NSW GOVERNMENT
Health
South Eastern Sydney
Local Health District

Peritonectomy & Intraperitoneal Chemotherapy

A GUIDE FOR PATIENTS AND THEIR CARERS

St George Hospital
Peritoneal Surface
Malignancy Program

PERITONECTOMY & INTRAPERITONEAL CHEMOTHERAPY

This booklet has been prepared by the St George Hospital Peritonectomy unit. Published June 2015.

INTRODUCTION

It has been suggested to you that you consider undergoing a treatment program involving both surgery and intraperitoneal chemotherapy because you have a cancer which involves the peritoneal cavity.

This surgery in combination with intraperitoneal chemotherapy is a standard treatment which may be considered for the following conditions: pseudmyxoma peritonei, appendix cancer, colorectal cancer and peritoneal mesothelioma.

It may be considered for ovarian cancer, gastric cancer and some other rare cancers as a non-standard but potentially therapeutic treatment.

The decision about whether to accept an offer of treatment may be a difficult one for you and we want to help you make a good decision in your particular circumstance. We hope that the information contained in this booklet will be useful to you in your discussions with your doctors and your family. We encourage you to seek their help and advice.

You can expect your doctors to explain your condition, treatment options and intent, prognosis (with and without treatment) as well as any risks associated with the proposed treatment in an accurate, clear and sensitive manner.

The purpose of this booklet is to inform you of these matters, and to assist you in your decision-making. You have the right to refuse any test or treatment proposed by your doctors. They will carefully evaluate any request you make for treatment and, if they think your request for a test or treatment is inadvisable, they will explain to you why they cannot comply with your request. If possible, they will offer you the opportunity of a second opinion.

We encourage you to discuss the information in this booklet with anyone you feel would be helpful. This person may be a family member, your GP or your referring doctor. The treatment and the issues involved are very complicated. If there is anything you don't understand, please let us know.

WEIGHING UP YOUR OPTIONS

The following questions may assist you in weighing up the pros and cons of pursuing a peritonectomy.

- Do I understand what is involved in undergoing peritonectomy (from workup, the surgery itself and beyond)? Is it all acceptable to me?
- Am I likely to need a second operation? If so, when? Is that acceptable to me?
- How is my illness expected to progress **without** a peritonectomy? What would this mean for my functioning in six months, 1/2/5 years if I keep going as I am now?
- What level of functioning do I expect after a peritonectomy? Am I being realistic?
- What am I afraid might happen if I seek peritonectomy? What am I basing this on? What am I afraid might happen if I don't seek peritonectomy? What am I basing this on?
- How might my family cope if I have an operation? What are their views/concerns?
- Do they understand my views/concerns?

Weighing up pros and cons of seeking a peritonectomy can aid your decision-making:

Advantages of seeking a peritonectomy	Disadvantages of seeking a peritonectomy
Advantages of NOT seeking a peritonectomy	Disadvantages of NOT seeking a peritonectomy

PART 1: GENERAL INFORMATION

WHAT IS THE PERITONEAL CAVITY?

The peritoneum is a thin lining that wraps around the bowel and other organs in your abdomen, similar to the skin around a sausage. It also lines the inside of the abdomen wall. A double fold of the peritoneum forms the fatty apron (called the omentum) that hangs over your bowel inside the abdominal cavity.

When the abdomen is opened surgically, the space between all the loops of bowel, the lining of the belly wall and the omentum is called the peritoneal cavity.

WHAT IS PERITONEAL CANCER INDEX (PCI)?

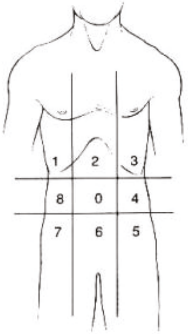
You will hear us refer to Peritoneal Cancer Index (PCI). The PCI is the measuring tool we use to determine the volume and spread of disease within your peritoneal cavity. The PCI thus indicates the treatment options that may be of benefit to you.

The abdomen is divided into 13 sections (see diagram on page 6). To estimate the PCI, the largest cancer growth in each section is given a score between 0-3 based on its size. The PCI is the total of all these scores. Since there are 13 sections, the maximum score is 39. In most instances the lower your PCI, the more likely surgery is going to be beneficial for you.

Radiological studies (see page 25) help us to determine the amount of disease present before you are operated on (‘preoperatively’). Sometimes to determine PCI we may also perform a laparoscopy (which is a look into the abdominal cavity with a thin telescope) to better assess amount of cancer. The PCI is important for determining the suitability of surgery for some cancers such as colon cancer (i.e. if the PCI is greater than 15 then peritonectomy is not beneficial). For other conditions like pseudomyxoma, PCI is used to determine the urgency of surgery.

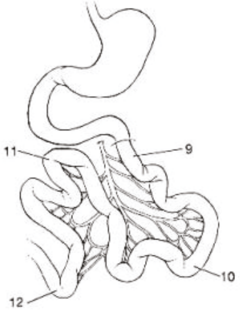
During your surgery the PCI score will be formally assessed. It is quite common for the volume of disease to be higher on that day than was your pre-operative score. As a result, sometimes the proposed surgical procedure may not be able to continue as planned. For some cancers the PCI at the time of surgery can help determine the prognosis after surgery.

Peritoneal Cancer Index



Regions	Lesion Size
0 Central	
1 Right Upper	
2 Epigastrium	
3 Left Upper	
4 Left Flank	
5 Left Lower	
6 Pelvis	
7 Right Lower	
8 Right Flank	
9 Upper Jejunum	
10 Lower Jejunum	
11 Upper Ileum	
12 Lower Ileum	
PCI	

Lesion Size Score	
LS 0	No tumor seen
LS 1	Tumor up to 0.5 cm
LS 2	Tumor up to 5.0 cm
LS 3	Tumor > 5.0 cm or confluence



WHAT IS A PERITONECTOMY?

Surgery to remove cancer from the peritoneal cavity is known as peritonectomy or cytoreductive surgery (meaning removing the cancer cells). In our unit the peritonectomy procedure normally incorporates heated intraperitoneal chemotherapy (HIPEC), at time of surgery, with or without early post-operative peritoneal chemotherapy (EPIC).

Peritonectomy

This procedure is the complete removal of all visible tumour from the peritoneal cavity. The amount of surgery required to achieve this varies a lot between people depending on the extent of the disease. It is not possible to predict exactly how much surgery will be required to remove all of the tumour. Surgery is followed by treating the surface of the abdominal cavity with heated intraperitoneal chemotherapy.

It is not uncommon that there is a need to remove some of the bowel as a part of this procedure. If the bowel cannot be safely joined back together, it may need to be brought to the surface as a stoma (colostomy/ileostomy) with bowel contents draining into a bag. Stomas may be temporary or permanent depending on the amount of bowel removed and other circumstances. Other organs which may need to be removed include your gall bladder, spleen, stomach, kidney as well as the female reproductive organs (including uterus, ovaries and fallopian tubes). Most normal activity will be able to continue without these organs. In your situation any likely effect on your daily life will be explained to you. The ability to have children may be significantly altered following removal of any reproductive organs.

