SICKLE-CELL TRAIT IN THE NATAL INDIAN

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Population surveys on the incidence of the sickle-cell trait have been undertaken among the South African Bantu[1] and the Cape Coloured. Esrachowitz *et al.*[2] found an incidence of 0·58% in a series of 1,555 cases in Cape Coloured persons and Griffiths (quoted by Grek and Findlay[3]) found only 2 positive cases out of 600 African patients in Johannesburg. In addition Altmann[4] found only 1 case of the sickle-cell trait among 403 South African Bantu patients.

So far very little information has been published concerning the incidence of either sickle-cell disease or the sickle-cell trait in the South African Indian,[5] although both conditions are recorded in India.[6] Lehmann and Cutbush[7] reported an incidence of 3·3 - 30% in the aboriginal communities of Southern India. Following the admission of 5 patients with sickle-cell anaemia (2 from the same family) to King Edward VIII Hospital during the past 4 years, it was decided that the incidence of the sickle-cell trait in the South African Indian in Natal should be investigated.

MATERIAL AND METHODS

A survey was carried out on 1,000 Indian patients admitted to the various wards of this hospital from September 1960 to April 1961. The blood samples were taken from blood sent for routine haematological investigation, without previous knowledge of the age, sex, clinical condition or haematological picture of the patient. The following investigations were performed:

1. In all cases, 1 drop of whole blood was treated on a slide with 1 drop of 2% sodium metabisulphite, sealed with a cover slip, incubated at 37° C., and examined microscopically 6 hours and 24 hours later.

2. In those cases where sickling was demonstrated, blood was sent for haemoglobin electrophoresis[8] and alkali denaturation.[9]

RESULTS

Of the 1,000 patients, 10 showed a variable amount of sickling within 24 hours by the sealed cover-slip method.

Paper electrophoresis showed a combination of haemoglobin A with haemoglobin S. The 1-minute alkali denaturation showed, in all cases, that less than 2% of the haemoglobin was resistant to KOH treatment.

The patients were then investigated and in no case was the admission to hospital attributable to a haematological disorder.

SUMMARY

In a survey of 1,000 South African Indian patients admitted to King Edward VIII Hospital, the incidence of the sickle-cell trait was found to be 1%.

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