PATIENT INFORMATION ABOUT ADJUVANT THERAPY AFTER THE “WHIPPLE” OPERATION FOR ADENOCARCINOMA (“CANCER”) OF THE PANCREAS AND RELATED SITES.

Radiation Oncology
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INTRODUCTION

The Whipple operation is also known as a pancreaticoduodenectomy. It is done to remove the part of the pancreas closest to the duodenum. The operation usually includes removal of the gallbladder and sometimes part of the stomach. After these structures are removed, the surgeon completes the operation by connecting the jejunum to the bile duct, duodenum or stomach, and remaining pancreas.

Although the goal of surgery is to remove the entire tumor, sometimes there may be small cells left behind which are invisible to the naked eye or there may be areas that could not be removed completely at the time of surgery. When there is some tumor left behind it is said that the margins are “positive”.

At the time of surgery, some surrounding lymph nodes are also removed. There is increased risk of cancer returning if explored lymph nodes show evidence of cancer cells. In an attempt to prevent the tumor from coming back either locally or spreading to other parts of the body (metastasis) we often recommend radiation and/or chemotherapy. This type of treatment, given after the operation at a time when there is no clinically detectable tumor is called adjuvant therapy. The purpose of this information sheet is to tell you a little about adjuvant therapy.
WHAT STEPS ARE INVOLVED TO GET READY FOR ADJUVANT THERAPY?

1. The first thing for you to do is to recover from the operation. Although after the operation you begin to heal right away, this process actually takes several weeks to complete. Occasionally this can be as fast as four weeks, but often recovery takes six to eight weeks, and, once in a while, may even extend to 10 weeks after the operation. The amount of recovery required to be able to safely take any additional anti-tumor treatment includes recovery of activity, energy, appetite, taste, bowel function, and the ability to maintain weight and even gain back some of the weight lost around the period of the operation. Six to eight weeks is usually required for this recovery.

2. Around the fifth or sixth week after the operation, if adjuvant treatment has been suggested, you should visit your radiation and/or medical oncologist. The purpose of this visit is to assess your recovery, obtain a CAT scan to see how the chest and belly look after the operation and to measure blood tests that tell about bone marrow, kidney, and liver function. These tests can be important in deciding whether and how to offer treatment. At this visit the available choices for treatment and the benefits and side effects of the treatment will be discussed. If you are being asked to consider any research studies, this will be explained to you clearly at that time.

WHAT TYPES OF TREATMENTS ARE INVOLVED IN ADJUVANT THERAPY?

The use of adjuvant therapy for pancreatic or related cancer usually involves chemotherapy and radiotherapy. Chemotherapy is drug therapy usually given by vein or sometimes by mouth (pills) and aimed at killing tumor cells. The chemotherapy goes wherever the bloodstream goes. Cancer specialists called Medical Oncologists evaluate and treat patients with chemotherapy. Radiotherapy is treatment given with x-ray machines. The goal of radiotherapy is to very precisely deposit radiation energy into regions likely to contain residual tumor cells in an effort to kill such cells. This is usually the area close to the area of the tumor resection, nearby tissues, and surgical connections.
Radiation Oncologists are specialists who use forms of radiation (high energy x-rays) to treat patients. Sometimes the chemotherapy and radiotherapy are given at the same time. This usually involves a drug called 5-Fluorouracil (5-FU), a pill form of this drug is called Xeloda. Sometimes gemcitabine may be used. If new combinations of drugs and irradiation are being tested, other drugs may be used. The sequence of chemotherapy and radiotherapy can vary. Sometimes we start with chemotherapy and radiotherapy together followed by a break of 4 weeks then additional chemotherapy alone. Sometimes we start with chemotherapy only for a few weeks, then give chemotherapy and radiotherapy together for about 5 or 6 weeks, and then go back to chemotherapy only.

The process of radiotherapy begins with planning the treatment. In order to plan the treatment we take a special CAT scan. The images from this CAT scan are pulled into our computers. We then outline where the tumor was (tumor bed), lymph nodes at risk of getting disease around the tumor bed, and the organs that we are trying to spare (kidneys, liver, spinal cord, and intestines).

