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Perioperative corticosteroids for patients undergoing elective major abdominal surgery

Promotionsfach: Anaesthesiologie

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To further diminish sequelae of surgical procedures a comprehensive analysis of risks and benefits of high doses of perioperative corticosteroids in major abdominal surgery was conducted.

A. Search methods

The systematic literature search comprised a computerised search of MEDLINE, EMBASE, and The Cochrane Library, a computer assisted hand-search and a hand-search. Authors of articles selected in a preliminary literature search were enquired. So were best-known manufacturers/distributors of hydrocortisone, methylprednisolone and dexamethasone.

B. Selection criteria

Published and previously unreleased randomised controlled trials investigating perioperative corticosteroids no less than 100 mg prednisone equivalent (interventions) in patients undergoing elective major abdominal surgery were eligible for inclusion unless reports and thus trials did not provide information on the primary efficacy endpoint in-hospital-mortality due to any reason.

C. Data collection and analysis

The data on primary outcomes was extracted in duplicate by two researchers independent of one another using standardised data entry forms.

The effect on the primary efficacy endpoint was measured by a risk difference with 95 % confidence interval, that on additional primary outcomes by the raw mean difference and measure of uncertainty. Subgroup analyses included those for patients, i.e. surgical interventions.

D. Main results

After the preliminary literature search, 1377 references were searched and 26 sources selected that most likely referred to 19 studies.

Judged by those sources quality of studies was generally low.

17 studies in 643 patients (319 vs. 324) were included in the analysis of in-hospital-mortality (death prior to discharge from hospital) due to any reason. The meta-analysis was inconclusive with a pooled risk difference of -0.00 (95 % CI -0.03, 0.02) for treatments.

9 studies in 326 patients (162 vs. 164) were included in the analysis of duration of stay in hospital. The pooled mean difference was -1.04 (95 % CI -2.01, -0.08). Heterogeneity was considerable with $I^2 = 77\%$. However, patients under treatments were discharged from hospital earlier.

2 studies in 48 patients (23 vs. 25) were included in the analysis of duration of stay in intensive or intermediate care unit. This meta-analysis was inconclusive, again.

E. Authors' conclusions

There is substantial lack of evidence on the actual risks and benefits of high doses of perioperative corticosteroids for patients undergoing elective major abdominal surgery and more research is needed. However, the intervention may be considered at least for patients undergoing incision, excision, resection and anastomosis on small and large intestine.