Shock news for gall stones

The first reports of successful dissolution of cholesterol gall stones with chenodeoxycholic acid were widely regarded as a triumph of clinical investigation.1 This treatment, which prompted the desaturation of cholesterol in gall bladder bile, was an entirely logical development once the physicochemical basis for the formation of cholesterol gall stones had been described.3 Subsequent enthusiasm for this alternative to cholecystectomy has, however, been tempered by two factors: disappointing efficacy, and a high rate of gall stone recurrence.

The large United States National Cooperative Gallstone Study showed that the gall stone dissolution rate in patients treated with "high dose" chenodeoxycholic acid was only 13-5%.4 In retrospect the "high dose" used was inadequate for most of the patients treated, but in a study that used optimal dosage of chenodeoxycholic acid gall stones were dissolved in only 38% of the 125 patients treated.5 Retrospective analysis of this study identified a subgroup of "ideal" patients whose dissolution rate was 76%. Nevertheless, the overall dissolution rate of just over a third reflects worldwide experience. Other bile acids, in particular ursodeoxycholic acid, have been studied as possible alternative treatments either alone6 or in combination with chenodeoxycholic acid7 or with the triterpene Rowachol.8 None of these regimens has been proved to be more effective than chenodeoxycholic acid alone.

Thus only a minority of patients treated with bile acids will have their gall stones dissolved, and then half of those who do can expect stones to recur within two years of stopping treatment.9 Recurrence may not be preventable. The final results of a multicentre trial that followed up patients whose gall stones had been dissolved were presented last week at the jubilee meeting of the British Society of Gastroenterology and showed that neither low dose ursodeoxycholic acid nor a high fibre diet prevented recurrence of stones. Clinical gastroenterologists have now had the chance to weigh treatment with bile acids in the balance, and most have found it wanting.

The search for new agents to dissolve gall stones continues. In a preliminary report from the Mayo Clinic methyl tert-butyl ether, delivered into the gall bladder by percutaneous transhepatic cannulation of the biliary tree, dissolved cholesterol gall stones after six or seven hours in two of the three patients treated.10 At a meeting held last week at the Royal Society of Medicine, Dr Johnson Thistle updated the Mayo Clinic's experience with this technique: transhepatic cannulation of the gall bladder was possible in all of the 48 patients with radiolucent gallstones who have now been studied, and stones were dissolved in all but one of the patients treated with methyl tert-butyl ether. Although leakage of bile occasionally followed the procedure, surprisingly this was not an important complication. These pioneering results are impressive, but the technique demands considerable skill, which may limit its widespread usefulness. We must await results from other series before making a more definitive judgment.

The non-surgical treatment of stones has now entered a new era with the report of successful fragmentation of stones with extracorporeal shock wave lithotripsy. First introduced for the treatment of kidney stones, the lithotripter has been adapted for use in the biliary tree. Sauerbruch and colleagues from Munich fragmented radiolucent gall bladder stones with the Dornier lithotripter in each of nine patients, and stone fragments disappeared in six of them within one to 25 weeks.11 During the meeting at the Royal Society of Medicine Professor Gustav Paumgartner updated the Munich experience as 200 patients have now been treated: 175 had solely radiolucent stones, and 25 had radiolucent stones with a calcified rim. Just over four fifths (83%) of the patients had a solitary stone of less than 30 mm diameter, and the remainder had two or three smaller stones. Adjutant treatment with a combination of chenodeoxycholic and ursodeoxycholic acids was given to dissolve stone fragments. Shock waves were generated by a high current underwater spark discharge and focused on the gall stone(s) with the aid of ultrasound with the patients immersed in water. Originaly shock waves were applied while the patients were under general anaesthesia, but increasingly this has been replaced by epidural or intravenous analgesia. Stones were fragmented in all but two patients. In patients with solitary stones the stone had disappeared in 34% by two months, in 84% within 12 months, and in all by 24 months. In patients with multiple stones 12% had lost their stones by two months, 40% by 12 months, and 75% by 24 months. Adverse effects were
generally mild; cutaneous petechiae were seen in 14%, transient haematuria in 3%, mild pancreatitis in two patients, and biliary colic (the presenting symptom) in 35%.

