**LETTERS TO THE EDITOR**

**Dietary factors associated with duodenal ulcer**

Sir,—The results of two recent studies showed that duodenal ulcer was associated with low dietary linoleic acid and high refined sugar intake. In India and Bangladesh Tovey and colleagues noted a high incidence of duodenal ulcer from areas in which milk or polished rice, sorghum, or yams are staples, and a low incidence where unrefined wheat, certain millets, or pulses are staples. The protective factor could be either a lipid or a liposoluble substance. It has been hypothesised that in Western populations the falling incidence of duodenal ulceration may be related to the increased consumption of essential fatty acids, particularly linoleic and arachidonic acids. In Africa the frequency of duodenal ulcer is rising in urban populations with their transition in diet and other aspects of lifestyle. Rises in frequency occur in the 'Western' type of duodenal ulcer, with haemorrhage and perforation being the major complications. This picture contrasts with the complication of gastric outlet obstruction resulting from the 'stenosing' type of ulcer, which occurs in rural, non-Westernised areas of Africa.

In Soweto (population about 2 million) at Baragwanath Hospital (3200 beds, 52 200 inpatients annually) in 1983 there were 236 patients with duodenal ulcer (4:5 per 1000 hospital admissions), a considerable increase, even allowing for population growth, from 1956 when only 34 patients were admitted for treatment. In 1964–71 Brenner reported 87 black patients among 31 500 surgical admissions to the Johannesburg Hospital (2 8 per 1000 hospital admissions). The traditional diet contrasts with the complication of duodenal ulcer. No doubt, in urban areas, in contrast to the past, fat intake has risen (supplying 25–30% or more of energy) and sugar intake also (supplying 10% or more of energy), whereas fibre intake has fallen to that of the white population, perhaps even lower, of 10 g or less daily. The fall in linoleic acid intake now compared with the past derived from cereal products is considerable. Not only is the concentration in superfine milled flour (and in its erstwhile substitute brown bread) of essential fatty acids reduced, but consumption of maize meal has fallen. Although bread consumption has increased, most of the black population favour white bread, despite it being dearer than the more subsidised brown bread. Bean consumption has halved compared with the past. There is no likelihood of a reversion to the past; the black population are avid for more meat, more fat, and less carbohydrate in foods. There is likely to be little restraint of diabetes in diseases of prosperity. Currently there are only slight rises in non-infective bowel diseases, but, as stated, large increases in the number of patients with duodenal ulcer.

To keep a perspective, it must be remembered that duodenal ulcer is of multifactorial aetiology, with Helicobacter pylori, stress, pepsin, acid, and other factors sharing responsibility. Spurs urged physicians to recognise 'that an ulcer is not a disease or an entity... but a manifestation of many different processes.'

I SEGAL
Gastroenterology Unit, Baragwanath Hospital and University of the Witwatersrand, PO Bertism 13, South Africa

A R WALKER
Human Biochemistry Research Unit, South African Institute for Medical Research, Johannesburg, South Africa

H H VORSTER
Department of Physiology, Potchefstroom University for CHE; Potchefstroom 2520, South Africa

Correspondence to: Dr I Segal.


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Y R MAHIDA
Department of Therapeutics, University of Nottingham, Queen's Medical Centre, Nottingham NG7 2UH


Interleukin-2 receptor expression.

Y R Mahida

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