosphorus higher in the umbilical vein plasma of the LBW infants. Magnesium values were comparable throughout. Concentrations of copper were higher in the plasma of the toxæmic mothers but fetal concentrations were normal.

The relevance of these findings in relation to placental function and the subsequent development of the infants was discussed.

### Folic Acid Trends and Prophylaxis in Prevention of Megaloblastic Anaemia of Infants of Low Birthweight

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In the first phase of this study the trends in whole