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Review Article

Peritoneal carcinomatosis treated with cytoreductive surgery and intraperitoneal chemotherapy

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ABSTRACT

Introduction: To evaluate the combined treatment with cytoreductive surgery and intraperitoneal chemotherapy for peritoneal carcinomatosis arising from colorectal cancer, pseudomyxoma peritonei and mesothelioma.

Methods: Data were obtained from 73 patients with peritoneal carcinomatosis arising from colorectal cancer (52.1%), pseudomyxoma peritonei (41.1%) or mesothelioma (6.8%) between 2002 and 2011. We reported the morbidity grade (II, III and IV), mortality and survival rates of the candidates after cytoreductive surgery and intraperitoneal chemotherapy.

Results: 41 (56.2%) women participated, and the median age was 50 years. Thirty-nine patients (53.4%) underwent complete cytoreductive surgery and intraperitoneal chemotherapy. Patients who underwent a complete cytoreduction received intraperitoneal chemotherapy with mitomycin C, from which only 16/39 (41%) had hyperthermic intraperitoneal chemotherapy (41–42 °C). The overall morbidity rate was 23.3% and the grade III/IV complication rate was 12.3%. The overall mortality rate was 5.5%. The univariate analysis showed that cytoreductive surgery and intraperitoneal chemotherapy ($p = .029$), a blood transfusion ($p = .002$) and the operative time ($p = .001$) were significant for the occurrence of postoperative complications. Patients with peritoneal carcinomatosis from colorectal cancer who underwent complete cytoreductive surgery and intraperitoneal chemotherapy had overall survival rates of 81.3%, 12.5% and 12.5% at 1, 3 and 5 years, respectively. Patients with peritoneal carcinomatosis from pseudomyxoma peritonei who underwent complete cytoreductive surgery and intraperitoneal chemotherapy had overall survival rates of 84.2%, 77.7% and 77.7% at 1, 3 and 5 years, respectively.

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Conclusion: The combined treatment for peritoneal carcinomatosis may be performed safely with acceptable morbidity and mortality in a specialized unit setting. Although over half of patients underwent normothermic intraperitoneal chemotherapy, our results were comparable to results from others centers.

Carcinomatose peritoneal tratada com cirurgia citoreductiva e quimioterapia intraperitoneal

Palavras-chave:
Cirurgia citorredutora
Quimioterapia intraperitoneal
Carcinomatose peritoneal
Cancer colorretal
Pseudomixoma peritoneal

RESUMO

Introdução: O objetivo foi avaliar o tratamento combinado da cirurgia citorredutora e quimioterapia intraperitoneal em pacientes com carcinomatose peritoneal secundária ao câncer colorretal, pseudomixoma peritoneal e mesotelioma.
Métodos: Foram obtidos dados de 73 pacientes com carcinomatose peritoneal secundária ao cirurgia citorredutora (52.1%), pseudomixoma peritoneal (41,1%) ou mesotelioma (6,8%). Foram avaliados o grau de morbidade, a taxa de mortalidade e as taxas de sobrevida após a cirurgia citorredutora e quimioterapia intraperitoneal.
Resultados: 41 (56,2%) pacientes do sexo feminino participaram, com média de idade de 50 anos. 39 pacientes (53,4%) foram submetidos a cirurgia citorredutora completa e quimioterapia intraperitoneal. Todos esses receberam Mitomicina C, sendo 16/39 (41%) quimioterapia intraperitoneal hipertérmica (41–42°C). A morbidade global foi 23,3%, com taxa de mortalidade global de 5,5%. A análise univariada mostrou que câncer colorretal e quimioterapia intraperitoneal (p = .029), transfusão sanguínea (p = .002) e tempo operatório (p = .001) foram associados com complicações pós-operatórias. Pacientes com carcinomatose peritoneal secundária ao cirurgia citorredutora submetidos a cirurgia citorredutora completa e quimioterapia intraperitoneal tiveram sobrevida global de 81,3%; 12,5% e 12,5% em 1, 3 e 5 anos, respectivamente. Os pacientes com pseudomixoma peritoneal que foram submetidos a cirurgia citorredutora completa e quimioterapia intraperitoneal tiveram sobrevida global de 84,2%; 77,7% e 77.7% em 1, 3 e 5 anos, respectivamente.
Conclusão: O tratamento combinado para carcinomatose peritoneal é seguro quando realizado em centros terciários com experiência no procedimento. Embora mais da metade dos pacientes tenham sido submetidos a quimioterapia intraperitoneal normotérmica após a cirurgia citorredutora completa, os resultados podem ser comparados a de outros centros que utilizam exclusivamente a quimioterapia hipertérmica.

Introduction

Peritoneal carcinomatosis (PC) is now considered to be a locoregionally advanced form of presentation rather than a widespread system disease. Peritoneal metastasis may arise from several cancers, including colorectal adenocarcinoma (CACR), pseudomyxoma peritonei (PMP), mesothelioma (MST), ovarian adenocarcinoma and sarcoma.[1–4] In the Sugarbaker protocol, the main course of therapy is to treat the macroscopic disease with complete cytoreduction surgery (CRS) and treat the remaining microscopic malignant peritoneal disease with intraperitoneal chemotherapy (IPC). This combined treatment for some types of carcinomatosis brought new horizons for patients previously considered terminal with near and inevitable fatal outcomes.[5] The results for patient survival with non-invasive cancers, such as PMP and MST, are better than those for patients with invasive cancer such as colorectal cancer.[6]

The intraperitoneal chemotherapy is usually delivered as an intraperitoneal temperature of 41.0–42.5 °C, the so-called HIPEC (hyperthermic intraperitoneal chemotherapy).[7] However, the role of hyperthermia is not validated by any randomized clinical studies. In fact, during the Sugarbaker initial experience the normothermic chemotherapy was used. When the comparison of survival between patients with colorectal cancer who received normothermic chemotherapy versus those who received hyperthermic chemotherapy was done, the survival median survival was 33 months in both groups.[8]

The aim of this study was to evaluate the morbidity and mortality associated with the peritoniectomy procedures and IPC (normothermic and hyperthemic) as well as survival in patients with PC treated at the University Hospital of the Federal University of Minas Gerais (UFMG), Brazil.

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