The surgery is often very lengthy with the average operation taking 8 hours. Many of the possible difficulties/complications arise from your body having to cope with such a large operation. The more extensive the surgery the more time may be needed in the intensive care after the operation

HIPEC: Heated intra-peritoneal chemotherapy (hot chemotherapy)

Once all visible tumour has been removed, a chemotherapy drug is given directly into your belly (the 'peritoneal cavity') whilst it is still open. This is a major treatment advantage as it allows us to put the chemotherapy directly into the area where the problem is. We also heat the chemotherapy to around 40 degrees Celsius, which increases the effectiveness of the chemotherapy. After 30 to 90 minutes (depending on which drug is used) the chemotherapy is removed, everything is sewn back up and you will then be taken directly to the Intensive Care Unit (ICU) without being woken up.

The type of chemotherapy used depends on the type of cancer you have. This is explained in part 2 of this booklet.

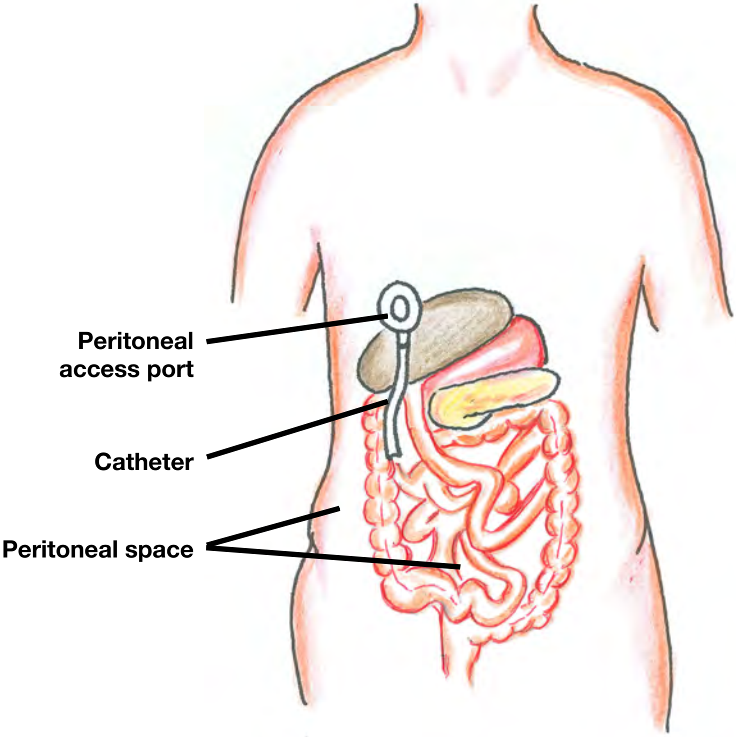
If we are unable to achieve complete removal of the cancer, or if we determine at the time of surgery there is a high risk of chemotherapy complications, we may omit the HIPEC.

HIPEC is sometimes given by key-hole surgery (called 'laparoscopy') to control fluid build-up (called 'ascites') inside the abdomen from the cancer. In this instance the cancer is not removed. This is a palliative procedure.

EPIC: Early post operative intraperitoneal chemotherapy (cold chemotherapy)

We aim to start the third phase of the treatment the day after your operation. Further chemotherapy with a drug called 5FU (5-Fluorouracil) is given directly into the peritoneal cavity through a device called a Port-a-Cath® (pictured on page 8), which will be inserted at the time of the operation for this purpose. This is usually used for pseudomyxoma peritonei and sometimes for colorectal and appendix cancer.

Once EPIC is completed, the access port is no longer required and is most often removed as a minor surgical procedure, usually prior to discharge from hospital.

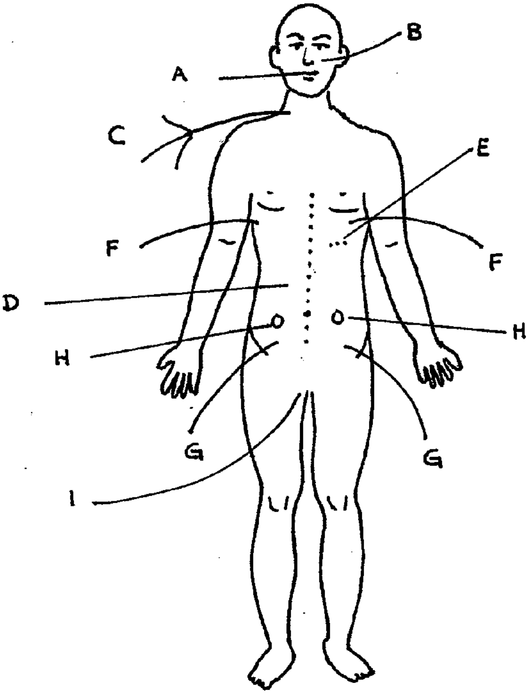


A one litre test bag of fluid (not chemotherapy) is run into the belly first to check that there are no leaks from wounds or drain sites. The fluid is later drained out via the abdominal drains. Provided this is successful, a further litre bag of fluid containing the chemotherapy will then be run into the belly, where it will remain for approximately 23 hours. We would normally aim to repeat this treatment every day for a total of up to 5 days.

Please note that sometimes there is a need for us to modify this plan based on how things have gone in the operation and in ICU, as well as how your body has responded to the operation. You can be assured that we will take every care to make sure that the surgery is appropriate for your particular condition.

Do not hesitate to ask us any questions about the chemotherapy plan after the operation.

WHAT WILL I LOOK LIKE AFTER THE OPERATION?



A: Endotracheal (ET) Tube - Located in your mouth and throat, this tube is connected to the ventilator to help you breath.

B: Nasogastric (NG) Tube - Located in your nose and going down into your stomach, this tube drains your stomach contents until your bowel starts functioning again.

C: Central Line - Usually located in your neck, this is an intravenous line that is inserted into a large vein leading to your heart prior to surgery. The purpose of this line is to provide long-term venous access for administering fluids, medications, blood products and nutrition.

D: Abdominal Wound - This will usually extend from the sternum to the pubis.

E: Intraperitoneal (IP) Port-a-Cath® - This is a small plastic device that is implanted below the ribcage. It is accessed externally with a special needle and is used to administer the post-operative chemotherapy into the abdominal cavity (See page 8).

F: Intercostal Catheters (ICC) - These are drains placed through the skin and into the chest cavity. They are used to drain fluid and air from the area around your lungs.

G: Wound Drains - Exiting your belly, these are large bore drains that are placed for the purpose of draining blood, body fluid and chemotherapy out of your abdomen.

H: Stoma/s - See page 18 for further details.

I: Urinary Catheter - A tube that drains urine from the bladder. This may also be used to measure the pressure in your abdomen.

What can be done to maximise the chance of success?

Keeping active, eating as healthily as possible and having a healthy attitude are the things you can do to help cope with the treatment and maximise your chance of success. It is important that you ask any questions that are on your mind.

We have a team of people to look after your surgery, anaesthesia, intensive care stay and chemotherapy. Our job is to make sure everything goes as well as possible for you. The extensive testing you have and the appointments with many team members are all to make sure that this surgery and chemotherapy are likely to be beneficial for you and that any risks are minimised.

What do we need to do in case the treatment is not successful?

Before you undergo the operation, we do need to address the possibility that things might not go well and that major complications could occur. It can be difficult if this happens in ICU because you may well be sedated and unable to discuss this at the time.

Although the likelihood of major life threatening complications is very low, it is devastating when it happens and therefore extremely important that you are prepared for this possibility in advance. It is a good idea to have discussed with your family or friends what your wishes would be in the event you were faced with significant disability or a minimal chance of recovery. Indeed it is often a good idea to decide in advance who you would like the doctors to talk to if they are not able to talk to you about your treatment and care, and then to give that person some indication of what your wishes would likely be. You can help that person by telling them what would be important to you. This can be formally documented in an ‘Advance Care Directive’.