When the radiotherapy is given, you are lying on a treatment table for a few minutes. Your body cannot feel or sense the radiation and being irradiated does not hurt. The course of radiation is one treatment a day, Monday through Friday, usually for about 5-6 weeks. As each treatment is given the machine may move to different positions, but you are asked to stay as still as possible while on the treatment table.

The process of chemotherapy can vary depending on the drug(s) and regimen chosen. It may involve a series of intravenous infusions for several days, repeated every few weeks, weekly, or as a continuous (24 hours /day) drug infusion by way of a small pump. Continuous intravenous infusion of chemotherapy involves having a semi-
permanent IV line or port placed in the upper chest. Sometimes the chemotherapy can be given by mouth in pill form.

**TO SUMMARIZE:**

1. Adjuvant therapy doesn’t begin until surgical recovery is adequate; 6-8 weeks after surgery is typical.
2. Treatment usually involves a period of chemotherapy alone and chemotherapy with radiotherapy. The whole treatment takes approximately 6 months, including rest periods.
3. Depending on the treatment selected the sequencing of treatments can vary.

Surgery → chemotherapy → chemotherapy and radiotherapy → chemotherapy

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**WHAT ARE THE SIDE EFFECTS OF ADJUVANT THERAPY?**

The treatments are designed to be given on an outpatient basis. Treatments are associated with some tiredness, loss of appetite and taste, weight loss, nausea, and lowered blood counts with risk of anemia, bleeding, infection, or need for transfusion. There are medicines to help with the side effects including nausea, diarrhea, pain, and low blood counts. Depending on the chemotherapy there can also be skin irritation or mouth soreness. Side effects can be life threatening, but this is rare. Hair loss can occur, but is mild with most of the regimens used for pancreatic cancer. Radiation can cause effects that don’t show up for months or years. These can occasionally cause damage to intestine or other organs with blockage, bleeding or other problems and can require surgical intervention. Fortunately, side effects such as these occur very infrequently.

**DOES ADJUVANT THERAPY WORK?** There is quite a lot of controversy about this. We believe that it does improve local control of the tumor and sometimes improves overall survival. Others are less sure. For these reasons we are still studying and developing newer and safer adjuvant therapies. Our goal is to maximize the benefit of therapy while limiting the toxicity. While you are in the hospital you may be approached by several coordinators asking if you would be willing to participate in studies. Some
studies are clinical, and related to cancer treatment; others are research-related and
designed to increase knowledge and understanding of cancer.

**WHAT IF I LIVE FAR FROM HOPKINS AND WANT MY TREATMENT ELSEWHERE?**
You are, of course, free to seek consultation and treatment wherever you feel will be best
for you. Because of our special interest and experience we encourage interested patients
to receive treatment at Hopkins. We cannot “order” your radiotherapy for you elsewhere,
just as your Hopkins surgeon could not “order” your operation for you elsewhere. We
can in some cases discuss treatment options with your local oncologists.

**WHAT IF I LIVE FAR FROM HOPKINS BUT WANT MY TREATMENT TO CONTINUE AT HOPKINS?**
Among services offered through The Sidney Kimmel Comprehensive Cancer
Center’s Office of Patient and Family Services is Housing Referral. The Housing
Referral coordinator can review a variety of housing options that provide
temporary housing during treatment.

**WHERE CAN I GO FOR MORE INFORMATION?**
The Sidney Kimmel Comprehensive Cancer Center website is an excellent
resource. Links throughout the site can guide you to everything from information
about cancer and cancer treatment, support for patients and families as well as
how to access clinical services. [www.hopkinskimmelcancercenter.org](http://www.hopkinskimmelcancercenter.org)

We welcome your questions. Phone numbers that may be helpful;
Referral Office: (410) 955-8964
Housing Referral Service: (410) 614-6527
Nutrition Services: (410) 955-8152
Radiation Oncology: Dr. Joseph Herman (410) 502-3823
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