

## Review

## Curative treatment of colorectal peritoneal carcinomatosis: Current status and future trends

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**Abstract**

A new therapeutic approach to treat colorectal peritoneal carcinomatosis (PC) is becoming increasingly popular. Its main principle is to treat the macroscopic (visible) malignant peritoneal disease with complete cytoreductive surgery and, immediately after, to treat the remaining microscopic (non visible) malignant peritoneal disease with hyperthermic intraperitoneal chemotherapy (HIPEC).

This combined treatment has become the gold standard approach when feasible. It is associated with good oncologic results, considering a 5-year survival rate close to 40% when complete cytoreductive surgery is achieved, and acceptable surgical results, considering a post-operative mortality rate ranging from 3 to 5% and a postoperative morbidity rate ranging from 30 to 50%.

The exact effects of each steps of this combined treatment are currently unknown; therefore a randomized controlled trial is on going evaluating the real impact of HIPEC by itself (randomization with or without HIPEC after a complete cytoreductive surgery). One of the future indications of this combined approach might be its use in the very early development of PC. Indeed, early PC is currently only detectable and treatable during a second-look surgery, as recently demonstrated in high-risk patients. A trial is currently comparing the oncologic benefits of this second-look approach with HIPEC to the usual simple survey in patients with a high risk to develop PC.

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**Introduction**

Peritoneal dissemination or “carcinomatosis” from colorectal carcinoma is a form of disease progression which can affect 30–40% of patients.<sup>1,2</sup> Natural history studies show that peritoneal carcinomatosis (PC) is uniformly fatal, with median survival not exceeding 6 months.<sup>3</sup> For more than a decade, as an alternative approach to overcome this disease, a handful of centers have pursued aggressive cytoreductive surgery to resect macroscopic disease as much as possible, combining it with intraperitoneal chemotherapy (initially without and then with hyperthermia), to treat any residual occult disease.

The aim of this review is to report the current status of this novel combined treatment, focusing on issues that

have been solved and those which continue to pose problem and attempting to foresee future developments.

**A new therapeutic concept becoming increasingly popular***Concept*

In 1980, Spratt was the first to describe the combination of maximal cytoreductive surgery with hyperthermic intraperitoneal chemotherapy (HIPEC) to treat a recurring peritoneal pseudomyxoma,<sup>4</sup> but the main apostle of this method was PH Sugarbaker.<sup>5</sup> The main principles are: treating the macroscopic (visible) malignant peritoneal disease with complete cytoreductive surgery (CCRS), and immediately after, treating the remaining microscopic (non-visible) malignant peritoneal disease with HIPEC.

It is essential that surgery resects all tumor seeding greater than 1 mm because the chemotherapy bath cannot

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