

CS/HIPEC

Advanced Regional Therapeutics



Advanced regional cancer treatments **combine leading-edge surgical and chemotherapeutic techniques** to maximize treatment response while minimizing toxicity and side effects.

Cytoreductive Surgery (CS)/ Hyperthermic Intraperitoneal Chemoperfusion (HIPEC) offers:

- **One-time regional therapy** for patients with advanced abdominal cancers
- **Chance for a positive outcome** in terms of survival and quality of life
- **Potentially curative option**, even for patients with significant tumor burden

Our CS/HIPEC approach improved overall survival as much as 45 percent in select patients with peritoneal malignancies or metastases



As a one-time treatment, CS/HIPEC may be an important part of a patient's optimal treatment. The limited postoperative hospital stay makes it logistically feasible even for patients who live several hours from the Buffalo, NY area.

—John Kane, III, MD
Chief, Sarcoma/Melanoma Service

CS/HIPEC for Advanced Abdominal Disease

Peritoneal carcinomatosis (PC) affects approximately 10% to 30% of patients with colorectal cancer and represents a challenging treatment issue for these patients. Response to modern oxaliplatin- and irinotecan-based systemic chemotherapy remains disappointing and median overall survival for colorectal PC is 12.7 months with a 5-year overall survival of $\leq 4\%$ (Franko, et al. JCO 2011).

A complex procedure, CS/HIPEC can be done safely and offers many patients an effective therapeutic option.

CONDITIONS WE TREAT

CS/HIPEC may benefit patients with:

- Colorectal peritoneal carcinomatosis
- Appendiceal neoplasms/carcinomatosis
- Disseminated peritoneal adenomucinosis (DPAM) - (Historical treatment has been surgical debulking alone; however, the addition of HIPEC can prevent or delay the mucin recurrence, leading to fewer lifetime surgeries for the patient)
- Primary peritoneal mesothelioma
- Gastric cancer carcinomatosis
- Primary peritoneal carcinoma
- Refractory ovarian cancer
- Sarcomatosis
- Peritoneal tumors that have failed standard chemotherapy and/or prior surgery

HOW CS/HIPEC WORKS

After meticulous cytoreductive surgery to debulk the tumor(s), the peritoneal cavity is bathed with heated, high-dose chemotherapy. The procedure entails:

- Removal of gross tumor through a combination of visceral resection and selective peritonectomies only for involved surfaces (no "peritoneal stripping")
- Chemotherapy dosing at 3 to 4 times the maximum tolerated dose for systemic therapy (taking advantage of the plasma/peritoneal barrier)
- Mitotycin C is used most commonly
- Hyperthermia—42°C for 90 minutes—increases drug uptake by tumor cells and may be directly tumoricidal
- At procedure's end, all chemotherapy is removed
- Duration of hospital stay averages 10 to 14 days

Could Regional Treatment Benefit Your Patient?

BENEFITS OF CS/HIPEC

1. Direct access to the tumor
2. Minimizes tumor burden
3. Maximizes chemotherapy dose (taking advantage of the plasma/peritoneal barrier)
4. Achieves true fever range hyperthermia to increase response rates
5. Does not preclude other therapies such as systemic chemotherapy

LIMITATIONS

1. Addresses peritoneal disease only (some patients may still require systemic therapy for distant disease)
2. Requires surgical procedure with associated potential morbidity

What Sets Us Apart

As a multidisciplinary comprehensive cancer center, we call upon highly-skilled professionals from all areas of cancer care, dedicated to treating the whole patient, not just their cancer. We work as a team along with the patient's primary physician or community-based oncologist to provide optimal care delivered with compassion and respect.

Key aspects of RPCI's Advanced Regional Therapy Program include:

- We are the state's only CS/HIPEC program outside of New York City
- RPCI is the preferred provider for Canada's Ontario Ministry of Health
- We offer other advanced regional therapies such as Isolated Limb Infusion (ILI) and Isolated Limb Perfusion (ILP) procedures
- We have 3 board-certified, fellowship-trained surgical oncologists with cumulative experience of more than 16 years performing CS/HIPEC
- Since 2002, we've treated hundreds of patients with CS/HIPEC
- As part of a multi-center study, funded in part by the National Cancer Institute, our experts reported on the impressive outcomes with CS/HIPEC. Study results were published in *Cancer Medicine* (see below)

Published Outcomes

We recently reviewed 112 consecutive CS/HIPEC patients receiving treatment at our center. The most common histologies were colorectal cancer (33.9%), DPAM (24.1%), appendiceal adenocarcinoma (21.4%), and mesothelioma (9.8%). Prior systemic chemotherapy had been administered in 45.5%.

- 90% of patients were discharged by postoperative day 14
- 30-day postoperative mortality was 0%.
- At a median follow-up of 25 months:

Histology	Median survival	5-year overall survival
Colorectal cancer	45.2 months	38.2%
Appendiceal adenocarcinoma	39.9 months	38.7%
DPAM	Not reached	91.3%
Peritoneal mesothelioma	68.5 months	80.8%

(*Cancer Med*.2013;2(3):334-342)

“A review of our data in patients treated with CS/HIPEC over the last decade found a statistically significant benefit in terms of survival, with low morbidity and low mortality.”

—Joseph J. Skitzki, MD, surgical oncologist at RPCI

Staging Smarts

Because CT and PET typically underestimate the extent of carcinomatosis, as many as 7% to 10% of patients are not able to proceed with CS/HIPEC at time of exploration. A staging diagnostic laparoscopy may determine disease extent more accurately.

A Candidate for CS/HIPEC?

Prerequisites for this procedure include:

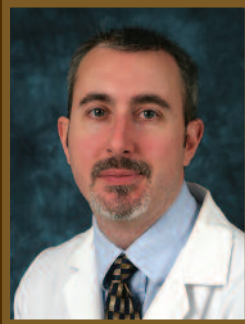
- ✓ Appropriate health/performance status with minimal comorbid conditions to tolerate potentially lengthy surgery and significant postoperative fluid shifts.
- ✓ Tumor is limited to peritoneal surfaces (no visceral or extraperitoneal metastases). Contraindications include presence of hepatic or pulmonary metastases, malignant pleural effusion, or anterior diaphragmatic/mediastinal nodal metastatic disease.
- ✓ Realistic ability to completely remove peritoneal tumor. Achieving complete or near complete cytoreduction is strongest predictor of response to CS/HIPEC.

For some patients who meet the first two criteria but extent of PC is “borderline,” upfront systemic chemotherapy may potentially downstage extent of peritoneal disease. Although most intra-abdominal organs can be resected acceptably (colorectum, spleen, gynecologic organs) tumor involvement of the porta hepatis or large portions of small bowel would be prohibitive.

Meet our CS/HIPEC experts



John Kane, III, MD, FACS
Chief, Sarcoma/Melanoma Service
Surgical Oncology



Joseph J. Skitzki, MD, FACS
Surgical Oncology



Valerie Francescutti, MD, FRCSC
Surgical Oncology

To speak with one of our CS/HIPEC experts, call 716-845-3284.

Refer a Patient

Please contact our referral specialist:



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