What's new and controversial?  
A critical critique!

Gastrointestinal bleeding

Of 1523 presentations at this year's meeting, the author has reviewed 63 articles in relation to gastrointestinal bleeding. Overt lower gastrointestinal bleeding was discussed in only three poster papers (occult bleeding was not reviewed).

LOWER GASTROINTESTINAL BLEEDING

A Japanese paper described successful and complete colonoscopy in 65 actively bleeding patients prepared with polyethylene glycol-electrolyte solution lavage. In 16 cases (100%), local hemostasis was achieved by local clips, injections or heat probe.

A study from Israel of 101 octogenarians evaluated by colonoscopy for rectal bleeding described a surprisingly high incidence of neoplasia (cancer 29%, adenomatous polyps 34%).

The last study, from the United States, reported on the successful control of bleeding telangiectasia with thermal probe in eight radiation proctitis patients.

UPPER GASTROINTESTINAL BLEEDING

Bleeding peptic ulcers were elaborated in a major lecture and 45 short presentations. There were 15 papers on variceal bleeding. Among these 60 articles, only five were part of symposia; four others were 'free' papers. All of the other articles were posters or abstracts.

Dr P Wara, from the surgical-gastroenterological department of Aarhus University Hospital in Denmark, gave the quadrennial review on 'Endoscopic treatment of bleeding peptic ulcer'. This major presentation is summarized as follows.

Bleeding from gastric and duodenal ulcers in Scandinavia has not changed over the past 15 years.

Surgical mortality in low and high risk patients is 11% and 36%, respectively. This is unacceptable compared to a low mortality (5.6%) in patients managed by therapeutic endoscopy, although more standardization and controlled trials are needed.

Mortality is related to age (above 60 years) and concomitant illnesses (mainly cardiocirculatory problems, diabetes, chronic pulmonary insufficiency and renal failure). It is also increased (10%) with clinical evidence of shock, eg, a decrease in central venous pressure (greater than 5 cmH\(_2\)O) or blood pressure (greater than 50 mmHg) and the need for multiple transfusions within the first 48 h of bleeding (greater than seven units). Clinical factors are poor predictors of major hemorrhage; the latter will cease spontaneously in 76% of cases. A major rebleed is seen in 24% of cases within 12 h, but in 33% rebleed will cease spontaneously.

Large ulcers (greater than 2 cm diameter) and ulcers located high on the lesser gastric curvature or in the postero-inferior bulb are more prone to bleed profusely; pyloric ulcers bleed less. High risk patients poorly tolerating rebleeding lesions and surgery, and high risk endoscopic lesions (visible vessel seen in 20 to 40%) both carry a risk of 30 to 40% for a major rebleed.

Severe ulcer bleeding is arterial in origin. Breached arteries are found at surgery and from post mortem studies in 50% of
severe ulcer bleeding. A small artery often runs across the base of the ulcer in the submucosa; due to the collateral circulation, such an artery may bleed from both sides of the breach, often intermittently, denoting dominance fluctuating between the fibrinolytic process and the arterial pressure.

The trend over recent years has been to treat severe bleeding conservatively with cimetidine, blood volume replacement, monitoring and early diagnostic and therapeutic endoscopy. Cimetidine as an adjunct has been associated with a decrease in the incidence of rebleeding (cimetidine 11% versus placebo 36%). Early transfusions have been held responsible for a reverse in the hypercoagulation response to hemorrhage and rebleeding.

For therapeutic endoscopy of bleeding lesions, a thermal current delivered to tissue produces obliteration of bleeding vessels either by shrinkage, constriction or activation of the blood clotting mechanism. It is effective to obliterate vessels less than 2 mm diameter. Larger vessels (2 to 4 mm) are more successfully obliterated by physical apposition of the artery walls (compression) combined with sealing (heat fibrin activation). Contact probes such as monopolar and bipolar electrodes and heat probe favour coaptation; they are superior to YAG laser for bleeding peptic ulcers.

Injection methods are increasingly used, as they are cheap and simple to perform. Injected material produces arterial constriction or interstitial swelling; its efficacy is volume- and solution-dependent. Ethanol 98% polidocanol with or without vasoconstrictors (adrenaline) are most widely used, but up to now controlled study designs are lacking and combined techniques difficult to assess. Laser techniques cause fewer tissue adhesions and no clot dislodgement; however, they seem less effective than any contact probe and are very expensive. Early enthusiasm with laser is on the decline for the treatment of bleeding lesions.

Complications of therapeutic endoscopy are less than 2% with contact probes, 5% with injection techniques and 9% with laser; laser may increase bleeding in 13 to 25% of cases compared to contact probe (1 to 5%) or injections (8 to 18%). Some areas of the gut are less accessible to therapeutic endoscopy: the bulb and the postpapillary regions are more difficult to treat. In general, initial failure to achieve hemostasis is seen in 0 to 18%, precipitation of uncontrolled hemorrhage in 1 to 9% and recurrent bleeding leading to surgery in 9 to 17%.

