Meta-analysis of prophylactic corticosteroid use in post-ERCP pancreatitis
Zheng M, Bai J, Yuan B, Lin F, You J, Lu M, Gong Y, Chen Y

CRD summary
This review found that there are no significant benefits in prophylactic corticosteroids in patients scheduled to undergo endoscopic retrograde cholangiopancreatography (ERCP) and/or endoscopic sphincterotomy. Despite poor reporting of some aspects of review methodology the authors’ conclusions were likely to be reliable.

Authors’ objectives
To evaluate the effectiveness and safety of prophylactic corticosteroids for the prevention of post-endoscopic retrograde cholangiopancreatography pancreatitis (PEP)

Searching
Trials in any language were identified through a computerised bibliographic search of MEDLINE (Jan 1966 to June 2007), EMBASE (Jan 1966 to June 2007), Chinese Biomedical Literature Database (CBMdisc) (Jan 1978 to June 2007) and the Cochrane Central Register of Controlled Trials (2nd Quarter, 2007). The references of retrieved articles were searched for additional studies. Search terms were reported.

Study selection
Randomised controlled trials (RCTs) comparing corticosteroids with placebo were eligible for inclusion. Patients aged over 18 years scheduled to undergo endoscopic retrograde cholangiopancreatography (ERCP) and/or endoscopic sphincterotomy were eligible for inclusion. Patients with active acute pancreatitis were excluded. Included trials were in diagnostic or both diagnostic and therapeutic ERCP. The primary outcomes assessed were PEP, severe PEP and case-fatality ratio of PEP. Secondary outcomes included post-ERCP hyperamylasemia and abdominal pain.

Co-interventions were permitted if administered equally to all groups. Included studies administered oral or IV corticosteroids before ERCP at dosages ranging from 40 mg to 125 mg.

Two reviewers independently assessed potentially eligible trials for inclusion and disagreements were resolved by consensus.

Assessment of study quality
Trials were assessed for randomisation, blinding, dropouts and withdrawals and assigned a Jadad score between 0 and 5. A trial was considered low quality if it scored 2 or less, while a high quality trial scored at least 3. The authors did not state how the validity assessment was performed.

Data extraction
The authors stated neither how the data were extracted for the review nor how many reviewers performed the data extraction.

Methods of synthesis
The pooled OR and corresponding 95% confidence intervals (CIs) were calculated using the general inverse variance fixed-effect model (where there was no evidence of heterogeneity) and a random-effects models using the DerSimonian and Laird method (where statistically significant heterogeneity was observed). Subgroup analyses stratified by setting (multicentre and single centre) and by low and high quality trials. Sensitivity analyses excluded trials where allocation concealment was inadequate or unclear, unblinded trials and trials published as abstracts only.

Publication bias was assessed using Begg and Egger's tests and the results were displayed visually using funnel plots.

Results of the review
Seven RCTs (n=2,632) were included in the review in which 299 patients experienced PEP. Of these, 157 (12 per cent)
were randomised to corticosteroids and 142 (11 per cent) received placebo. Two trials were considered low quality and five considered high quality.

There were no significant differences between groups in PEP (seven trials, OR 1.13, 95% CI: 0.89, 1.44, p=0.32), severe PEP (five trials, OR 1.61, 95% CI: 0.74, 3.52, p=0.23) or post-ERCP hyperamylasemia (two trials, OR 0.92, 95% CI: 0.57, 1.48, p=0.73). There was no association between corticosteroid use and case fatality, although adverse effects were reported in three trials. Post-ERCP abdominal pain was not reported in the included trials. No significant heterogeneity was observed for any outcomes.

Subgroup analyses stratifying results by setting and quality did not change the results. Sensitivity analyses showed that outcomes were consistent based on allocation concealment, blinding and trials published as abstracts.

There was no evidence of publication bias.

Authors’ conclusions
There was no statistically significant benefit of prophylactic corticosteroid use for prevention of PEP.

CRD commentary
The review addressed a clear question in terms of inclusion criteria, study design and outcomes of interest. A number of relevant electronic databases were searched for trials in any language and search terms were reported. There were no attempts to identify unpublished trials. Steps were taken to minimise bias and errors in decisions about study relevance, but review methods used in data extraction and study validity were not reported. There were limited details regarding study participants. The decision to use meta-analysis with sub-group and sensitivity analyses appeared appropriate. Statistical heterogeneity was investigated and was not significant for any outcomes. The authors’ conclusions were likely to be reliable despite some limitations in the reporting of review methods.

Implications of the review for practice and research
Practice: The authors stated that the use of corticosteroids as prophylaxis for PEP was not routinely recommended.

Research: The authors stated that further studies with standard administration of corticosteroids in ERCP were needed.

Funding
Not stated

Bibliographic details

PubMedID
18271973

DOI
10.1186/1471-230X-8-6

Original Paper URL
http://www.biomedcentral.com/1471-230X/8/6

Indexing Status
Subject indexing assigned by NLM

MeSH
Acute Disease; Cholangiopancreatography, Endoscopic Retrograde /adverse effects; Glucocorticoids /pharmacology /therapeutic use; Humans; Pancreas /drug effects; Pancreatitis /etiology /prevention & control; Randomized Controlled
Trials as Topic; Research Design

AccessionNumber
12008102419

Date bibliographic record published
09/08/2008

Date abstract record published
03/06/2009

Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.