Will I be involved in research?

St George Hospital is a teaching hospital and so we are always trying to improve our practice. Conducting research is one way of doing that. However, if we want to invite you to participate in research, we will explain this to you and seek your agreement. This will always be voluntary and if you decide not to participate, this will not adversely affect your treatment.

WHAT ARE THE RISKS AND SIDE EFFECTS OF PERITONECTOMY?

As previously mentioned your doctors may decide that it is not appropriate to go ahead with the proposed surgery if the tumour is more extensive or more difficult to remove than expected. It is our policy to be honest with you, and in the event of inoperable disease we will inform you and your family.

The risks of this program are substantial. The main problems arise due to the extent of the surgery as well as the need to recover from both the chemotherapy and the surgery at the same time.

30-40% of patients undergoing peritonectomy and HIPEC will experience a major complication. Major complication is defined as requiring return to intensive care or operating theatre, requiring a procedure in interventional radiology or any complication that significantly prolongs stay in hospital.

Potential problems include:

Blood and blood product transfusion: Sometimes patients lose a lot of blood and blood clotting factors during the operation and these will need to be replaced during surgery. It is usual for patients to require approximately 4 units of blood but sometimes requirements can exceed this number depending on the extent of the surgery and intra operative bleeding.

Infection: After the surgery you will have a wound, drains and an intravenous drip etc as on page 9. Each of these sites can carry the risk of infection. Should you notice any new redness, ooze or swelling eg at a drip site, please let a member of staff know. We will closely observe you for any signs of infection by monitoring your blood tests, temperature and how you feel in general. A CT scan may be organised following a change in symptoms or if you are not progressing as predicted. The purpose of the scan is to look for any source of infection such as pocket of fluid in the abdominal space or in the chest. Treatment may be a course of antibiotics, the removal of some surgical clips to allow drainage of fluid from the wound or it may require a fine bore drainage tube to be inserted under local anaesthetic in radiology. This tube would remain in position for a few days until the collection of fluid has been drained. Drainage procedure may be repeated as necessary during your hospital stay should further symptomatic collections of fluid occur. This is a very common procedure following peritonectomy surgery which most patients at some stage require.

Bowel leaks: It is common that some bowel is cut out and the remainder needs to be joined back together (this is known as 'anastomosis'). The chemotherapy may slow down the healing of the bowel join. If healing is slow and a leak from the bowel occurs, this is a major problem, and it may cause pain and infection. In about 5% of people the bowel contents can erode through tissue and end up coming out of the skin, bladder, vagina or surgical drain (this is known as a 'fistula'). If this occurs it can be managed by resting the bowel, keeping you 'nil by mouth' and feeding artificially via a drip until it heals. Sometimes, though rarely, it will require an operation to fix. Patients can feel physically well with a fistula but this complication is frequently accompanied by feelings of frustration or anxiety as it may extend the hospital stay for several weeks. Please let us know if you are feeling anxious at any stage.

Slow bowel recovery: After peritonectomy your bowel will stop working (this is known as a 'paralytic ileus') and you will not be able to eat until the bowel starts to work again. This usually takes approximately 10 days, but in some cases this takes considerably longer and delays your recovery. In this instance artificial intravenous feeding may be commenced.

Pain: After any operation you will be given sufficient pain relievers to keep you free of pain. This requires careful attention on the part of the doctors, and it may take some time for them to get the combination exactly right. The postoperative (cold) intraperitoneal chemotherapy can occasionally cause some additional pain, but this can usually be dealt with by giving extra pain killers. It is important that you let us know when you have pain so that we can deal with the problem as early as possible. We do not want pain to hinder your mobility. You need to be able to mobilise freely.

Dehydration: On occasion, patients may need suplemental intravenous (IV) fluids at home to maintain hydration. In this instance the patient or nominated carer will be educated to follow a home IV fluid protocol.

Chemotherapy side effects: The most serious potential side effect of chemotherapy is the lowering of your blood count. This makes you susceptible to bleeding or infections, which can be particularly problematic because the operation also makes you susceptible to these issues. Given the doses we use, most patients do not have problems with their blood counts. Other side effects (although rare when chemotherapy is given this way) include hair loss (uncommon and temporary), a sore throat and mouth, diarrhoea, nausea and vomiting.

Wound Breakdown: It is not uncommon for wounds to breakdown post-surgery due to nutritional deficiency, infection or delayed healing due to the chemotherapy. This is most often seen in the second week when it coincides with, but is not related to, the removal of the surgical staple/clip. It may range from slight weeping or superficial gaping on the surface of the wound to complete breakdown requiring specialised dressings. If a patient is well but has a wound requiring care, they may be discharged from hospital and referred to their local community nurses for management. If intravenous chemotherapy is planned after discharge home, all wounds must be healed before commencement. In some cases this may take several weeks.

Clots: Patients are at high risk of developing blood clots following major surgery. The risk is greater in patients who have a cancer. To reduce this risk, patients are given injections to “thin the blood” eg heparin or clexane. They are asked to wear support stockings for their entire hospital stay and be encouraged to mobilise as early and frequently as possible post operatively.

If patients develop limb swelling or chest pain or shortness of breath, they will be investigated for deep vein thrombosis (DVT) or pulmonary embolus (PE) / lung clot. Treatment involves giving intravenous heparin and later oral tablets eg warfarin or long term blood thinning injections (clexane). On a few rare occasions these blood thinning drugs have had an adverse effect causing an unexpected bleed within the abdominal cavity requiring intervention. You will be closely monitored for any signs of bleeding whilst receiving these drugs.

Routinely, patients will be required to self administer clexane for 6 weeks after discharge. You will be educated on injection technique towards the end of your hospital stay. If you develop the above symptoms before or after discharge from hospital please advise us or your local doctor immediately.

Nerve damage: Pressure on a nerve in your arm or leg during the operation can cause nerve damage. Any damage to the nerve would usually be temporary but can take a long time to recover and affect your walking or use of a limb and may delay your recovery. Should this occur the physiotherapist will assist you with your management.

Sexual dysfunction: Damage to pelvic nerves or structures during the operation may lead to post operative problems with sexual function. Please advise your GP if there are ongoing issues as help may be available. Men who undergo pelvic surgery as part of the peritonectomy may experience erectile dysfunction or ejaculation issues. Women may have their ovaries removed during the surgery resulting in early menopause or discomfort during intercourse. Hormone treatment may be recommended and commenced early in hospital if symptomatic. More information is available at www.ovariancancer.net.au.

Tiredness: Tiredness or general weakness is to be expected after an intensive treatment program. It can take several months - but it may take longer - to get your strength back up to normal. Occasionally patients may be referred for a rehabilitation exercise program if they are deconditioned after having spent several weeks in hospital.

Serious organ failure: The most serious risk is that a critical part of your body fails as a result of the treatment or its complications. Examples include kidney failure or lung failure and these can lead to other problems including brain damage. Support can be given in intensive care to deal with these, such as dialysis for kidney failure or more prolonged time on the ventilator machine if the lungs are not working. However, if these problems become prolonged or unsoluable, recovery may no longer be possible. This is what has happened to those patients who have died as a complication of the procedure. Organ failure may be a side effect of the overall package of surgery and chemotherapy and sometimes specifically from the chemotherapy.

