

<https://doi.org/10.35630/2199-885X/2019/9/3.17>

ANTIBIOTIC PROPHYLAXIS FOR PREVENTION OF SURGICAL SITE INFECTION IN EMERGENCY ONCOLOGY

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ABSTRACT — A prospective randomized controlled study was performed in 268 patients with complicated forms of colon cancer. The main group included 139 patients operated with doxycycline threads, and 129 patients operated with traditional sutures. The number of patients with complicated postoperative course in the main group (32.4%) was significantly lower than in the control (62.0%) ($p < 0.05$). The number of local complications in the main group (32.4%) was significantly lower ($p < 0.05$) than in the control (62.0%). Local complications caused lethal outcomes in 17.3% patients in the main group and in 31.8% of the control group ($p < 0.05$). The rate of surgical site infection in the main group (28.8%) was significant ($p < 0.05$) less than in the control (55.0%).

KEYWORDS — surgical site infection, antibiotic prophylaxis, doxycycline threads.

INTRODUCTION

To prevent a surgical site infections the implantation antibiotic prophylaxis is recently used [1, 2]. The use of this type of infections prevention in colon surgery appears to be promising [3] because such operations are accompanied with a high risk of operative wound contamination by intestinal microflora [4, 5] and high degree of biological leakage of anastomoses and intestinal sutures [6].

The purpose of the research was to study the efficacy of suture material with doxycycline in surgical operations for complicated forms of colon cancer.

MATERIALS AND METHODS

A prospective randomized controlled study was performed in 268 patients with complicated forms of colon cancer. In 120 patients the tumor was localized in the sigmoid colon, in 51 - in the cecum, in 26 - in the spleen bend of colon, in 29 - in the hepatic bend, in 42 - in other sections of the colon. Most often, the tumor process was complicated by obturative colon obstruction (184 patients - 68.7%), less by inflammatory infiltration or abscess in the region of tumor (45 patients - 16.8%) and tumor perforation with perito-

nitic (28 patients — 10.4%). Tumor bleeding was in 11 (4.1%) patients. There were 116 men and 152 women. The patients' age ranged from 30 to 92. Most of them (194 — 72.4%) were over 60.

All patients were urgently operated on. Radical operations (right-sided hemicolectomy, left-sided hemicolectomy, sigmoid and other colon resections) were carried out in 176 (65.7%) patients. Palliative operations like colostomies and bypass anastomoses — in 71 (26.5%) patients. 21 (7.8%) patients had just diagnostic laparotomies. All patients were divided into two groups which were comparable by sex, age and performed operations. The main group included 139 patients operated with doxycycline threads, and 129 patients were operated with traditional sutures.

In postoperative period we observed over the patients' condition and abdominal symptoms. The postoperative wounds were monitored. The general and local postoperative complications, as well as fatal outcomes were recorded, and its association to local complications was determined.

RESULTS

The number of patients with complicated postoperative period in the main group (32.4%) was significantly lower than in the control (62.0%) ($p < 0.05$). The postoperative fatality in the main group was 23.7%, but in the control group — 40.3%. The difference is not reliable ($p > 0.05$). The frequency of systemic postoperative complications was 24.5% in main group and 34.9% in control ($p > 0.05$). The fatal outcomes cause of general postoperative complications in the main group (6.5%) was not significantly different from the control (8.5%) ($p > 0.05$).

The frequency of local complications (anastomosis and sutures leakage complicated with peritonitis, as well as continued peritonitis, wound suppuration, phlegmon of abdominal wall, intestinal stenosis and etc.) in the main group (32.4%) was revealed to be significantly lower ($p < 0.05$) than in the control (62.0%). The same data were obtained from the analysis of fatal outcomes due to local postoperative complications. It caused the death in 17.3% patients in the main group and 31.8% in the control ($p < 0.05$).

The further analysis revealed that the frequency of surgical site infections in the main group (28.8%) was significantly lower ($p < 0.05$) than in the control (55.0%). The difference in the number of non-purulent

complications (like bleeding from the suture line, stenosis of intestinal stomas) in the main (3.6%) and control (7.0%) groups was statistically unreliable ($p > 0.05$). The above data allow to link the improvement of operation results in the main group with reduction of surgical site infections due to application of surgical suture material with antibiotic.

CONCLUSION

This variant of implantation antibiotic prophylaxis of surgical site infection (use of antimicrobial suture material with doxycycline) in abdominal operations for complicated forms of colon cancer is effective and appropriate for introduction into a wide clinical practice.

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