Prediction of severity of acute pancreatitis

Sir,—We read with great interest the article by Fan et al (Gut 1989; 30: 1591–5) in which they have shown that two factors (serum urea and plasma glucose) were as good as the conventionally used multifactor scoring system of Imrie et al (1) and Ranson et al (2) using nine and 11 factors respectively for clinical and biochemical assessment of severity of acute pancreatitis. The major drawbacks of multifactor include (a) use of too many factors, (b) need for a longer duration (48 hours) before assessment of severity can be made, and (c) effect of treatment on various assessment parameters during 48 hours of observation.

Although fascinating, it seems unlikely that the authors' new approach — the use of a discriminant value of the two factors (serum urea >7-4 mmol/l and plasma glucose >11-0 mmol/l) in assessment of severity of pancreatitis — will stand the test of time because of the following reasons. Firstly, the raised serum urea has a very non-specific value as it can be altered because of dehydration, repeated vomiting, poor intake, and other non-pancreatic factors like gastrointestinal bleeding and renal dysfunction. Secondly, the occurrence of upper gastrointestinal bleeding (occurring in 10–20% of patients with acute pancreatitis) might significantly affect the serum urea concentration even though it may have no relation to severity of pancreatitis.

Thirdly, the authors' explanation that high serum urea concentration could be a reflection of poor physiologic reserve of major organ system does not seem to have convincing scientific appeal.

Moreover as the plasma glucose intolerance and incidence of diabetes mellitus increase with age and the authors fail to mention whether or not underlying diabetes mellitus was ruled out in their patients with acute pancreatitis, it is possible that a proportion of their patients may have had raised plasma glucose secondary to pre-existing glucose intolerance or diabetes mellitus rather than because of underlying severe pancreatitis.

Finally, we believe that from the standpoint of the clinical management there is no harm in waiting for a day or two to observe the course of acute pancreatitis on conservative treatment even though the course may alter (maybe for the good) the score of the multifactor scoring system, rather than rush to predict the severity of acute pancreatitis at admission.

ANIL ARORA
S K ACHARYA
All India Medical Sciences,
New Delhi — 110 029, India

Reply

Sir,—We agree that raised serum urea and blood glucose at the time of admission may be influenced by many factors. This inadequacy was reflected by the relatively low predictive value of positive and wrongly discussed in the report. However, all the possibilities leading to raised serum urea mentioned by Dr Arora and Acharya were definitely related to a severe attack of acute pancreatitis and I cannot agree that gastrointestinal bleeding is unrelated to severity. Patients with underlying diabetes mellitus were not specifically defined in our report. However, diabetic patients with underlying major organ dysfunction are certainly at high risk of developing systemic complications of acute pancreatitis and deserve to be carefully monitored and aggressively treated at admission.

The policy of waiting for 48 hours to monitor the course of the disease to collect complete data for grading of severity is not justifiable in modern day medicine. In our previous report, 13-8% of patients deteriorated within 48 hours. With adequate treatment, fewer patients did so.

S T FAN
Department of Surgery,
University of Hong Kong,
Queen Mary Hospital,
Pokfulam Road,
Hong Kong


Why do patients with ulcerative colitis relapse?

Sir,—In reply to my letter (Gut 1990; 31: 599) Riley et al state that of the many studies I quoted 'all are uncontrolled.' This is incorrect and if unchallenged may lead further researchers to discount those criticisms concerning inappropriate methodology which remain valid (3) and thus perpetuate the likelihood of further needless waste of research effort. My 1959 article stated that 98 radiotherapy patients were used as control subjects and interviewed according to the same protocol as the 173 ulcerative colitis patients, while McMahon et al used healthy siblings as controls in their investigation of 23 patients by means of psychometric tests including the Minnesota Multiphasic Personality Inventory and psychiatric interviews. In another investigation of 35 patients entitled 'Psychopathology of ulcerative colitis' Roubbieck and Martonova (4) used 20 healthy subjects as controls and confirmed the limited value of standard psychiatric tests in these emotionally guarded colitis patients by means of sensitive interviewing and the Thematic Apperception Test designed to penetrate emotional defences. Riley et al are right to emphasise the continuing need for 'controlled clinical trials' but if the questions asked are irrelevant to pathogenesis, or the instruments of investigation are too blunt for the purpose asked of them, no amount of control data will help. They may even deceive people into thinking that proper scientific rigour has been applied. Riley et al appear to have listened to commonly recited, but uncorroborated views of others, rather than checked the original sources. Pelser and I have given examples of how this has often delayed scientific progress for years.

J W PAULLEY
51 Angel Road,
Ipswich IP1 3FJ

Effects of albumin infusion in cirrhotic patients

Sir,—Intrahepatic albumin infusion has been reported as an effective treatment of hypoproteinaemia in cirrhotic patients with ascites (McCormick et al, Gut 1990; 31: 204–7). The development in renal sodium handling in cirrhosis is well known; however, the mechanisms mediating this abnormality remain incompletely defined. Changes in effective circulatory volume trigger hormonal alterations leading to sodium and water retention. A large proportion of cirrhotic patients with ascites formation show decreased effective plasma volume, activated vasconstrictor hormone systems, hypoalbuminaemia, and hypotraumaemia. We investigated 15 patients with liver cirrhosis and ascites (5 women, 10 men, aged 52–65 years). Patients were on long-term diuretic treatment and a low sodium diet containing 30 mmol/day of sodium. An intravenous infusion of 20% albumin was given in a dose of 1 g/kg. The diuretic and natriuretic responses as well as the albumin induced changes in vasomotor hormone profile were measured.

Albumin infusion induced nearly a fourfold increase in diuresis and sodium excretion in nine of 15 patients (group A), with the normalisation of serum sodium (Table). Albumin also increased the plasma level of atrial natriuretic factor (ANF) to normal, while decreasing the high plasma renin activity subjects.

<table>
<thead>
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<th>Group</th>
<th>Control</th>
<th>Albumin</th>
<th>Group B (n=6)</th>
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<tr>
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<td>Albumin</td>
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An 0-01 or 0-05 e control; 3p<0-001 e control; 4p<0-001 e group A-control; 5p<0-01 e group A-control; 6p<0-05 e group A-control.


Urine flow rate (Ucr), sodium excretion (Ucr/Vcr), serum concentrations of sodium (Na) and albumin (alb), and plasma concentrations of atrial natriuretic factor (ANF), plasma renin activity (PRA), and vasopressin (AVP) (mean SEM)

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Why do patients with ulcerative colitis relapse?

J W Paulley

Gut 1990 31: 1419
doi: 10.1136/gut.31.12.1419-b

Updated information and services can be found at:
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