Death: The risk of death from peritonectomy at St George Hospital is less than 2% based on our unit having performed over 850 surgeries (as at May 2015).

Assessing the risk of peritonectomy

It is very difficult to predict your chances of complications. Generally speaking the chances of complications are higher if your cancer has a high PCI (because that means that you will likely need more extensive surgery), if you are sick or malnourished prior to surgery, if the surgery is performed as an urgent operation, and if you are older or have other medical problems. There is also increased risk if you are undergoing a 're-do' operation or for recurrent cancer if you have had multiple prior abdominal surgeries.

QUALITY OF LIFE

There is no doubt that your quality of life will be poor in the weeks immediately after surgery. Research from our peritonectomy unit and other units shows that most people return to performing their activities of daily living, with some limitations, within 4 weeks of surgery. Quality of life returns to acceptable or normal within 4-6 months after surgery for most people. There may be specific impairments of quality of life related to bowel, bladder and sexual function. Sleep disturbance is also common.

CONSENTING FOR SURGERY

As we have explained, even after it has been decided to recommend surgery to you, there are still uncertainties about both the timing and the extent of surgery. These things may not be known until the day of surgery itself. For this reason, it is important that you understand what is being recommended to you, together with the associated likely benefits, risks and harms. All possibilities of the extent of the operation procedures will be explained along with possible side effects and the complications that may occur.

Well before the surgery, a senior doctor will talk to you and seek your 'free and informed consent'. Once again, this will give you an opportunity to seek any further information you desire. It is important that your consent is based on adequate information, is given freely and that you do not feel coerced or intimidated.

Please do not hesitate to ask any questions if you are unsure about what is being explained. We will organise an interpreter if required for this process rather than ask a family member to interpret.

Peritonectomy surgical procedures may include a combination of the following.

- Laparotomy
- Division of adhesions/scar tissue
- Stripping of peritoneal lining
- Bowel resection - formation of stoma-variable parts of small or large bowel depending on tumour involvement
- Removal of gall bladder
- Removal of spleen
- Resection of part of liver
- Removal of a kidney
- Gastrectomy - partial or total stomach removal
- Resection of abdominal wall muscle +/- insertion of mesh
- Resection of diaphragm muscle +/- insertion of mesh
- For females hysterectomy and or removal of ovaries and tubes
- Bladder surgery +/- re-implantation of ureters
- Insertion of intra peritoneal port for administration of early post operative intra peritoneal chemotherapy
- Removal of “belly button” (umbilicus)

PRACTICAL MATTERS: PERITONECTOMY WORK-UP, HOSPITAL STAY & FOLLOW-UP

Peritonectomy work-up

Prior to going ahead with a peritonectomy, you will undergo assessments to determine your suitability for surgery. The work-up includes consultations with a surgeon and medical oncologist from the peritonectomy team. You may be required to have up-to-date scans performed: these may include PET scan, CT scans and special imaging of your liver (either a MRI with Primovist® contrast or simultaneous CT scan and angiogram) (refer to page 25 for explanation of radiology scans). You will have blood tests and we may also review any biopsy or pathology specimens you have had taken. You will also meet our peritonectomy nurse, and we will endeavour to organise appointments also with a dietitian, stomal therapist, social worker and anaesthetist. If you have other medical problems you may need to see a relevant medical specialist. Once this assessment is complete, we will discuss your results in a multidisciplinary team meeting. We will then talk to you and your family about the kind of treatment we recommend for you.

Listing for surgery and operation date

We make every effort to let you know exactly what is happening and when, but there are major uncertainties about the timing of your operation.

The operating theatre is available to us for the purpose of these peritonectomy operations for two to three days per week. We have a very long waiting list and it is often difficult to coordinate the operating theatre time with a bed in the Intensive Care Unit (ICU). Your operation may be postponed due to another critically ill person needing the available bed. For this reason we must warn you that delays in your surgery are a possibility and ask for your understanding and cooperation with regards to this matter.

Priority for a surgery date is decided on a case-by-case basis. The type of cancer, volume of disease and patient symptoms are all considered when we plan a surgery date.

Occasionally if an operation date is not available soon enough for those patients with an aggressive cancer, the option of commencing chemotherapy can be beneficial. In these circumstances, we will offer you this option and then set a date for surgery which coincides with the completion of chemotherapy.

How much notice will I be given prior to surgery?

Once the decision is made to go ahead with surgery, then we will give your treatment a listing priority (either 1 month or 3 month). As the peritonectomy unit has a high number of referrals, this is the minimum expected waiting time. Some patients will be receiving chemotherapy and we need to coordinate with their oncologist a date to stop treatment prior to surgery.

You will be informed of the actual date of surgery within 1-2 weeks of surgery. If you live in Sydney, you may be contacted at very short notice if we have operating theatre time that becomes available due to a cancellation.

Instructions prior to surgery

In order for you to be prepared for your operation you will need to attend the Ambulatory Care Unit (ACU) for a few hours on the day prior to surgery. ACU is located on level 1 in the Clinical Service Building (access is via lifts at main hospital entrance, follow signs on level 1). Please telephone the Peritonectomy Nurse Consultant after 3pm on the Friday before surgery via the hospital switchboard on 9113 1111 pager 279, to ensure that all is running to schedule. If you are suffering from any new illnesses since your assessment you will need to inform the team. If you are on aspirin, warfarin or any other blood thinning medication please advise at this time.

Admission will be on day of surgery.

Day before surgery

Have a light breakfast before arriving at the ACU, then take clear fluids only e.g. water, juice, black tea/coffee or chicken broth for the rest of the day. At 10am present to the ACU. You will be given forms for blood tests to be taken in the pathology lab downstairs. Once blood has been taken, return to the ACU where you will be seen by staff including:

Oncology and Surgical doctors
Anaesthetist
Peritonectomy Nurse Consultant
Stomal Therapist
Pharmacist - (please bring all of your current medication)
Physiotherapist

This pre admission ‘work up’ may take a few hours to complete. You are advised to bring something warm to wear and to drink plenty of clear fluids during the day.

Before you leave the ACU you will be given two injections i.e. Vitamin K and Heparin in preparation for surgery the next day. You will also be given some shower gel to use the evening before and morning of surgery and a bowel prep kit. Commence the bowel prep in the afternoon once you have returned to your home or accommodation.

Fast from midnight: *Nothing to eat or drink*

On the day of surgery

At 6.45am present to the Day Surgery Unit, located at level 2 Clinical Service Building. You will have been shown where to go by the ACU nursing staff the evening before.

Do not eat or drink, remaining ‘nil by mouth’, unless you have been directed by the anaesthetist to take your normal medications with a sip of water.

You will be briefly seen by your surgeon before surgery should you have any questions or any concerns. You will be taken into the operating theatre at approximately 8am. Your support person, a friend or family member, may stay with you until this time. We will telephone them once the operation is underway to let them know how the operation is proceeding. The Surgeon will call your support person once the operation has been completed with an explanation of what has been done.

How long will I stay in hospital?

The average hospital stay is 21 days. A few patients have been discharged after a minimum of 8 days, but others - due to complications - have remained in hospital for several months. The average stay in intensive care is around 1 to 2 nights. There is a large variation in recovery time post peritonectomy. Complications can result in very prolonged stays for some patients.