These results are exciting, but we must be cautious. There is no treatment that will dissolve fragments from stones containing calcium, and only patients with stones that are predominantly radiolucent (presumed cholesterol rich) can be considered for this treatment. The gall bladder must be radiologically functioning—that is, it must opacify during oral cholecystography and contract in response to a fatty meal. With the further restrictions on stone size and number, the Munich group thinks that perhaps only 5-10% of patients with gall stones referred for shock wave lithotripsy are in fact suitable for this treatment. Some modification may be necessary to the management after lithotripsy. Treatment with bile acids after stone fragmentation may speed dissolution and may reduce the incidence of biliary colic, but its inhibitory effect on gall bladder contraction might hinder expulsion of the residual debris. Comparables rates of recurrence of gall stones to those seen after dissolution with bile acids alone seem probable, although the follow up is thus far too short to provide data on recurrence. Finally, the technology is extremely expensive, with some systems costing more than £1m.

Less expensive systems are being developed. The Wolf lithotripter generates piezo-electric pulses that are transmitted through a water bath container. This obviates the need for the patient to be immersed in water and is so well tolerated that neither analgesia nor sedation is required. The Wolf device is being evaluated in the department of surgery at Sheffield University and also at the London Bridge Hospital.

The place of this product of the white hot technological revolution in managing patients with gall stones needs careful evaluation in a cool hour. For most patients cholecystectomy, which carries a mortality of 0-4% and a morbidity of 7%, still looks like a good option.

IAN FORGACS
Consultant Gastroenterologist,
King’s College Hospital,
London SE5 9S

Greeks bearing gifts

As early as 1980 the Royal College of General Practitioners and other organisations were predicting that the computerisation of general practice would produce a rich harvest of much needed software for practitioners that would promote standardisation and facilitate the collection of information. Unfortunately the Department of Health and Social Security has not been convinced of the need to sponsor high quality software for practitioners that would promote standardisation and facilitate the collection of information. In Scotland, in contrast, the Scottish Home and Health Department has supported a system that has gained wide acceptance. Some drug companies, particularly Ciba-Geigy, have offered free or cheap software to general practitioners, and the latest development is that VAMP Health, a major supplier of general practice computer systems, has offered 1000 free computers to practices and AAH Meditel, another supplier, has offered 2000. If these offers are taken up then the number of computerised practices will be increased sixfold. In exchange, the companies will collect and sell data centrally. When these two companies are willing to offer as much and more than our negotiators have been requesting of the DHSS it may seem churlish to raise doubts, but we must look carefully at the offers. Indeed, the General Medical Services Committee has already drawn attention to the benefits and disadvantages, issued guidelines, and is to coordinate an independent advisory body to oversee the schemes.

The first concern is confidentiality. Although isolated practice microcomputers are as secure as manual records, one third of patients perceive them as threatening confidentiality. Doctors must ensure that not only is confidentiality preserved but that it is seen to be preserved. The protocols for information exchange between the practices and the external organisation must be strictly applied. Patients must not be identifiable, and the practice’s identity must be hidden from the user who buys the information; the external organisation should never interactively quiz the practice’s database through electronic links.

If the information from these systems is to be valuable it must be of high quality. The purchasers are unlikely to pay the high charges envisaged for information that is incomplete or inaccurate. Data collection is difficult and requires a change in working habits; many practices have not yet adapted to manual recording. Yet in one scheme practices will default on their contracts if any partner fails to record 95% of all prescriptions and encounter diagnoses, and the financial penalties for failing will be substantial. The problem of motivating all partners to record to high standards was illustrated in one research practice, where at the end of the first year three partners had virtually abandoned using the computer during consultations and the other two used it in under half their consultations.