

ORIGINAL ARTICLE

Cytoreductive surgery and HIPEC for peritoneal carcinomatosis. A review on morbidity and mortality

Evgenia Halkia¹, Nikolaos Kopanakis², Georgios Nikolaou², John Spiliotis²

¹Peritoneal Surface Malignancy Unit, Iaso General Hospital, Athens, Greece; ²1st Department of Surgery, Metaxa Cancer Hospital, Piraeus, Greece

Summary

Purpose: To review morbidity and mortality of cytoreductive surgery (CRS) with hyperthermic intraperitoneal chemotherapy (HIPEC) for peritoneal carcinomatosis.

Methods: A literature search was conducted to identify studies from centers that perform CRS and HIPEC, and to collect and analyse data about morbidity and mortality.

Results: Twenty-five articles, published from 2006 to 2014 were reviewed. The studies included 24-1069 patients that had been treated with CRS and HIPEC for peritoneal carcinomatosis. The overall rate of severe perioperative morbidity ranged from 0 to 62% and the mortality rate varied from 0 to 10%. Major morbidity was correlated with age, peritoneal carcinomatosis index (PCI), comorbidities, number of

digestive anastomoses and institution where the treatment was performed.

Conclusion: Although the resultant morbidity is not negligible, with good patient selection this modality appears to be overall safe and effective in experienced hands. The results indicated that this treatment should be practised by institutions with expertise in the management of peritoneal carcinomatosis.

Key words: cytoreductive surgery, HIPEC, hyperthermic intraperitoneal chemotherapy, morbidity, mortality, peritoneal carcinomatosis

Introduction

Peritoneal dissemination from digestive cancers and gynecological malignancies is common. The primary peritoneal malignancies, such as peritoneal mesothelioma, are rare [1]. This condition is often associated with disease progression and poor prognosis and is traditionally regarded by the surgeon as a terminal condition.

In patients with recurrent colorectal (10-35%) and gastric cancer (50%), tumor recurrence is confined to the peritoneal cavity. These patients die from complications of locoregional tumor spread, in most cases without occurrence of metastases in other sites. Patients with peritoneal carcinomatosis from adenocarcinomas of nongynecologic origin have an average life expectancy of 6 months [2,3]. The two main mechanisms that are believed to contribute to the intraabdominal spread of can-

cer cells are either preoperative as a result of full thickness invasion of an organ by the cancer or intraoperative as a result of surgical manipulations [4]. Ovarian cancer spreads through exfoliation of malignant cells into the peritoneal fluid, disseminating along the abdominal and pelvic peritoneum, resulting in peritoneal metastases [5].

The understanding of tumors' biology and pathways of dissemination with intraperitoneal spread has prompted the concept that peritoneal carcinomatosis is a locoregional disease. The role of surgery in peritoneal carcinomatosis has slowly evolved from palliation to potentially curative therapeutic approach because systemic chemotherapy is not very efficient to treat intraabdominal tumor dissemination [6]. Over the past 2 decades, novel therapeutic approaches to peritoneal