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Editorial
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Cytoreductive Surgery with Hyperthermic Intraperitoneal Chemotherapy

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Editorial

Cytoreductive Surgery (CRS) in combination with Hyperthermic Intraperitoneal Chemotherapy (HIPEC) is a combined surgical procedure applied for the treatment of peritoneal carcinomatosis. Peritoneal carcinomatosis is a peritoneal malignancy due either to primary peritoneal disease (primary peritoneal mesothelioma) or more often secondary to other malignancies. The most common is peritoneal dissemination from gastrointestinal tract or genitourinary adenocarcinoma (pseudomyxoma peritonei arising from the appendix, large bowel or gastric cancer, ovarian cancer) and more seldom lung cancer, breast cancer etc. Initially peritoneal carcinomatosis was accompanied by rapid deterioration of clinical symptoms and considered as terminal condition because of the very low survival rate and the restricted efficacy of systemic introduced chemotherapy. Local recurrence and peritoneal disease were also developed after surgical removal of gastrointestinal or genitourinary tumors, a fact explained by the tumor cells entrapment hypothesis. According to this hypothesis malignant cells can migrate and implant themselves in the peritoneal space of dissected soft tissues or transected lymph channels after surgical injury [1].

These unfavorable outcomes urged the surgical community to more extensive surgical resections in order to remove all macroscopic disease, practically every lesion larger than 2 mm, performing thus the so called cytoreductive surgery. Furthermore, the idea of performing hyperthermic intraperitoneal chemotherapy overcame the peritoneal-plasma barrier which resulted in poor results of systemic introduced chemotherapy. The direct induction of chemotherapy in the peritoneal cavity after cytoreductive surgery allows achieving the highest oncologic results with the lowest toxicity in comparison with systemic chemotherapy according to several studies. The oncological effect of chemotherapeutical agents is augmented by raised temperature as malignant cells are destroyed by heat alone at temperatures over 41°C. Raised temperature has therefore an increased cytotoxic effect on malignant cells with less harm to normal cells [2]. As the concentration of the chemotherapeutic agents is raising and the time of the procedure is extending the results are better than because the tissue penetration is deeper, however always up to a limit. There are three methods of HIPEC administration, the open method while the patient's abdomen remains open, the closed method while the surgeon temporarily closes the incision and the semi closed method where the abdomen is in closed except for an opening for the surgeon's hand.

However, several adverse effects can develop both due to the extension of the surgical procedure as well as the toxicity of local administration of heated chemotherapy. Pulmonary complications, gastro-intestinal fistulae formation, hematologic toxicity, heat loss from the chemoperfusate and postoperative bleeding are the most common complications. The introduction of CRS plus HIPEC has positive outcomes in patients with peritoneal carcinomatosis which was previously considered as terminal stage of the disease. In order, though, to achieve these positive results, to reduce the postoperative complications and to "save" the procedure from un-proper use it is of crucial importance to stay faithful to specific indications for the procedure and to offer this combined and complicated method in reference centers by expertise surgical stuff. The expansion of criteria for CRS and HIPEC should always undergo within protocols of clinical studies [3].

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