

INTRAPERITONEAL HYPERTHERMIC CHEMOTHERAPY (IPHC) FOR PERITONEAL CARCINOMATOSIS AND MALIGNANT ASCITES.

INFORMATION FOR PATIENTS AND FAMILY MEMBERS

Description of Treatment

A major difficulty in treating patients with cancer that has seeded widely on lining surfaces in the stomach cavity (abdomen, peritoneal cavity) is that it is often not possible to remove all the cancer cells. As a result, the cancer often persists despite surgical and other treatments. We are planning to add to aggressive surgical tumor removal another therapy called intraperitoneal hyperthermic (heated) chemotherapy or IPHC. Using standard surgical methods we hope to remove all or nearly all visible tumor in the abdomen. In an effort to “sterilize” any remaining tumor cells, we will perform IPHC. The term “intraperitoneal” means that the treatment is delivered to the abdominal cavity. The term “hyperthermic chemotherapy” means that heated solution (hyperthermic refers to temperatures greater than normal body temperature) is circulated (perfused) throughout the stomach cavity (abdomen). The heated fluid will contain an anticancer drug (chemotherapy drug) called Mitomycin-C. This drug, Mitomycin-C, has been shown to be more effective at killing tumor cells at temperatures higher than normal body temperature. It is hoped that the combination of heat plus the anti-cancer drug Mitomycin-C will prove effective in killing tumor cells remaining in the abdominal cavity after surgery. Carboplatin usually is used in place of Mitomycin-C in peritoneal mesothelioma and metastatic ovarian cancer. Dr. Loggie has studied this treatment application since 1991 and has considerable experience with it.

Currently, it is being offered as standard treatment on the basis of results from earlier clinical trials. The goal of the surgery is to remove as much tumor as possible, while preserving as much normal tissue and organ function as possible: these aims are sometimes in conflict. Therefore, our overall goal and strategy is to maximize quality of life in the short and long-term. We have learned that by paying attention to quality of life issues that you will live better and longer.

Plan of Treatment

Preparation for this procedure is the same as for any major abdominal surgery. The day before surgery you will need to have your bowels cleaned out. You will be asked to drink fluids for bowel cleansing and also will be given several doses of oral antibiotics. You will be asked not to take anything by mouth after midnight (except medications that your doctors may have prescribed for you). Anesthesia and other consultants will see you in the afternoon or evening. Overnight you will receive intravenous fluids. After you are brought to the Operating Room, your family members will be directed to the Surgical Waiting Area so that they can be kept informed of your progress. In the Operating Room, your care will be the joint responsibility of the anesthesia doctors and your surgeons.

Various “lines” and monitoring devices will be placed to provide continuous information about your condition during the surgery. At the start of the operation, your surgeon will explore your abdomen to confirm the diagnosis and to see whether the proposed treatment will be possible. We will not know for sure whether you are a good candidate for this treatment until the time of surgery. If at any time your doctors feel that it is unsafe or unwise to proceed, then the operation will be stopped. During surgery, care will be taken to reduce the amount of blood lost. However, it may be necessary to give you blood transfusions during and after the surgery.

During tumor removal, your body temperature will be allowed to fall 3 to 5 degrees Fahrenheit below normal (about 2 to 3 degrees Celsius below normal). This will prevent the rest of your body from becoming too hot during IPHC treatment. Tubes to permit the circulation of the fluid and temperature probes to monitor the temperature of the fluid will be placed in your abdomen. Heated fluid will be circulated through your abdominal cavity. The temperature and rate of perfusion will be carefully controlled by a pump perfusionist using equipment similar to that used for open heart surgery. The anti-cancer drug Mitomycin-C or Carboplatin will be added to the heated fluid. The solution will be circulated between the abdomen and the perfusion pump for 90-120 minutes. During perfusion, blood samples and perfusion fluid samples may be taken to monitor drug levels. After the IPHC perfusion ends, the tubes and probes will be removed. Drains may be placed in your abdomen. A nasogastric (NG) tube will be placed into your stomach to drain the stomach contents after surgery, in order to prevent vomiting. Most patients will go to the Intensive Care Unit (ICU) after surgery to monitor recovery. The length of stay in the ICU will depend on your condition after surgery but is usually 1 to 3 days. The average hospital stay is about 7 to 10 days but depends on the extent of surgery and whether or not complications arise. In general, private rooms are requested once you are transferred out of the ICU to the floor.

Other (additional information not applying to all cases)

- You may be seen by the Urology doctors before surgery. If so, they have been asked by us to help with the surgical procedure. They will evaluate you and plan to look in your bladder (cystoscopy) and pass flexible temporary catheters (stents) up the ureter (tubes connecting the kidneys and the bladder) to make surgery easier for us and safer for you. They can also help us in the event of problems or when surgery on the bladder, ureters, or kidneys are necessary. This is done once you are in the operating room asleep.
- In some cases, we anticipate the removal of the spleen may be required. The spleen filters particles out of the blood, including some bacteria. Spleen removal is usually well-tolerated without major long-term problems. However, an added risk for certain types of blood-borne infections exists. For this reason we may recommend specific vaccinations for you, both before and after surgery. Most cancer patients should be vaccinated with Pneumovax and should get an annual flu shot. Talk to your doctor about getting these vaccinations.

- The same information given above applies to those treated for the rare condition peritoneal mesothelioma, the clinical condition known as “pseudomyxoma peritonei” (PMP), ovarian tumor recurrences, and other tumors spread or recurring on the lining surface of the abdomen or pelvis.

