concluded that they did not show sufficient evidence regarding the treatment of varicoceles to warrant their repair.[9 10] However, these studies were chosen for this review only because of to their status as randomised clinical trials; no evaluation of the methods was performed. On review of these trials, one examined only subclinical varicoceles, and three others exhibited methodological problems including the use of embolisation, high pregnancy rates in untreated couples (25% in a one year period), and inherent selection bias in the study (many couples opted to pursue assisted reproductive technology rather than enter the study).

The one study that did show sizeable benefit was a randomised crossover design, in which over 50% of couples who underwent repair achieved pregnancy compared with 10% in the untreated couples. When the untreated couples were then crossed over and treated, another 50% became pregnant in the following year. However, men with severe oligospermia were excluded from this trial.[11] Furthermore, preliminary data from an ongoing prospective randomised controlled trial have shown a fourfold increase in the spontaneous pregnancy rate in men with treated varicoceles compared with the control group.[12] Although some of the reviewed studies had flaws, these findings raise the valid point of why most men with varicoceles are fertile, as well as why some infertile men with varicoceles do not improve after repair.

Although few randomised controlled trials show the benefit of treating varicocele related infertility, many non-randomised studies support this concept.[12] A published review performed a careful analysis examining the issue of treatment outcome after varicocelectomy. Numerous studies were reviewed, most retrospective, and the following conclusions made. Most participants showed improvement in postoperative sperm density and motility. The natural pregnancy rates varied, but the overall average was 37%, a clearly higher figure than any reported for non-treatment. Although many of these studies suffer from the flaws of non-randomised trials, these results would be difficult to explain on the basis of chance alone.

Varicoceles continue to stimulate controversy among reproductive experts. Despite conflicting evidence from both randomised and non-randomised trials, clinical experience still favours the surgical treatment of clinical varicoceles in men with infertility. However, it is incumbent on fertility specialists to design and recruit participants (or patients) in randomised, properly controlled trials to reach a definitive conclusion.

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Competing interests: None declared.

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Management of acute pancreatitis

Role of antibiotics remains controversial

Acute pancreatitis is a common surgical emergency. The incidence in the United Kingdom has been reported to be as high as 38 per 100 000 per year and increasing. Around 25% of patients develop severe or life threatening complications, requiring support in high dependency or intensive care units. Mortality has fallen from 25-30%, 30 years ago, but has remained at 6-10% for most of the past two decades.[1] The initial improvement did not occur because of any specific treatment for acute pancreatitis but because of improved supportive treatment, especially advances in critical care. This supportive treatment may include a role for prophylaxis with antibiotics in acute pancreatitis.

The rationale for prophylaxis with antibiotics is based on the fact that mortality for infected pancreatic necrosis is higher than that for sterile necrosis, and a potential window of opportunity exists during the first to third weeks for prevention of infection by giving prophylactic antibiotics. A recent Cochrane review supports this view.[2] Despite this, the role of antibiotic prophylaxis in acute pancreatitis remains controversial. Questions remain unanswered as to choice and duration of treatment. Risks exist of encouraging antibacterial resistance and opportunistic fungal infections. Moreover, preliminary reports of two new trials do not confirm the benefits of prophylaxis with antibiotics.

The practice of antibiotic prophylaxis in acute pancreatitis is widespread. A survey of 1103 surgeons in the United Kingdom and Ireland showed that prophylactic treatment with antibiotics was used by 88% of 528 responding surgeons, of whom 24% used it in all patients.[3] Mild acute pancreatitis is a short lived and self limiting disease. A policy of giving antibiotics to all patients with acute pancreatitis can therefore not be supported. The task is to identify which subgroup of patients will benefit from prophylactic antibiotics during the course of an attack of acute pancreatitis.

BMJ 2004;328:968–9

Existing guidelines on the management of acute pancreatitis reflect the controversial nature of this subject. The guidelines of the British Society of Gastroenterology offer no specific recommendation.[4] The practice guidelines of the American College of Gastroenterology say that it is reasonable to initiate treatment with antibiotics in patients with necrotising pancreatitis.[5] The guidelines on the surgical management of acute pancreatitis of the International Association of Pancreatology are the most recent.[6] Its recommendation—that prophylactic broad spectrum antibiotics reduce infection rates in necrotising pancreatitis proved on computed tomography but may not improve survival—reflects the uncertainty of the evidence that has emerged from the trials undertaken to date.

A Cochrane review recently undertaken by Bassi et al examined four of nine randomised controlled trials related to antibiotic prophylaxis in acute pancreatitis.[2] This choice was based on all four studies having similar entry criteria: the presence of pancreatic necrosis proved by contrast enhanced computed tomography. However, variations were seen in drug agent, case mix, duration of treatment, and methodological quality. There were no double blind studies. The meta-analysis showed an advantage for antibiotics for the two primary end points—all cause mortality and rates of infection of pancreatic necrosis. The reviewers therefore recommend the use of broad spectrum antibiotics active against enteric organisms (cefuroxime, imipenem, or ofloxacin with metronidazole) for one to two weeks, in patients with proved pancreatic necrosis.

However, serious concerns exist about such a policy. In a study by Beger et al carried out before antibiotic prophylaxis became widely used, organisms cultured from infected pancreatic necrosis were predominantly of gastrointestinal origin (*Escherichia coli* and *Bacteroides* spp).[7] The microbiology results of a more recent study, comparing perfloxacin and imipenem in pancreatic necrosis, were dominated by methicillin resistant *Staphylococcus aureus* and *Candida* spp.[8] This development is important because evidence is beginning to emerge which indicates that infection with fungi and drug resistant organisms is associated with a significantly increased mortality.[9] More data on possible adverse effects with prophylaxis with antibiotics are clearly required.

Furthermore, preliminary results from two further randomised controlled trials have recently been presented, which fail to show a benefit for prophylaxis with antibiotics.[10 11] The first double blind study of prophylaxis with antibiotics in acute pancreatitis has been undertaken by Isenmann et al, who compared ciprofloxacin and metronidazole with placebo in patients with severe acute pancreatitis. This did not reduce the incidence of infected necrosis or mortality. The authors therefore advocate that a policy of antibiotic treatment on demand should replace prophylaxis with antibiotics. Specific indications for antibiotic treatment would include a newly developed systemic inflammatory response syndrome, progressive organ failure, and clinical deterioration, with or without evidence of bacterial infection. This study may lead us to a more rational approach to the use of antibiotics in acute pancreatitis.

Despite this controversy, the Cochrane reviewers' recommendation of the use of broad spectrum antibiotics active against enteric organisms, in patients with pancreatic necrosis proved with computed tomography for one to two weeks, is a reasonable one given current evidence. Progress will be made, however, and adverse effects minimised when the indications for the use of antibiotics in acute pancreatitis are refined further and made more specific.

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Competing interests: None declared.

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Payment by results—new financial flows in the NHS

The risks are large but may be worth while because of potential gains

A revolution is happening in the money flows around the NHS in England. "Payment by results" is essentially a way of paying providers a fixed price for each individual case treated.[1] Each case, say an admission to hospital, will be grouped into a healthcare resource group according to the treatment carried out and the clinical condition of the patient. Then a fixed price or tariff will be assigned to each healthcare resource group, based on the national average cost of treatment in NHS trusts in England. From 1 April 2004 locally determined tariffs apply to the growth in activity for 48 healthcare resource groups, covering all surgical and most medical specialties. From April 2005 nearly all specialties will be commissioned on this basis, with the national tariff being phased in over three years. By 2008 all health care will

BMJ 2004;328:969–70