Summary

The influence on gastric activity of adding 20 mEq HCl/litre of test meal containing 100 g. of glucose per litre has been investigated in 27 normal subjects and 16 patients with duodenal ulcer. The test meal contained a marker which allowed the volume of meal remaining and amounts of acid, chloride, and pepsin secreted to be calculated.

These experiments have not revealed any convincing evidence of abnormally rapid gastric emptying in patients with duodenal ulcers.

In normal subjects the less the secretion of acid in response to the control meal the more effective was the added acid in slowing emptying. The mean slowing of emptying by added acid in patients with duodenal ulcer was equal to that in the normal subjects. When the increased secretory response of the patients with duodenal ulcer is borne in mind this finding indicates that the mechanism which slows emptying in response to acid in patients with duodenal ulcer is more reactive than it is in normal subjects.

In response to the control meal the group of patients with duodenal ulcer had about twice the mean normal outputs of acid, chloride, and pepsin.

The added acid caused a mean fall in the output of acid in the normal subjects. In the patients with duodenal ulcer there were 10 out of 16 in whom the addition of acid reduced the output of acid. In the six others there was some augmentation of the output of acid.

The significance of these findings in the genesis of gastric hyperfunction in patients with duodenal ulcer is discussed.

It is a pleasure to thank many clinical colleagues for permission to investigate their patients with peptic ulcers, the patients themselves, and the students who have co-operated in these studies. I am also indebted to the Society of Apothecaries for the award of the Gilson Scholarship, out of which part of the expenses of this research was defrayed.

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"The Australian Department of Health has issued a permit for the importation of the European rabbit flea, which it is hoped will intensify the spread of myxomatosis. The fleas are being collected from Europe this month, the time of the year when they are most plentiful. They will be bred under strict quarantine conditions. Tests will be carried out to ensure that the flea will not be harmful to Australian native animals; experts in wild life will determine whether the flea represents a hazard to such animals as the koala and other marsupials or to certain domestic animals and birds."
 —*New Scientist*, March 14.

POST-PARTUM BLOOD PICTURE IN SINGAPORE

BY

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Previous investigations carried out by Wadsworth (1952a, 1952b, 1954) in Singapore showed that healthy people of all races living in a tropical climate had normal packed red-cell volumes, red-cell counts, and haemoglobin levels. The poorer classes of the population were not included in those investigations, but Millis (1954) found only one case of anaemia among 106 infants of the poorest and worst-fed section of the Singapore population, and it was of interest to find out whether there was any great degree of anaemia among those most likely to be affected—mothers in the lower-income groups.

Material and Methods

A total of 212 mothers were investigated in the free post-natal wards of the Kandang Kerbau Hospital, Singapore, where the inmates are all from the lower income groups. All patients had normal full-time deliveries without any haemorrhage before or after delivery, and in each case the puerperium was proceeding normally. They were unselected in respect of race, age, or number of pregnancies, and they represented a typical cross-section of non-paying patients in the hospital. There were 174 Chinese, 36 Indians, and 2 Malays. Their ages ranged from 16 to 46 years, and the number of previous pregnancies from 0 to 11. The climate of Singapore is uniformly warm and humid (Wadsworth, 1954); there is no malaria, very little hookworm, and less poverty than almost anywhere else in Asia and Africa.

All samples of blood were taken from an antecubital vein, using minimal stasis, on the second, third, or fourth day after delivery. The blood was placed in a dry stoppered bottle containing an ammonium-potassium oxalate mixture (Heller and Paul, 1934), and examination of the blood was made within two hours of collection. Haemoglobin estimations were made in all cases and haematocrit estimations in 192, there being slight haemolysis in 20 samples.

Estimations of the haemoglobin concentration were made with an M.R.C. photometer (King *et al.*, 1948a, 1948b). Pipettes used were of N.P.L. standard, and special care was taken to ensure that glass cells were scrupulously clean. Blood was thoroughly mixed before dilution, and errors were eliminated so far as possible by making frequent checks with the calibrated neutral glass standard. The packed red-cell volume was estimated by Wintrobe's method, and the samples were centrifuged for 45 minutes at 3,000 r.p.m.

Results

The mean haemoglobin level was 11.85 g./100 ml. (S.D. 1.85), and the mean packed red-cell volume was 35.3% (S.D. 4.77). The distribution of haemoglobin values is shown in Fig. 1 and the distribution of packed red-cell volumes in Fig. 2. Of the haemoglobin values observed, 95% were above 9 g./100 ml., and 86% of the packed red-cell volumes were over 30%. There were only a few isolated cases of moderately severe anaemia. The lowest levels of haemoglobin were 4 g./100 ml. in one patient, 5 g./100 ml. in two patients, and 6 g./100 ml. in one patient. Two patients had packed cell volumes of less than 20%.

