A systematic review on endoscopic detection rate, endotherapy, and surgery for pancreas divisum

CRD summary
The authors concluded that endoscopic detection rates for pancreas divisum were higher in western than in Asian countries. Response rates of patients with pancreas divisum to endotherapy and surgery were similar. Limitations in the search, questionable analysis and poor quality of included studies mean that these conclusions are unlikely to be reliable.

Authors' objectives
To determine endoscopic detection rates for pancreas divisum and pain relief rates in patients with pancreas divisum after endotherapy or surgery.

Searching
MEDLINE (1950 to May 2008) was searched using the term "pancreas divisum". Reference lists of retrieved studies were screened. The review was restricted to published English-language studies.

Study selection
Primary studies (excluding case series) that reported data on endoscopic retrograde cholangiopancreatography (ERCP) detection rates for pancreas divisum or that reported long-term (>6 months) follow-up data on complete or partial pain relief following endotherapy or surgery in patients with pancreas divisum proven by ERCP were eligible for inclusion.

Mean duration of follow-up ranged from 14 to 60 months in studies of endotherapy and from six to 120 months in studies of surgery.

The authors did not state how studies were assessed for inclusion.

Assessment of study quality
Study quality was not formally assessed.

Data extraction
Data were extracted on the proportion of patients found to have pancreas divisum among those who underwent routine ERCP and on response rates (proportion of patients with complete, partial or overall pain relief at follow-up) in patients who underwent endotherapy and/or surgery.

Data extraction was carried out independently by two reviewers.

Methods of synthesis
Data on endoscopic detection rates were pooled separately for studies from USA, Europe and Asia. Data on the proportion of patients with complete or partial pain relief were pooled for all patients combined and separately according to type of pancreas divisum (acute recurrent pancreatitis, chronic pancreatitis or pain secondary to pancreas divisum). The difference in proportions between groups was compared using the $\chi^2$ test.

Results of the review
Forty-five studies were included in the review: 17 assessed ERCP detection rates (n=31,413); 15 assessed endotherapy (one randomised controlled trial and 14 retrospective case series, n=520); and 13 assessed surgery (one prospective study and 12 retrospective case series, n=271).

The overall pooled endoscopic detection rate was 2.9%. Pooled rates were significantly lower in Asia (1.5%, six
The proportion of patients with complete or partial pain relief following endotherapy (69.4%, range 33% to 100%) was similar to that following surgery (74.9%, range 50% to 100%, p=0.106). Response rates were similar for endotherapy and surgery when stratified according to type of pancreas divisum. Response rates were significantly higher among those with acute recurrent pancreatitis (81.2%, 15 studies) than for those with chronic pancreatitis (68.8%, seven studies) (p=0.029), which was significantly higher than the response rate for those with pain secondary to pancreas divisum (53.1%, nine studies) (p=0.030).

Authors' conclusions
The endoscopic detection rate for pancreas divisum was higher in western countries than in Asian countries. Response rates of patients with pancreas divisum to endotherapy and surgery were similar. Patients with acute recurrent pancreatitis-type pancreas divisum responded better to endotherapy and surgery than those with chronic pancreatitis-type pain.

CRD commentary
The review addressed a clear question supported by defined inclusion criteria. The literature search included only one database and the review was restricted to published English-language studies, so there was a possibility that relevant studies may have been missed and the review may be subject to language and publication biases. Appropriate steps were taken to minimise bias and errors in data extraction of data; it was unclear whether such steps were taken when assessing studies for inclusion. Study quality was not formally assessed and so validity of the included studies was unclear; given the designs of the included studies this is likely to have been poor. Very few details on included studies were reported. Methods used to pool studies appeared to involve simple summing of figures across studies; the appropriateness of this was questionable. The limited literature search, questionable analysis and poor quality of included studies mean that the authors' conclusions are unlikely to be reliable.

Implications of the review for practice and research
Practice: The authors stated that endoscopic therapy was a reasonable first-line treatment option of pancreas divisum, depending on patient preference. Patients with acute recurrent pancreatitis-type pancreas divisum were the best candidates for endotherapy or surgery; patients with chronic pancreatitis or pain-type pancreas divisum were less likely to benefit.

Research: The authors did not state any implications for research.

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