ULCER BLEEDING

From a new approach in recent years, two meta-analyses – one from Stanford University in California and one from McMaster University in Hamilton, Ontario – allowed review of a tremendous amount of data. The first study on stress ulceration analyzed 42 relevant trials and 4409 patients. Although overt gastrointestinal bleeding is decreased by prophylaxis with antacids, H2 blocking agents achieve this result more efficiently. However, the mortality in critically ill patients is not decreased. The second study identified from the English literature 36 randomized clinical trials of endoscopic hemostatic therapy by thermal or injection techniques. Mortality and morbidity are markedly decreased in patients with acute nonvariceal upper gastrointestinal hemorrhage, but this is clinically evident only in patients with high risk endoscopic features of actively bleeding ulcers and nonbleeding visible vessels.

A major contribution in the area of gastrointestinal bleeding came from the Department of Surgery of Hong Kong University (Dr F Brunicardi) Queen Mary Hospital group. This group produced seven reports on prospective trials from a large population of patients with initial endoscopic diagnoses of acute gastrointestinal bleeding (five years, 1530 patients). High-risk patients are more than 60 years old, have a severe concomitant illness, have shown clinical evidence of shock, had blood requirements beyond seven blood transfusions and showed endoscopic stigmata of actively bleeding ulcers (spurring, oozing, clot adherent to ulcer base) or a visible vessel.

The mortality in acute bleeding ulcers is 34.6%. With conservative treatment (antacids and H2 blockers), 30 and 40%, respectively, required emergency surgery. If rebleeding occurs, 32.5% require emergency surgery. Death is due to respiratory failure in 41.7% and hemorrhage in 13.9%. Surgical mortality is 28.2% for vagotomy and pyloroplasty and rises to 51% with antrectomy. The postoperative rebleeding mortality is 43.5%, and death after a second operation is 40%, from bleeding in one-half of cases.

The surgical risk is 10 times greater in patients with endoscopic stigmata of recent bleeding.

Therapeutic endoscopy compared to conservative therapy has markedly decreased morbidity (endoscopy 2.8% versus conservative therapy 36.4%) by decreasing rebleeding, hospital stay and blood requirement.

There were eight papers on injection methods of therapeutic endoscopy. Heat probe produced hemostasis in 90 to 98% of cases with minimal complications. The efficacy of the ethanol and/or adrenaline injection technique is 86 to 94%; the rebleeding rate in general varied between 10 and 20% for either group.

Other substances used include a resin which solidifies in in seconds after contact with blood (N-butyl-2-cyanoacrylate), a gel foam which disappears from the tissues within two weeks, and gelatin. These are all effective but not superior to probe techniques. Japan is investigating a new water jet laser. Finally, one surprising study of 80 Dieulafoy ulcers described hemostasis of 98.8% with absolute alcohol injection. A new probe for perendoscopic ultrasound detection of vessels at the base of gastroduodenal ulcers has been assessed clinically.

All of these data demonstrate that the future is directed towards the endoscopic management of most upper gastrointestinal bleeding lesions in high risk patients, even in the case of rebleeding, considering the very unfavorable prognosis of a surgical approach.

VARICEAL BLEEDING

Variceal bleeding of 63 patients studied in Italy revealed that among eight markers predictive of hemorrhage, only two were of significant value: 'red whale marking' and 'red spots'. The mortality from endoscopic sclerotherapy using ethanolamine in Japan was 11.1% immediately after endos...
Endoscopic sclerotherapy, 22% after one month and 42% after 17 months.

Total disappearance of esophageal varices generally occurred after five or six sessions. In this last study, new varices appeared in 9.3% and rebleeding in 12.9%. Morbidity was high with esophageal ulcers in 12.7% and stenosis in 4.2%.

Another Japanese study, in which 107 endoscopic sclerotherapy procedures with ethanolamine were performed, showed a mortality from hepatic failure of 78%, from hepatic carcinoma of 23% and from bleeding of 6%. Survival rates at one, three and seven years were 78, 67 and 45%, respectively.

Rebleeding was 9% at one, 22% at three and 31% at seven years; improved survival with additional endoscopic sclerotherapy was 56% at three years and 37% at seven years.

Variceal recurrence following endoscopic sclerotherapy of 48 Child A and B patients in Italy was 65% at three years; 33% had rebleeding.

A large, Italian, endoscopic study of 788 patients showing esophageal varices revealed that 72.3% were bleeding from varices. Stigmata of esophageal bleeding were seen in 98.3% when endoscopy was performed within the first 24 h. If endoscopy was performed more than 24 h later, stigmata were seen in only 57.2%. One prospective study of 120 patients undergoing endoscopic sclerotherapy with low dose ethanolamine, e.g., 5 mL per varix and a total dose of 20 mL, revealed a decreased complication rate of 29 versus 68% with higher doses. Adding balloon tamponade and/or vasopressin to endoscopic sclerotherapy does not improve outcome in acute bleeding.

Finally, a comparison of prophylactic endoscopic sclerotherapy with surgical transabdominal ligation did not reveal a significant difference in 91 patients.

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