abnormal coagulation results, confirmed the diagnosis of disseminated intravascular coagulation. The transfusion of freeze-dried plasma (which has little if any coagulant activity), fibrinogen concentrate, and whole blood that she was given before admission would have had no appreciable effect on the coagulation results obtained and would not have caused the appearance of FDPs or fragmented red cells.

Twelve hours later the prothrombin time was 16 s (control 14 s); partial thromboplastin time 45 s (control 35 s); and thrombin time 15 s (control 12 s). FDPs in the serum still exceeded 40 mg/ml and the film showed occasional fragmented red cells.

Comment

It seems likely that all intra-amniotic hypertonic solutions have a similar effect on the placenta and trophoblast, and these changes are probably responsible for the alteration in clotting. The use of hypertonic solutions such as urea has two advantages. Firstly, the mean induction-abortion time is shorter than with oxytocin or prostaglandin used alone, and, secondly, urea in particular almost invariably kills the fetus, which avoids emotional confusion on the part of the patient and nurses at the abortion.

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⁴ McKenzie, I Z, *et al*, *Lancet*, 1975, **2**, 1066.

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Effect of cimetidine on lower oesophageal sphincter

Erosive oesophagitis is a major complication of fulminant hepatic failure (FHF). In a previous study¹ the incidence of bleeding was decreased by the prophylactic administration of the H₂-receptor antagonists metiamide and cimetidine intravenously. This was attributed to a reduced acidity of gastric contents, which may reflux in recumbency and in the presence of a nasogastric tube. Another possibility, however, is that the treatment increased the lower oesophageal sphincter pressure (LOSP), as occurs in opossums given metiamide.² We have examined whether such an effect does, in fact, occur in man.

Methods and results

Oesophageal manometry was performed on six normal volunteers (four men and two women) with an average age of 28 years after an overnight fast. A single-lumen (internal diameter 1.5 mm, outer diameter 6 mm), continuously perfused (4.4 ml/min) catheter was used with three recording orifices at the same level 120° apart. Pressures were measured with an Aksjeselskapet AE 840 transducer and a Simonsen and Weel BAP 001 pressure amplifier recording through a Servoscribe 1S RE 541 flatbed recorder. LOSP was measured at 15-minute intervals for 90 minutes by a standard rapid-pull-through technique.³ With the volunteer's breath held in mid-inspiration the recording catheter was withdrawn at 0.5-1.0 cm/s from the gastric fundus to the lower body of the oesophagus. The mean of three measurements at each interval was calculated, the intragastric pressure being

used as a baseline of zero. During the first 60 minutes of the 90-minute study cimetidine 150 mg was given as a continuous intravenous infusion. The same measurements taken on another day without the administration of cimetidine served as control values.

When the results for each volunteer were considered individually no significant difference was found at each 15-minute period between the control LOSP and the value obtained during infusion (paired *t* test). When the average values for all six volunteers at each 15-minute period were compared with the starting values (time 0; see figure), however, some differences were apparent. In the first 15 minutes the control value fell significantly below the starting value (*P* = 0.0125), whereas the LOSP recorded during infusion fell only slightly in five volunteers and in one it greatly increased, giving an overall slight fall. During the infusion all volunteers showed an increase in LOSP at 30 minutes, and at 60 minutes a value significantly below the starting value (*P* = 0.0125).

Mean ($\pm$ SE of mean) LOSP measured over 90 minutes in six volunteers. Dashed line indicates values recorded during (first 60 minutes) and after infusion of cimetidine 150 mg. Solid line indicates values recorded in same volunteers on another day without cimetidine infusion.

Comment

In the opossum study² metiamide increased the LOSP when infused at 2 mg/kg/hour, but at higher infusion rates a decrease in pressure occurred. Only one of our six volunteers showed an increase in LOSP with low blood cimetidine levels and a fall as the blood cimetidine concentration increased. Perhaps there was some positive influence on the LOSP occurring at 15 minutes in the remaining five volunteers, as the early and unexplained drop in pressures measured during the control studies appeared to have been attenuated.

Thus cimetidine may have a bimodal effect on LOSP in man, with stimulation of the sphincter at low blood levels and slight inhibition at high blood levels, accounting for an early pressure rise and a decrease 30 minutes later. The failure of cimetidine to cause a sustained increase in LOSP, however, suggests that it prevents bleeding erosive oesophagitis in FHF by decreasing gastric acidity.

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