No difference was observed between different age groups, nor was any difference found between primiparae and multiparae, and there was no correlation between the results observed and the number of pregnancies. There was, however, a gradual decrease in haemoglobin levels between the second,

third, and fourth days. Samples of blood examined on the second day after delivery had a mean of 12.17 g./100 ml. (S.D. 1.65) while samples examined on the fourth day had a mean haemoglobin of 10.97 g./100 ml. (S.D. 1.82). This conforms with the observations of Tysoe and Lowenstein

FIG. 1.—Distribution of haemoglobin levels, 212 patients.

FIG. 2.—Distribution of packed red-cell volume, 192 patients.

after delivery and an average haematocrit value of 36%. In New Zealand, McGeorge (1935) found haemoglobin levels 15% below normal one to three days after delivery. In Britain Meyer-Wedell (1943) found a mean average haemoglobin level of 65% in the first four days of the puerperium. In Canada, Tysoe and Lowenstein (1950) found a mean haemoglobin concentration of 11.3 g./100 ml. and a mean packed cell volume of 34% on the fourth day after delivery. In spite of a few cases of moderately severe anaemia, the haematological levels in the present series are identical, within the normal errors of estimation and sampling, with those quoted above, and it would appear that there is no great prevalence of anaemia among the poorer mothers of Singapore.

In Africa, Berry (1955) found a prevalence of severe anaemia before and after delivery, and he attributed this to multiple deficiencies, parasitic infestation, and diseases of the liver. The climates of Singapore and Lagos are very similar, but there is no severe malnutrition in Singapore and no prevalence of serious disease. The present results confirm, therefore, that anaemias observed elsewhere in the tropics were not a result of the climate but of poor food or ill-health (Wadsworth, 1952a, 1952b, 1954; Berry, 1955). At the same time, the high incidence of mild anaemia and the occasional existence of moderately severe anaemia observed during the present investigation show that the problem of post-partum anaemia should not be treated with complacency even in comparatively well-fed populations.

Summary

The haemoglobin levels and the packed red-cell volumes of working-class mothers in Singapore were estimated two to four days after delivery. The mean

haemoglobin level was 11.85 g./100 ml. and the mean packed red-cell concentration 35.3%, a finding which conforms closely with observations made in countries with a high standard of living and a temperate climate. This confirms that tropical anaemias are due to other causes than a warm climate.

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Medical Memoranda

Isoniazid Allergy

Isoniazid sensitivity is a rare occurrence. I have treated more than 500 patients with this drug and have never encountered marked allergic manifestations. This is also the experience of most chest workers in Europe and North America (Carr *et al.*, 1953; Castle, 1953).

Collins (1952) had a case in which a widespread purpuric rash developed after 28 days' treatment with the drug. This eruption subsided when therapy was stopped and reappeared when it was started again. Since then several papers have appeared in the French literature describing a purpuric rash (Levi-Valenski *et al.*, 1953) or bullous dermatitis (Martin, 1953), and in Germany erythroderma (Keller, 1955) and capillary haemorrhages (Merk and Weinreich, 1954; Walther and Winter, 1954) have also been recorded. Indeed, Gernez-Rieux *et al.* (1954) have reported fatalities in two patients treated with intravenous isoniazid. One death was attributed to anaphylactic shock and the other followed massive intestinal haemorrhage. Since then, Kalbian (1954) has reported pyrexia and malaise occurring in a patient following the oral administration of isoniazid.

The following account of isoniazid allergy is presented in view of the drug's extensive use in antituberculous work, the extreme rarity of the condition, and the interesting clinical manifestations of the hypersensitivity.

CASE REPORT

A man aged 45 was found to have tuberculous infiltration in the right apex and first and second right intercostal spaces. A 1-cm. cavity was visible tomographically in the 4 and 5 cm. cuts; acid-fast bacilli were recovered from his sputum on direct smear, and crepitations were audible on auscultation over the posterior segment of the right upper lobe. A diagnosis of active pulmonary tuberculosis was made. He was placed on absolute rest in bed and a course of intramuscular streptomycin, 1 g. daily, P.A.S., 12 g. daily, and isoniazid, 200 mg. daily, each of the latter in three divided doses, which were administered orally.

After 24 days he complained of rawness and burning behind his xiphisternum, with some nausea, abdominal distension, and discomfort on swallowing at the level of the lower end of the sternum. The following day his malaise