What will it be like after the operation in the Intensive Care Units 1 and 2 ?

You will be brought from the operating theatre to the intensive care unit where you will be cared for by a specialist team of doctors and nurses under the direction of an Intensive Care Specialist (Doctor). In addition the Intensive care unit is also staffed with dedicated allied health social work and physiotherapists who work collaboratively with us to provide holistic care to yourself and your family. You will leave the operating theatre still anaesthetised, with a plastic tube in your wind pipe connected to a machine to help you breathe (called a ventilator). This can be unpleasant as you wake up, but the ICU team will use medication to keep you a little sleepy, pain free and as comfortable as possible. You will need help from the ventilator generally just overnight following surgery, but possibly longer if there are problems or complications from your surgery. It varies a lot. The ICU team works in collaboration with us to ensure you are receiving treatment appropriate for your condition.

You will have many other tubes and wires attached to your body and will be surrounded by many kinds of machinery, some of which make various noises or have flashing lights in order to monitor your health and function. All of this is there to help the ICU team help you, so try not to worry about it. You will have your own nurse at all times in ICU, and we recommend that visitors be limited to close family only, with just two visitors in the room at any time. Visitors may be asked to wait outside while various inpatient activities are taking place. Please ask them to be patient – your health and well-being comes first. Intensive care doctors are available at all times to speak with your family about your progress. Often patients do not remember their ICU stay.

Once you can breathe effectively without external help, you will be disconnected from the ventilator and the tube in your throat will be removed. If well enough you will be transferred to the Intensive Care Unit 2 where you will remain under the care of the intensive care doctors and specialised nursing staff. Your nurse in this unit will be looking after you and one other patient. If you are receiving EPIC, you will need to remain there until your chemotherapy is finished. All going well, you will then be transferred to the general surgical ward. Some patients who do not require EPIC may be transferred directly from ICU to the general ward if well enough, bypassing a stay in ICU2.

What will happen when I am transferred out of Intensive Care

Once you are ready to leave the intensive care unit, you will be transferred to ward 3East. Your surgeon and team will come and see you each morning around 07:00 am, and your family is more than welcome to be on the ward at this time to ask any questions. However, once the medical team have seen you, your family will be asked to leave the ward and not return until 10:00am. On the ward, visiting hours are strictly 10:00am to 12:30pm and 03:00pm to 08:00pm. Visitor numbers are restricted to 4 per patient.

Even though you may have Private Health Insurance, you will not be given priority to have a single room on the ward. Unfortunately, in Public Hospitals, single rooms are allocated to patients with infectious diseases. At any time, if you have any issues with your care, please do not hesitate to come and speak with the Nurse Unit Manager.

Personal hygiene recommendations

To reduce the risk of infection we ask you to be vigilant with hand hygiene e.g. washing hands before eating, after toileting. Do not interfere with wound dressings or disconnect drains or drips for showering.

Maintaining good personal hygiene can reduce the risks of hospital associated infections. The hospital supports an “it’s ok to ask” policy should you see a staff member not perform hand hygiene before attending your care. Visitors are asked to perform hand hygiene and to refrain from visiting hospital if they are unwell to reduce the risk to themselves and to our patients.

MEET THE TEAM

There is a specialised team who will be looking after you during the work up phase before surgery, your hospital stay and possibly keeping in touch after discharge home. These include:

- Surgeon and team of doctors
- Oncologist
- Intensive Care doctors
- Anaesthetists
- Peritonectomy Nurse Consultant
- Stomal Therapist
- Dietitian
- Social Worker
- Nutritional support
- Physiotherapist
- Palliative Care
- Pain Team

Information provided by some of their services has been included in this booklet.

Stomal Therapist

Having a stoma

A stoma is formed when part of the bowel has been removed and the end is brought out onto the surface of your abdomen providing an exit point for faeces. The opening is called a stoma and it is red and moist like the inside of your cheek. A stoma can be temporary or permanent.

If temporary, it does require an operation to reverse/rejoin the bowel, this will be some months after the initial surgery. This can be discussed with your surgeon during a post discharge consultation.

A stoma does not have nerve endings, so is not painful to touch. There are no muscles around your stoma as there are around your anus to control the flow so you will need to wear a specialised bag over your stoma to collect the faeces. The output may be runny or solid so you will be provided with a closed or drainable bag depending on the consistency. The bag sticks to your tummy and is changed every 1-2 days.

If you have a stoma, a specialist nurse called a Stomal Therapy Nurse will give you education and support on how to care for this. The Stomal Therapy Nurse will put a mark on your tummy (abdominal wall) before your operation so that the stoma (if it is required) is positioned in a place where you will be able to see it to manage yourself.

You will be joined to a specialist association to obtain a free supply of bags via the Stoma Appliance Scheme. A small fee will be required to join.

When you are discharged home, the Stomal Therapy Nurse will continue to support you. If you are from outside the local area we will put you in contact with your nearest Stomal Therapy Nurse.

The St George Hospital Stomal Therapy Department can be contacted on (02) 9113 3519 if you require any further information.

Social Work

Having major surgery like a peritonectomy can be a very stressful experience for patients and their loved ones. It can bring up strong emotions like nervousness, fear, anger, numbness or sadness. Anxiety can often arise as many practical arrangements need to be made (e.g. work, finances, and child care), especially if you are travelling long distances to receive treatment. These are all normal responses. Everyone deals with health concerns differently; some people like lots of information and input, and others like to be left to themselves a little to process what is ahead. Whichever way of coping works for you, there is support within the hospital to make things a little easier.

The Social Worker is a trained practitioner who is qualified to provide counselling and practical support to patients and their families during the peritonectomy experience. This includes before, during and after your hospital admission. The Social Worker attends the multidisciplinary case meeting on Fridays. They then meet you and your carer or family member at the pre-admission clinic, providing you with an opportunity to debrief at a time when there is a plethora of information received about treatment. The Social Worker is able to talk over the information you have been given by the doctors, allowing you to identify any gaps in knowledge which can then be fed back to the team. Practical concerns will be identified and supports and options for assistance can be followed up. The Social Worker can also discuss stress management and relaxation techniques, carer support and balancing a cancer diagnosis with everyday life. All these interventions can allow you to have more control over this experience and be more informed about the choice you are making. This process also decreases the need for many patients to be followed up extensively in the hospital setting as any concerns can be managed early before they become immediate.

During your admission, the Social Worker can assist to provide resources which may be of benefit to you, including information on your diagnosis and supports available. They may also be involved in facilitating, arranging and participating in family conferences to discuss issues of concern to ensure that you have a good understanding of your health care plan during your admission. Another role of the Social Worker is to provide counselling for concerns including coping with an extended hospital admission, being away from home and supports, adjusting to changes in lifestyle after surgery, dealing with loss and grief, coping during a crisis, carer stress and any other relevant issues. This is always done in a confidential manner.

If you have any questions or feel like any of the above has not been addressed, please contact the Social Work Department on (02) 9113 2494 or ask the Peritonectomy CNC to make a referral. Alternatively, during your hospital admission, please ask your nurse or ward staff to contact the Social Worker.

Physiotherapy

Physiotherapy after your peritonectomy surgery

A number of physiotherapists will be involved in your post operative care and rehabilitation. The physiotherapists on ICU 1, ICU 2 and the surgical ward work together to provide optimum care during your recovery.

The areas where you will receive treatment are outlined below.

