

REGIONAL PERFUSION THERAPY: *Maximizing Outcomes While Reducing Toxicity*

THE MONTEFIORE EINSTEIN Center for Cancer Care is the first facility in the Northeast to provide three types of “regional” chemotherapy treatments for cancer patients that go beyond standard surgical resection, but remain limited to an organ or region of the body. Regional perfusion therapy isolates the abdominal cavity or the blood circulatory system in the arms, legs or liver, and then delivers concentrated doses of anticancer drugs to the targeted area of the body at levels higher than can be safely given intravenously. This method helps patients avoid the side effects of standard chemotherapy and improves the treatment effectiveness. Montefiore Medical Center has assembled an expert, coordinated team of surgeons, nurses, anesthesiologists and perfusionists to provide this unique approach to cancer patients.

“Regional perfusion therapy finds the perfect balance between maximizing the dosage of a drug and minimizing toxicity to the patient,” says Steven K. Libutti, M.D., Director, Montefiore Einstein Center for Cancer Care. “We are the first center in the Mid-Atlantic and New England regions to offer three highly effective types of perfusion therapy for severely ill patients.”

Dr. Libutti performed approximately 200 liver perfusions and 200 peritoneal (abdominal) perfusions at the National Cancer Institute before coming to Montefiore.

Peritoneal Cancers

For patients with advanced cancers of the appendix, colon and stomach, which have spread to the lining of the peritoneal cavity, Montefiore Einstein Center for Cancer Care offers a highly specialized treatment called hyperthermic intraperitoneal chemotherapy (HIPEC). This procedure involves the removal of tumors from the abdomen by surgical resection, followed by the delivery of high doses of heated chemotherapy into the peritoneal cavity for up to 90 minutes while the patient is still in the operating room. After the highly toxic drugs destroy peritoneal cancer cells, they are washed out of the cavity.

“We surgically remove any visible organ tumors; perfuse the peritoneal cavity with high doses of mitomycin C, a potent anticancer drug that kills any remaining cancerous cells in the cavity. The approach has proved very effective for the six patients we have treated in the past year,” explains Timothy Kennedy, M.D., surgical oncologist at Montefiore specializing

in gastrointestinal disease who performed six HIPEC procedures at Montefiore in the past year with Dr. Libutti.

Isolated Limb Perfusion for Melanoma and Sarcomas

Patients who have advanced melanoma or soft-tissue sarcomas in the legs or arms that cannot be removed surgically, can be treated with isolated limb perfusion at Montefiore Einstein Center for Cancer Care. It is the only type of treatment available, save amputation, for many of these patients.

A tourniquet is used to isolate the leg or arm’s blood circulatory system, then a highly toxic drug, melphalan, is administered into this closed loop of arteries and veins.

“Melanoma is highly resistant to standard, systemic chemotherapy. For patients with melanoma that is isolated to an arm or leg, perfusion therapy is their best option. In these cases, complete remission rates for melanoma treated by isolated limb perfusion can exceed 60%,” says Katia Papalezova, M.D., a surgical oncologist at Montefiore specializing in melanoma and sarcomas, as well as isolated limb perfusion.

Recently, she treated a patient with a recurrent sarcoma whose options were an above-the-knee amputation or isolated limb perfusion. Dr. Papalezova administered the latter with excellent results.

“In our three-month followup of the patient, the sarcoma is gone,” she says.

High-Dose Treatment for Liver Tumors

Montefiore Einstein Center for Cancer Care also offers patients liver perfusions, a chemotherapy treatment that isolates the liver’s blood circulatory system and then administers melphalan to shrink liver tumors. The approach can be used to treat primary tumors of the liver such as hepatocellular carcinoma, or to treat tumors that have spread to the liver, such as colon cancer and neuroendocrine tumors of the pancreas. Patients who are no longer candidates for surgical resection or whose tumors have grown despite systemic chemotherapy may be candidates. Tumors respond to this type of therapy in as many as 75% of patients. These procedures are performed by Dr. Libutti; Milan Kinkhabwala, M.D., Chief of the Division of Transplantation; and Sarah Bellemare, M.D. ■