COMMENT

Robb-Smith (1941) described the post-mortem findings in patients dying with gross lung fat embolism within the first 48 hours of injury. The lungs were heavy and voluminous, and the visceral pleura presented a marbled appearance from alternating zones of haemorrhage and emphysema. Frothy blood-stained fluid exuded from the cut surfaces, and microscopy showed congestion of the capillaries with zones of emphysema and intra-alveolar haemorrhage and oedema. The mechanism of these changes associated with embolism is not understood. According to Sevitt (1962) they are not mediated by lung emboli, and he regards the evidence as pointing to a central effect of the fat emboli on the brain-stem, rather than to a local effect in the lung capillaries. Whatever the cause of the pulmonary condition the lowered arterial oxygen saturation of the blood can be explained by a combination of pulmonary oedema, perfusion of underventilated alveoli, and a reduction in lung compliance.

Treatment by I.P.P.R. with added oxygen was effective in the case reported here as demonstrated by the rapid disappearance of cyanosis and reduction in the amount of frothy sputum.

We were unable to draw any definite conclusions as to the value of Rheomacrodex or hypothermia.

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Erythrocyte Glucose-6-Phosphate Dehydrogenase Deficiency in Chinese

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The incidence of erythrocyte glucose-6-phosphate dehydrogenase (G.-6-P.D.) deficiency among Chinese is uncertain. Beutler, Yeh, and Necheles (1959), using the glutathione stability test, failed to find evidence of erythrocyte G.-6-P.D. deficiency in 41 male and 36 female Chinese. One the other hand, Vella (1961) reported that the red cells of 2.5% of 240 male Chinese blood donors in Singapore were enzyme-deficient according to the brilliant cresyl blue dye reduction test. The admission to the University Department of Medicine, Queen Mary Hospital, Hong Kong, of a number of patients suffering from haemolytic anaemia associated with erythrocyte G.-6-P.D. deficiency, in some instances accompanied by massive haemoglobinuria, rendered it desirable to determine the incidence and severity of this deficiency, which undoubtedly occurs among Chinese.

Material and Methods.—Two hundred adult male patients from the southern Chinese province of Kwangtung admitted consecutively to the Queen Mary Hospital (100 surgical and 100 medical) were screened for erythrocyte G.-6-P.D. deficiency by the methaemoglobin reduction test of Brewer, Tarlov, and Alving (1962). In those patients giving a positive and in 20 of those giving a negative methaemoglobin reduction test the enzyme activity in the erythrocytes was determined by the method of Kornberg and Horecker (1955), and the results were expressed as change in optical density per minute per gramme of haemoglobin (Δ O.D./min./g. haemoglobin).

Results.—Eleven of the 200 patients investigated (five surgical and six medical) gave a positive methaemoglobin reduction test, an incidence of 5.5%. In these 11 the erythrocyte G.-6-P.D. activity ranged from 0 to 1.6 (mean $= 0.6 \pm 0.5$) Δ O.D./min./g. haemoglobin. None of these patients were anaemic. In the 20 patients giving a negative methaemoglobin reduction test the G.-6-P.D. activity ranged from 6.5 to 15.0 (mean $= 9.6 \pm 1.7$) Δ O.D./min./g. haemoglobin.

COMMENT

Erythrocyte G.-6-P.D. deficiency has been found to have an incidence of 5.5% in adult Chinese males from Kwangtung Province. The existence of the deficiency among the inhabitants of other provinces of China may be inferred from the report by Du (1952) of the occurrence of favism in Szechuan and from the review of Sung and Yang (1960), in which it is stated that favism has been reported in the provinces of Kwangsi, Kiangsu, Kweichow, Chekiang, Anhwei, and Hopei in addition to Szechuan and Kwangtung.

Marks and Gross (1959) found instances of the complete absence of demonstrable erythrocyte enzyme activity in 22 enzyme-deficient Caucasian males (Sardinians, Sephardic Jews, Greeks, and Iranians) studied, whereas none were encountered in 59 enzyme-deficient negro males. The findings here reported indicate that the defect encountered in Chinese approximates in severity to that in Caucasians.

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