

## **Title**

Open versus Robotic Hyperthermic Intraperitoneal Chemotherapy (HIPEC) in Managing Pelvic Cancer

## **Background/Synopsis**

Hyperthermic Intraperitoneal Chemotherapy (HIPEC) is part of the treatments offered to patients with pelvic primary or recurrent tumors here in Mayo Clinic Florida. There is contradictory evidence from few studies on the effectiveness of the treatment and long term follow-up. Currently there are many active trials both nationally and internationally that are designed to address those questions; however, the results will take years and we thought the clinical experience here at Mayo Clinic in Florida can provide reliable data which can add clinical management and help us deliver the best care to our patients.

## **Objective/Purpose**

Evaluate the overall and progression-free survival in patients who had Hyperthermic Intraperitoneal Chemotherapy (HIPEC) via exploratory laparotomy compared to those who had HIPEC via a minimally invasive approach.

## **Methods**

This is a retrospective cohort study that will evaluate patients who had been admitted to Mayo Clinic Florida for treatment of pelvic cancer and compare those who had HIPEC via exploratory laparotomy compared to those who had HIPEC via a minimally invasive approach. All statistical analyses will be 2-sided, and P values less than .05 will be considered statistically significant. The statistical analysis will be performed using BlueSky Statistics software Ver 7.40 (BlueSky Statistics LLC, Chicago, IL, USA).

## **Results**

Out of 120 patients who were identified, 84 (66 open and 18 robotic-assisted HIPEC) had complete chart review and were included in this evaluation. The mean age 60.3 +/- 11.8 in the open group compared to 64.0 +/- 12.4 ( $p = 0.265$ ) in the robotic-assisted group. All other demographics were comparable between the two groups including postmenopausal status, body mass index (BMI), smoking status, race/ethnicity, and insurance status. Clinical comorbidities were comparable between the two groups. For cancer-related characteristics, more patients with gynecological cancers were in the robotic-assisted compared to the open group (94.4% versus 72.7%,  $p = 0.029$ ). Other cancer-related characteristics were comparable between the two groups, including primary versus recurrent cancer, site of primary tumor location, and primary versus interval surgery.

Median time to discharge was 3.5 (range 0-5) days in the robotic group compared to 6 (range 3-371) days in the open group ( $p < 0.001$ ). Time to starting adjuvant therapy was less in the robotic-assisted group compared to the open group (21.7 +/- 11.2 versus 33.2 +/- 35.2), however this was not statistically significant ( $p = 0.111$ ). Intraoperative and postoperative complications were comparable between the two groups, except for estimated blood loss was higher in open compared to robotic-assisted (median of 250cc [range 50-3500] versus 125cc [range 30-350],  $p = 0.002$ ). With the available data, survival was similar among the two groups.

## **Conclusion**

Minimally invasive robotic-assisted Hyperthermic Intraperitoneal Chemotherapy (HIPEC) allows for earlier discharge and less postoperative complications with no decrease in overall or progression free survival.