Intensive Care Unit 1

The Physiotherapist will see you on the day after your operation. Physiotherapy in ICU is performed 3 times each day.

Following such an extensive surgery and an anaesthetic, the initial focus will be on restoring good lung function. The physiotherapist will assess you and provide you with exercises and equipment to help with your breathing.

This may include:

- Breathing Exercises
- Huffing and Coughing
- Limb exercises

Pain relief is very important following your surgery. Physiotherapists work closely with the pain team to minimise discomfort and enable you to perform your exercises. Exercises are given to assist your postoperative recovery. None of the exercises will cause any damage.

Once you are medically stable (usually day 2 after your surgery) you will be helped to sit in a chair. This helps optimise lung function and prevents complications caused by prolonged bed rest. Getting out of bed for the first time will feel difficult and awkward since you will have many attachments (drips and drains) but you will receive assistance from the nurses and the physiotherapist.

Intensive Care Unit 2

Once you are medically cleared and transferred to ICU2, your physiotherapy will start to include daily walking and gentle strengthening exercises. These exercises will be given in addition to your breathing exercises, which will remain very important. After such a big operation it will feel difficult to exercise and it may take some time for your strength to return. It is good to focus on the short-term goals your physio will set with you during this recovery period.

It is a good idea to continue to practice your breathing and strengthening exercise between physiotherapy sessions. Your nurse and physiotherapist will remind you also.

Surgical Ward

Once you are transferred to the ward, your physiotherapy will start to focus on improving your mobility for discharge home. There will be a continued focus on maintaining your lung function by continuing your deep breathing exercises.

Everyone varies in their recovery time and your physiotherapist will monitor this and work with you to help you recover. It is expected you will participate in physiotherapy daily until you are at an independent level.

Should you have any questions please ask to be referred to the physio on the ward who can provide more information.

Dietitian

Peritonectomy and nutrition

Food is important to nourish the body and the mind. With cancer it is important to try to continue to eat well in order to help your body fight the disease. This is often difficult because the cancer and treatment can make you feel unwell. However, there are ways to manage and control these effects and it is the role of the Dietitian to help. The Dietitian will be involved in each aspect of your peritonectomy care from pre-admission assessments, inpatient post-operative care and on-going follow-up as required. At each stage, the goal is to ensure that you are in the best nutritional state to maximise the success of treatment and to help manage symptoms affecting your well-being.

Pre-admission

The Dietitian will assess your body composition with the goal of optimising weight stability and muscle mass protection. Unintentional weight loss can occur with the cancer increasing the energy needs placed on your body. Alternatively unexpected weight gain, especially around your abdomen, can occur due to the disease position or stored fluid. You will be asked questions about your current intake and tolerance of meals. You may have already started medical treatments that leave you with symptoms affecting your eating like changes in bowel habits, nausea and poor appetite.

What is considered “healthy eating” will change depending on your medical condition. We aim for regular meals and snacks with a balanced, healthy focus. However, our priority is on adequate energy and protein needs. This is important in minimising stress on the immune system and to place you in the best state for your upcoming surgery. At this time the Dietitian will give individual advice regarding your diet leading up to surgery and explain the post-operative nutrition care plan.

Post-operative

The amount of disease and which organs have been affected, as well as your HIPEC treatment, will greatly map out your dietary journey, especially surgeries removing stomach and bowel. This path is different for everyone.

Initially you will be “Nil By Mouth”. If it is required that you fast for an extended period (which can be weeks) you will be considered for TPN (Total Parenteral Nutrition). This involves receiving all the energy, fluid, vitamins and minerals you require directly into your blood stream. This is a temporary measure, bypassing the need to digest and absorb these nutrients while the gut isn’t yet working.

How soon you can start taking food and fluid orally will be assessed by the doctor with formal observations, x-rays and tests. Commonly, intake starts with fluid consistencies and builds up to solids as your body adapts and tolerates it. This adaption may require another type of feeding method, called Enteral feeding. This may be to supplement your eating or to replace it when indicated for a medical reason. This involves a thin tube passed through one nostril to the top of your stomach or small bowel to slowly administer a nutritional formula.

If you are tolerating a solid diet we will offer you a High Protein menu. This surgery increases the nutritional requirements of the body, especially for wound healing, and adequate protein intake is essential. Foods high in protein include chicken, fish, red meat, eggs, dairy, protein supplement drinks, legumes, nuts and seeds. You are encouraged to have a protein source at each meal and mid-meal. The Dietitian will assess and educate you regarding your individual dietary needs and recommended specific intake goals. Using food selection and possibly nutrition supplement drinks, they will work with you to ensure you are receiving all your nutritional requirements.

St George Hospital has a 7 day menu cycle usually offering 2-3 choices at each meal. While we try to accommodate a range of preferences, we also support your family and friends bringing in food from home if you have particular food desires. Just keep in mind that all foods need to be compliant to your diet at the time. Also, food hygiene principles are particularly important in these cases – keep cold food cold and hot food hot!

Going home

The Dietitian will educate you on any dietary modifications you will need with your food intake at home. This can be anything from requiring specific food selection due to digestion changes after the surgery to how to manage getting through enough to eat with a poor appetite. With stomach and bowel resections especially, it is important to have regular blood tests with your GP so as to monitor for vitamin and mineral deficiencies. While the intestinal track can be quite adaptive, this process takes time and vitamin supplementation may be required. For ongoing support, a referral can be organised to see a Dietitian in your local area.

Palliative Care

For some people curative surgery may not be possible. The Palliative Care Service offers expert pain and symptom management and works closely with the Peritonectomy Team to ensure comfort and respect dignity and to get patients home with good community supports. We involve the Palliative Care service early in your admission if needed for symptom management.

Many people have a number of questions when they first hear about Palliative care. The following are commonly asked questions.

Does a link to Palliative Care mean that I am imminently dying?

No. Palliative Care is involved to provide care and symptom management in order to ensure good quality of life for as long as possible. Their aim is to improve the way that you now live. Their involvement in your care does not necessarily mean death is imminent. They and the surgical team will talk to you about what course your disease may take.

Does being seen by Palliative Care mean that I won't have any treatment?

No. Patients being seen by palliative care are often still having palliative chemotherapy or radiotherapy to reduce the effects of cancer and prolonging life. Palliative care works hand in hand with the treating team and all things that are reversible like anaemia or infection will be treated. Palliative Care never means 'do nothing', it means focusing on the things that are important to you.

Is there any information about Palliative Care I can have to read or give to my family?

Yes there is a variety of written information on Palliative Care. Just let the nursing staff know that you are interested and the social worker or palliative care nurse will provide you with it.

Pain Management

The St George Hospital Acute Pain Service (APS) provides assistance in managing complex pain for inpatients. Peritonectomy is a painful procedure which will require strong intravenous pain medication to control this. Patient Controlled Analgesia (PCA) is a means of self-administering these strong pain medications and is of most benefit in the initial post-operative period when oral intake is not appropriate. Once oral fluids are permitted, a transition to alternate analgesia, usually equivalent oral doses, will commence.

All patients who have Patient Controlled Analgesia (PCA) post-operatively will be reviewed routinely and then regularly until oral analgesia is commenced.

Nutritional Support

What is Parenteral Nutrition (PN) and why is it needed?

