

Results of Cytoreductive Surgery and Hyperthermic Intraperitoneal Chemotherapy After Early Failure of Adjuvant Systemic Chemotherapy

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Background and Objectives: Failure to respond to systemic chemotherapy is considered an exclusion criterion by some institutions for treatment with cytoreductive surgery and hyperthermic intraperitoneal chemotherapy (HIPEC). However, it is unknown if these patients benefit from HIPEC treatment. This study aimed to report on outcomes of HIPEC in patients who failed to respond to adjuvant systemic chemotherapy.

Methods: Patients were selected from a prospective database containing data on all patients who underwent HIPEC, using the following criteria: (1) Metachronous peritoneal carcinomatosis (PC) from colorectal origin, (2) adjuvant chemotherapy after primary tumor resection, (3) development of PC or local recurrence within 18 months after start of chemotherapy. Treatment and survival data were retrospectively collected.

Results: Twenty-one patients (29% male, mean age 57 years) were included. Median time to recurrence of disease was 9 months (range 2–15) after first chemotherapy administration. Median survival was 28 months (range 3–100). One- and 2-year survival were 71% and 43%, respectively.

Conclusions: Patients who initially failed to respond to systemic adjuvant treatment showed a survival after HIPEC similar to results reported in literature in patients with unknown responsiveness. Failure to respond to previous adjuvant systemic treatment should therefore not be considered an exclusion criterion for HIPEC treatment.

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KEY WORDS: colorectal cancer; peritoneal carcinomatosis; patient selection

INTRODUCTION

Peritoneal carcinomatosis (PC) originating from colorectal tumors has long been considered to be an incurable condition. Patients have therefore been treated in palliative support programs. Median survival is <13 months in patients receiving leucovorin and 5-fluorouracil-based chemotherapy schedules and might reach survival rates up to 18 months with combination therapies [1,2]. Recently, treatment of patients suffering from PC from colorectal origin has gained new interest because PC without visceral metastases is now considered as regional spread of disease rather than systemic metastasis. The availability of new local treatment strategies like cytoreductive surgery, hyperthermic intraperitoneal chemotherapy (HIPEC) and early postoperative intraperitoneal chemotherapy (EPIC) has been based on this disease concept [3,4]. Multiple institutions have reported promising results with these techniques [5–14].

A careful patient selection for this complex treatment is essential to prevent unnecessary toxicity. There is currently no uniformity in selection criteria worldwide, but good clinical performance status, age <75 years, absence of visceral and retroperitoneal lymph node metastasis, and no massive peritoneal disease. One of the controversies is the inclusion of patients in whom previous systemic therapy has failed, as it is unclear whether or not this group benefits from HIPEC. Response to systemic chemotherapy has been suggested as a selection criterion in patients in whom cytoreductive surgery and HIPEC is considered as a therapy, as this may allow selection of patients with biologically favorable tumor characteristics [15]. Patients who fail to respond to systemic chemotherapy, are excluded from intraperitoneal treatment in some studies reporting on treatment effects [5,16]. However, there is no evidence available in literature to date discussing whether or not these patients could derive benefit from treatment with HIPEC.

Aim of this study is to report on the outcomes of cytoreductive surgery and HIPEC in patients who failed to respond to adjuvant

systemic chemotherapy after primary resection preceding HIPEC procedures.

MATERIALS AND METHODS

Patient Selection and Data Collection

Data were obtained from a prospective database, including all patients who underwent cytoreductive surgery and HIPEC between 1997 and 2008 in the Netherlands Cancer Institute, Amsterdam. In our institute, cytoreductive surgery in combination with HIPEC is performed in patients with colorectal cancer since 1996. Eligibility of patients is based on performance status and resectability of the tumor. Data on previous treatments are recorded, but response to systemic chemotherapy is currently not used as a patient selection criterion [17].

Patients were selected by using the following criteria: (1) diagnosis of PC from colorectal origin, (2) metachronous presentation of disease, (3) treatment with adjuvant chemotherapy after primary resection, (4) presentation of recurrence of disease or development of PC within 18 months after start of adjuvant systemic chemotherapy, (5) treatment with cytoreductive surgery and HIPEC. A total of 21 patients was identified according to these inclusion criteria.

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