

## Lessons learned from a phase II clinical trial of laparoscopic HIPEC for gastric cancer

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### Abstract

**Background** Over the last two decades, intraperitoneal chemotherapy has been found to have activity for select subgroups of patients with carcinomatosis from colon, ovarian, appendiceal, and recently, gastric origins. However, there is little data to support an aggressive surgical approach of cytoreduction (debulking) and hyperthermic intraperitoneal perfusion with chemotherapy (HIPEC) for patients with gastric cancer and positive cytology or carcinomatosis. The morbidity and mortality rates of cytoreduction and HIPEC, in combination with gastrectomy, are significant and the survival rates of this approach may not extend beyond that of treatment with systemic

chemotherapy. The objective of this clinical trial, therefore, was to perform HIPEC in a neoadjuvant fashion via a minimally invasive approach without cytoreduction for patients with gastric cancer and positive cytology or low volume carcinomatosis. Patients found to have resolution of all extra-gastric disease are then candidates for gastrectomy.

**Methods** Patients with gastric and gastroesophageal adenocarcinoma and positive peritoneal cytology or radiologically-occult carcinomatosis that have completed treatment with systemic chemotherapy were offered participation in the study.

**Results** We have performed 38 laparoscopic HIPEC procedures in 19 patients. Laparoscopic HIPEC consists of Mitomycin C 30 mg and Cisplatin 200 mg in 3–7 L of infusate circulated using an extracorporeal circulation device at a flow rate of 700–1500 mL/minute for 60 min. The Laparoscopic HIPEC procedure may be performed up to five times. In this video, we sought to present the surgical technique refined during our development and completion of this Phase II clinical trial (NCT02092298).

**Conclusion** The purpose of this presentation is to (1) demonstrate the technique of laparoscopic HIPEC and (2) review the surgical lessons learned from performing multiple HIPEC procedures prior to attempted gastrectomy.

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### Compliance with ethical standards

**Disclosures** Drs. Badgwell, Blum, Das, Estrella, Wang, Fournier, Royal, Mansfield, and Ajani have no conflicts of interest or financial ties to disclose.