When you eat, food passes from the stomach into the digestive tract (also known as the bowel or gut), where it is broken down and absorbed into the body. However temporarily after surgery you may not be able to digest food in the normal way. When your digestive tract is not working, you still need nutrition. This is when you need PN (sometimes called Total Parenteral Nutrition or TPN).

PN is a sterile solution containing nutrients normally found in food – protein, carbohydrate, fat, water, vitamins, minerals and electrolytes. The solution is infused straight into the bloodstream, bypassing the digestive tract.

You will need PN until the digestive tract is working properly (absorbing nutrients). Just like eating and drinking after any illness, improving your nutritional state takes time.

How does it work?

PN is given via a drip (intravenous infusion) into the bloodstream using an infusion pump. PN is a concentrated solution so it must be given into a large (central) vein. Medical and nursing staff will often use the terms 'line', 'catheter', 'device' or 'port'. PN is usually infused continuously over 24 hours. The PN bag is changed daily.

During your PN therapy you will be monitored closely by a specialised Nutritional Support team of ICU doctors and Clinical Nurse Consultants. They will discuss the most suitable type of device/catheter and way of accessing this large vein when obtaining your consent. Monitoring will include regular blood tests, temperature, pulse and weight checks.

EMOTIONS AND INTIMACY

Cancer and its treatments can affect your:
- feelings (including fear, anxiety, sadness, anger and joy)
- body's production of the hormones needed for sexual response
- physical ability to give and receive sexual pleasure
- body image (how you see yourself) and self-esteem - roles and relationships

If you have had a stoma, you may feel self-conscious about the change in your body's appearance and this may affect your desire to have sex.

Chemotherapy side effects may lower your libido. Chemotherapy can have a permanent effect on your hormones and your fertility so it is important for partners to be aware of the impact that treatments may have on sexuality and intimacy. Awareness and education can help you to find new ways to experience emotional and physical intimacy

After cancer treatment, some people may find that sex is the last thing they are thinking about while others have an increased need to be close to their partner in order to feel loved and supported or because they have missed them while they have been in hospital. Cancer need not mean the end of your sexual life, however it is likely that you and your partner will need to adapt to changes.

Ways in which you can prepare for sex during or after treatment include:
- Talk openly with your partner about any fears you have
- Let your partner know how you feel
- When you're ready to have sex, let your partner know what level of intensity you prefer
- Ask your partner how they are feeling - they may be worried about hurting you
- Take it slowly - it may be easier to start with cuddles or a sensual massage
- Be patient - things often improve with time and practice

Speaking to someone who has been in a similar situation can help you to develop personal strategies for adapting to sexual changes.

Things that lift your general sense of wellbeing, like good food, exercise, relaxation and getting back into things you enjoy, may help you overcome sadness and depression and improve your sexual confidence.

(This information has been sourced from the Cancer Council NSW Sexuality, Intimacy and Cancer booklet).

FERTILITY AND CONTRACEPTION

Procedures during peritonectomy surgery may affect fertility following the severing of the seminal vesicles in males or removal of reproductive organs in females. Chemotherapy in men may affect sperm production in men and may cause damage to ovaries in women.

Contraceptive barrier aids such as condoms should be used while on and for a period after chemotherapy to avoid exposing your partner to cytotoxic effects and also to avoid pregnancy or damage to an unborn child. Chemotherapy may have an adverse effect on the production of sperm and eggs for up to 1 year after treatment. Sperm banking or egg harvesting and freezing of embryos may be discussed prior to surgery if fertility is at risk. Please let us know if you have concerns about fertility.

RADIOLOGY STUDIES

The common radiological studies which are required pre operatively are set out below:

CT scan

A CT (computerised tomography) scan uses x-ray beams to create a detailed picture of the inside of the body

- Before the scan, you may be given a special drink and a dye injected into a vein to make the pictures clearer. This may make you feel hot all over for a few minutes and leave a strange taste in your mouth
- The CT scanner is large and round like a doughnut. You will lie on a table that moves in and out of the scanner
- It takes about 30 minutes to set up the machine, and the scan itself takes 5–10 minutes.

MRI scan

An MRI (magnetic resonance imaging) scan uses radio waves and magnetism to create cross-sectional pictures of the body

- Dye may be injected into a vein before the scan to help make the pictures clearer
- You will lie on a table that slides into a metal cylinder that is open at both ends
- Some people feel anxious lying in the narrow metal cylinder. You may be given a mild sedative to help you relax
- Before arranging the test, your doctor will ask you questions about your medical history to check you can have the test. People who have a pacemaker or other metallic objects in their body cannot have an MRI due to the effect of the magnet.
- The MRI machine can be noisy, you may be offered ear plugs.

PET scan

During a PET (positron emission tomography) scan you will be injected with a small amount of radioactive glucose solution.

- It takes 30–90 minutes for the solution to circulate around your body. You will be asked to sit quietly during this time
- Your body is then scanned for high levels of radioactive glucose
- Cancer cells show up brighter on the scan because they are more active and take up more of the glucose solution than normal cells
- It may take several hours to prepare for and have a PET scan, it is usually done on an outpatient basis.

(This information has been sourced from the Cancer Council NSW).

Angiogram Procedures

This is a two part procedure performed at St George Hospital. During the first phase a catheter will be inserted into an artery in your groin under local anaesthetic, this is used to introduce dye into your liver to highlight any possible disease. The second phase involves a CT scan to scan the liver while the dye is being injected. Once the angiogram has been completed, the catheter will be removed and radiology staff will observe the puncture site to ensure that bleeding does not occur.

Depending on the size of the catheter used in your artery, you will be required to stay under observation in the Radiology Department for a minimum of 3 to 4 hours.

- This is not a fasting test, a light breakfast is permitted morning of procedure.
- You must be accompanied and driven home by a responsible adult or you may go home alone in a taxi with a responsible adult waiting at the other end. A friend or relative must stay with you overnight.
- You must not drive nor do any heavy lifting (eg. shopping or vacuuming) or excessive walking for 24 hours after the procedure.
- Please do not shower until the day after your procedure.
- We ask that you inspect the insertion site daily for approximately 1 week. You may see a small bruise or feel a small lump. This is normal.
- However, should any swelling or bruising NEWLY appear or INCREASE in size, this may mean that your artery may be bleeding. If either occurs, lie flat and either yourself or a friend apply and maintain firm pressure over the entry site. Call 000 for an ambulance to take you to the nearest hospital.

If you have any questions/ queries regarding the angiogram procedure please contact the St George Hospital Radiology Nurse Unit Manager / In Charge RN on (02) 9113 3664 from 7.30am and 9pm. Alternatively, contact the St George Hospital Emergency Department (out of hours) on (02) 9113 1680.

PART 2 - DISEASE SPECIFIC INFORMATION

PSEUDOMYXOMA PERITONEI

What is Pseudomyxoma Peritonei (PMP)?

Pseudomyxoma Peritonei (PMP) is a rare, semi malignant or malignant tumour characterised by progressive accumulation of jelly like substance (mucus) within the abdomen and pelvis, giving rise to the common name ‘jelly belly’. It is thought that most PMP starts in the appendix, although other primary sites include the ovary, bowel and pancreas. PMP is sometimes also called diffuse peritoneal adenomucinosis (DPAM).

Unlike most cancers, PMP doesn’t have the ability to invade organs or spread via the lymphatic system or the bloodstream to distant locations within the body. The tumour itself therefore is not particularly harmful, but there is limited space in the abdomen. If left untreated, the “jelly” will eventually build up to the point where it squashes vital organs within the abdomen (e.g. bowel, liver, kidneys) thereby causing problems/failure.

