

## Gastroenterology and hepatology

PROGRESS IN NEW DIAGNOSTIC TOOLS and therapeutic strategies has been rapid in gastroenterology and hepatology, and pending advances include the use of magnification endoscopy with dye spraying to detect early cancers, and endoscopic sewing procedures for reflux oesophagitis.

**Prevention.** Genetic tests have recently been developed for the hereditary colon cancer syndromes (< 3% of all colon cancers). This major advance helps to identify

at-risk family members, so that premalignant lesions and early cancers can be removed, and those who are not carrying the gene can be reassured. Accuracy in both familial adenomatous polyposis (FAP) and hereditary non-polyposis colon cancer (HNPCC) approaches 100%, as long as the index case is positive for the mutation tested. The rate of carriage of an easily identifiable mutation is about 80% in FAP, but presently substantially less in HNPCC.<sup>1</sup> Pilot testing of population screening for common (sporadic) colorectal cancer is about to begin in Australia. More specific immunochemical tests for occult gastrointestinal bleeding are now available.

**Diagnosis.** First described in 1991, magnetic resonance cholangiopancreatography (MRCP) continues to evolve. It produces diagnostic-quality images of normal and diseased biliary ducts, is non-invasive, and does not require contrast media or ionising radiation (see Figure). MRCP is gradually replacing invasive techniques, such as endoscopic retrograde cholangiopancreatography (ERCP) and percutaneous transhepatic cholangiography, for purely diagnostic imaging, leaving these procedures for interventional or problem cases. MRCP is indicated for detecting biliary stenosis and level of obstruction, and depicting the biliary tree on both sides of the stricture. It is also useful in identifying cases of choledocholithiasis likely to benefit from ERCP calculus removal. Avoiding intubation of the biliary tree decreases the risk of bacterial colonisation in cases of biliary stricture (including primary sclerosing cholangitis [PSC]) and choledocholithiasis. MRCP is not particularly good for detecting ampullary calculi, or assessing chronic pancreatitis or the very early changes of PSC. Availability is the main limiting factor to its widespread use.<sup>2</sup>

**Intervention.** Localised *hepatocellular carcinoma* (HCC) in patients with non-cirrhotic livers is best managed by surgical resection. Liver transplantation has been associated with excellent long term survival in highly selected cases of cirrhosis, but is limited in Australia by a small donor pool. Effective local control of small HCCs has been achieved with percutaneous ethanol injection (PEI), and radio-frequency ablation (RFA). The main determinant of outcome is the size of the tumour. PEI, under ultrasound or computed tomography guidance, is simple, inexpensive and safe in patients with advanced cirrhosis. It is suitable for HCCs less than 3 cm in size, with fewer than three nodules, but multiple treatments may be required. There is minimal discomfort, so it can be performed as an outpatient proce-



dure. RFA involves placing the needle electrode percutaneously with laparoscopic control or ultrasound guidance under local anaesthesia. However, heavy sedation or anaesthesia may be required as significant pain may occur. Both PEI and RFA have very low complication rates, and treatment can be repeated for recurrence or new lesions. Long-term survival rates have been reported at over 70% (three

years) and over 40% (five years), but unfortunately no randomised controlled trials have been performed.<sup>3</sup>

The management of *chronic hepatitis B infection* has changed recently with approval of lamivudine, a nucleoside analogue and potent inhibitor of viral DNA replication. Sustained viral inhibition is seen within four weeks in over 95% of cases, with 15%–20% becoming e-antigen negative at 12 months. There is also evidence that liver fibrosis and inflammation decrease during therapy, even without seroconversion. A high proportion of patients with hepatitis B e-antigen seroconversion (73%) have a sustained virological remission for up to 19 months (median). As with other therapies, loss of surface antigen is relatively uncommon. The development of a drug-resistant mutant form of the virus (YMDD) emerges with prolonged therapy (about 50% at three years), and can be associated with significant flares of hepatitis.<sup>4</sup>

Infliximab, a cytokine-directed biological therapy, represents a significant advance in the understanding of *Crohn's disease*. This chimeric monoclonal antibody blocks tumour necrosis factor  $\alpha$  (TNF- $\alpha$ ), a key cytokine in bowel inflammation. Therapy results in rapid reduction in the signs and symptoms of Crohn's disease in two-thirds of cases, with a decrease in bowel inflammation, and improved mucosal healing and quality of life. Three infusions are given for fistulous disease and rapid closure occurs usually within two weeks, with a median benefit exceeding three months. Serious adverse events are infrequent and have been successfully managed with medications. However, the cost of this therapy currently restricts widespread use. Allergic reactions are also a serious consideration, but may be addressed in the future with modified molecules already in trial.<sup>5</sup>

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