

ANTIBIOTIC THERAPY AS SINGLE TREATMENT OF ACUTE APPENDICITIS

AKADEMISK AVHANDLING

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Avhandlingen baserar sig på följande delarbeten:

- I. Randomized clinical trial of antibiotic therapy versus appendicectomy as primary treatment of acute appendicitis in unselected patients. Hansson J, Körner U, Khorram-Manesh A, Solberg A, Lundholm K
Br J Surg 2009;96(5): 473-481.
- II. Antibiotics as first line therapy for acute appendicitis: evidence for a change in clinical practice. Hansson J, Körner U, Ludwigs K, Johnsson E, Jönsson C, Lundholm K
World J Surg 2012 May 9 (Epub ahead of print)
- III. A proposed model to select patients who may benefit from antibiotic therapy as the first line treatment of acute appendicitis at defined probability. Hansson J, Khorram-Manesh A, Alwindawe A, Lundholm K
Submitted for publication
- IV. Evaluation of procalcitonin as marker to predict efficacy in treatment of acute appendicitis following institution of antibiotic therapy for cure. Hansson J, Körner U, Lundholm K
Submitted for publication



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ABSTRACT

BACKGROUND

Appendectomy has been the established treatment of acute appendicitis during the last century, regarded as a simple and safe procedure, although hampered with postoperative complications and increased standard mortality. Modern research has indicated that selected patients with acute appendicitis can be treated by antibiotic therapy alone. The aim of this thesis was therefore to explore antibiotic therapy as single treatment of acute appendicitis in unselected adult patients. A secondary aim was to suggest a model for prediction of antibiotic response.

MATERIALS AND METHODS

Two prospective interventional studies were performed on consecutive patients with acute appendicitis. First, a randomized controlled trial (paper I) with 369 patients compared antibiotic therapy with appendectomy. Primary outcome was treatment efficacy and major complications. Second, a population based study (paper II) with antibiotics as first line therapy included 558 patients. The patients were followed for one year in both studies. In paper III, retrospective analyses of preoperative parameters for 384 patients were linked to the histopathological reports of resected appendices regarding the stage of appendicitis in order to create a model for prediction of antibiotic response. The model was then validated on the patients in the population based study (paper II). In paper IV we used the same patients as in paper II, where sequential measures of procalcitonin were analysed in order to evaluate the efficacy of initiated antibiotic therapy.

RESULTS

A majority of patients with acute appendicitis could be treated with antibiotics in both prospective studies; 5-10% were clinically judged to need primary surgery. The recovery rate on antibiotics was 91% in the RCT and 77% in the population based study. The recurrence rate after one year was 14% and 11% respectively. Antibiotic treatment displayed less overall complications compared to primary surgery in both studies. Complications after antibiotic therapy consisted mainly of side effects to the antibiotics or postoperative complications after rescue surgery, but intra-abdominal abscesses were also seen. Prediction models for patient selection, based on standard laboratory parameters, could identify patients with positive antibiotic response at increased probability but at low sensitivity. Procalcitonin had limited value for early evaluation of the efficiency of provided antibiotic therapy in acute appendicitis.

CONCLUSIONS

Acute appendicitis in unselected adults can be treated with antibiotics as single therapy with high recovery rate and low recurrence rate within one year. Antibiotics can be offered to a majority of patients without the risk of increased complications. Long-term follow up are warranted.

Keywords: Appendicitis, Antibiotic therapy, Appendectomy, Procalcitonin