Potential Risks

The major risk associated with this treatment will be that normally associated with the surgery and the anesthesia. These risks include (but are not limited to) death, bleeding that may require blood transfusion, infection, lung problems such as pneumonia, heart problems, blood clots, wound problems, and kidney problems. It is difficult to estimate the risk for individual cases since it depends on many factors including age, extent of surgery, amount of blood lost, underlying medical problems, length of illness before coming to surgery, etc. The risk of a serious complication is difficult to estimate but could be as high as 25% (one chance in four). The risk of dying because of these or other problems is difficult to estimate but it about 5% (1 chance in 20). As much as we can, we anticipate and prevent any problems that could arise. Also please understand that different people have different risks and we will try to point out where these risks may be higher or lower for you.

It is difficult to separate the risks of intraperitoneal hyperthermic chemotherapy (IPHC) from that of the surgery alone. Standard treatments will be used for any problems arising during surgery. The use of intraperitoneal heated chemotherapy increases the likelihood for some problems occurring after the surgery. The drugs used to kill cancer cells can also kill some normal body cells, especially those that grow rapidly (blood cells, cells that line the mouth, stomach and intestines, cells in healing wounds). Blood cells are made in the bone marrow and are responsible for fighting infections (white blood cells), carrying oxygen (red blood cells), and causing blood to clot (platelets). A reduction in the number of these blood cells (marrow suppression) can lead to an increased risk of bleeding and infection. When these effects occur, they can be treated appropriately. Adverse effects on the healing of wounds could increase the chance of leakage from the bowel after the surgery or of problems such as hernias in the incision. The drug could also result in the other side effects including nausea or vomiting, although this can occur normally after major surgery. The possibility of major permanent damage from IPHC to the heart, liver or kidneys is unlikely in our experience. Lung problems can be seen commonly. Most lung problems are temporary and reversible such as partial collapse (atelectasis) or increased fluid around the lungs (pleural effusion) and may be seen after major surgery alone. However, the use of Mitomycin-C has been infrequently associated with breathing problems that may need to be treated temporarily with the use of a ventilator (breathing machine). The possibility of hair loss is low. The likelihood of serious long-term problems from the chemotherapy drug is low because only one dose is used for this treatment. The most serious problems arise when severe problems from the chemotherapy are seen early after the surgery, and overlap with additional serious problems seen after surgery. This severe “overlapping complication” has occurred in about 5% of cases in the past (1 chance in 20) but current management methods appear to have reduced this risk. Certain patients have a higher risk for problems and we try to identify those people and

share our specific concerns. Reduction of the drug dose can reduce the risks of complications but may also reduce the long-term effectiveness.

Potential Benefits

We cannot guarantee that this treatment will be successful in your case. Our experiences with IPHC, and reports in the medical literature, have shown that IPHC when combined with cytoreduction surgery is often beneficial and is not associated with undue risk. We hope that this treatment will help you to live longer and more comfortably than would otherwise be possible with conventional treatments. We have found that malignant ascites (abnormal accumulation of fluid secondary to the spread of cancer on the abdominal lining surfaces) is eradicated or prevented in the majority of cases. For some patients, long term disease-free survival is a realistic goal. Where the information is available, we will try to give you a realistic estimate for you depending on clinical factors such as your age, physical condition, tumor type, and tumor extent. Please bear in mind that an accurate prognosis may not be possible until after treatment.

Costs to the Patient

Standard hospital, clinic, and professional fees will be charged for all consultations, procedures, and equipment or drugs. The use of IPHC can add up to three (3) hours to the operative time following tumor removal. This will increase the cost associated with the surgery. Additional costs will include the cost of the heated chemotherapy, tubing and supplies for the perfusion, services of the pump perfusion team that may not be covered in some instances. Standard charges will be levied. Neither the drugs nor equipment are investigational. Intraperitoneal chemotherapy is not considered investigational. Hyperthermia (heating) is achieved by heating the chemotherapy solution and does, in itself, result in additional equipment charges or additional time. There is an additional professional fee associated with hyperthermia used in this context that may not be covered by your insurance carrier (for example: Medicare). You are urged to discuss these cost issues with the hospital's financial counseling personnel, Robert Poe at 402-280-4313. Please also refer to the Cancer Center patient charges letter. In a changing medical environment, these issues can be difficult for all of us.

After IPHC

We like to follow all our patients after IPHC. Our usual method is to see you back about 4 to 6 weeks following surgery for examination and new baseline scans. Thereafter, we commonly see patients back at 3 month intervals for the first 2 years which usually coincides with repeat scans and tumor marker labs. Many of our patients come from out of state or out of country. It is very important for us that you have a local doctor with whom you have a good trusting relationship that you can rely on for care following surgery. It is neither necessary nor desirable for you to make the "trek" here for all problems that may arise. It is best to follow up with you local physician. It is appropriate for your physician to communicate with us for advice or any changes in your health status.

And...

Please review this information carefully. You are urged to ask questions as are family members. Your family and friends are part of the team looking after you. We also have other patients that have undergone this treatment that have offered to share their experiences with you. If this is of interest to you, please let us know so that appropriate contacts can be made: you are not alone!

After treatment, if you want to share your experience with others please let us know.

More information regarding your condition can be obtained on the following websites:
www.pmppals.org and www.pmpawareness.org

If you have any questions about our surgical oncologists and the use of IPHC, please feel free to call us at any time using our clinic number: (402) 280-4100.

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