What are the reasons for recommending Peritonectomy?

We have recommended this treatment program for you because it has the best published results in the medical literature.

An international review of over 2000 patients, including patients from our unit and review of the literature, has identified that for patients receiving peritonectomy and HIPEC, the chances of living 5 years after surgery are 80-90% and the chances of living 10 years after surgery are 70-80%. Of the patients who are alive at 10 years approximately 30% will be living with relapsed/recurrent disease.

The chemotherapy we use is normally mitomycin C for HIPEC and 5-fluorouracil for EPIC.

What are the alternatives?

The alternatives to peritonectomy and HIPEC are as follows:

1. Supportive Care or No Intervention: If left untreated then pseudomyxoma results in progressive accumulation of jelly in the abdomen. This leads to abdominal discomfort, weight loss, bowel obstructions and ultimately death. This process can take place over months or years. Some individuals are not fit for surgery and this may be the recommended approach.

2. Serial Debulking: The main surgical alternative to peritonectomy and HIPEC is to do as minimal surgery as required to control symptoms. This is termed ‘serial debulking’. The expectation is that a number of operations will be required over time, and the aim of each operation is not to remove the tumour entirely, but rather to do the minimum amount in order to control symptoms.

Chemotherapy is not used to try and prevent the tumour returning in this situation. Research from the United Kingdom shows that the side effects from this treatment are similar to peritonectomy. The chances of living 5 years with debulking are approximately 70%, which is similar to peritonectomy, but the chance of living 10 years is approximately 30%, or more than 50% less than peritonectomy surgery. Unlike peritonectomy, no patient is rendered disease free by serial debulking. There are no clinical trials directly comparing peritonectomy to serial debulking.

3. Chemotherapy: Chemotherapy is sometimes used for pseudomyxoma and occasional responses do occur. However overall this is an ineffective treatment as it does not treat the accumulated jelly and the jelly interferes with chemotherapy. In patients whom the pseudomyxoma has transformed into a more aggressive cancer, chemotherapy may be more useful.

APPENDIX CANCER

Appendix cancer is a cancer arising in the appendix that resembles, but is not the same as, colorectal cancer. Appendix cancer can be difficult to diagnose and can resemble either pseudomyxoma peritonei (see above) or colorectal cancer. Some units treat appendix cancer like colon cancer.

What are the reasons for recommending Peritonectomy?

In our unit and other units performing peritonectomy and HIPEC the chances of living 5 years after surgery are 40-50%. The chemotherapy we use is HIPEC with oxaliplatin and an intravenous injection of 5-fluorouracil.

What are the alternatives?

The main alternative to peritonectomy and HIPEC is chemotherapy. Most oncologists would use similar chemotherapy to that used for colon cancer. There is not much published data on the results of this chemotherapy but the limited data suggests that results of chemotherapy in appendix cancer are similar to those in colon cancer. We would expect that the chances of living 5 years with chemotherapy alone (and no peritonectomy surgery) would be 5% or less.

COLORECTAL CANCER

Colon and rectum cancers are the commonest reason for cancer to involve the peritoneal cavity. Patients with colon cancer involving the peritoneum have lower long term survival rates than patients who relapse in other areas of the body such as the liver or lung. Without treatment for peritoneal carcinomatosis from colon cancer very few people live longer than a year.

What are the reasons for recommending Peritonectomy?

A randomised trial that included patients with peritoneal disease from colon cancer and a small number of appendix cancer compared receiving peritonectomy and HIPEC followed by conventional chemotherapy to chemotherapy alone. In this study the patients receiving the combination treatment lived longer than patients receiving chemotherapy alone. This trial has been criticised because the type of chemotherapy, whilst standard at the time of the study, is now considered old-fashioned.

Based on current publications current chemotherapy is associated with a 5-10% chance of living 5 years. Based on current case studies, peritonectomy and HIPEC for selected patients with colon cancer achieves survivals of 25-30% after 5 years. 10% will live 10 years but half to two thirds of these patients will have relapsed disease. The chemotherapy we use is HIPEC with oxaliplatin and an intravenous injection of 5-fluorouracil. If you are unable to have oxaliplatin then we use mitomycin C for the HIPEC and 5-fluorouracil for the EPIC. It is important to note that the peritonectomy and HIPEC is in addition to regular chemotherapy.

Which patients with colon cancer might benefit from peritonectomy?

Not every patient with colon cancer and peritoneal disease benefits from peritonectomy and HIPEC. We know that patients with a peritoneal cancer index (PCI) of more than 15 who undergo Peritonectomy do not appear to have improved survival. The best reported results are for patients with very low PCI (<5). In this case some units report 5 year survival greater than 40%.

There are many uncertainties about who is the optimal candidate for this treatment and different units have different selection criteria. Some of the uncertainties include whether prior chemotherapy impacts outcomes, whether involvement of different parts of the abdomen impacts survival and whether different subtypes of colon cancer respond differently. These issues in relation to your particular situation are discussed at our multidisciplinary team meeting that includes your surgeon and oncologist.

What are the alternatives?

The alternative treatment is systemic chemotherapy and other drug treatments. Current publications report 5 year survival of 5-10% for systemic chemotherapy alone. A further alternative, depending on your personal preferences is to receive palliative care.

PERITONEAL MESOTHELIOMA

Peritoneal mesothelioma is a rare cancer that is similar to pleural mesothelioma (a cancer of the lining of the lung). It is believed to be caused primarily by asbestos exposure and if you can demonstrate prior asbestos exposure you might be entitled to compensation from the Dust Diseases Board in your state. In our unit we recommend peritonectomy and HIPEC as the preferred treatment.

What are the reasons for recommending Peritonectomy?

Based on our results, chances of living 5 years after peritonectomy and HIPEC for peritoneal mesothelioma are approximately 50%. The HIPEC used for mesothelioma is mitomycin C and cisplatin.

What are the alternatives?

The alternative treatment is chemotherapy with pemetrexed and cisplatin. We expect ~20% of individuals to get a response to this chemotherapy. The chances of living 5 years with chemotherapy alone are less than 20%. There are no randomised trials comparing treatments.

UNDERSTANDING RELAPSE AND SURVIVAL TIMES

It can be confusing to read or hear about relapse and survival times. Doctors may talk about median or average survival time. This refers to the time passed before half of the people receiving a treatment have died. For example a median survival of 12 months means that half of the people receiving a treatment live less than 12 months and half live longer than 12 months. It is not possible to predict for each person how long they will live. The median time allows doctors to provide you with a range of possible outcomes including worse case and best case scenarios.

The other way you will read or hear about survival is in terms of specific time points. For example: ‘5 year survival’. What this refers to is the fraction of people receiving a treatment living for 5 years or longer.

The same terms may be used to describe the chance of your cancer returning or progressing over time.

Surviving 5 years does not exclude the possibility that your cancer hasn’t already relapsed or will relapse in the future.

Sometimes the doctors may talk about the chance of cure. In principle peritonectomy and HIPEC is conducted to try and cure the cancer. In practical terms for most of the cancers we treat the chances of cure are very low. From a practical perspective our unit would consider a cure to be that a person is alive 10 years after treatment and has no evidence of cancer recurrence.

CONCLUSION

Who can I talk to about all this?

Your care involves a lot of different people and you are welcome to ask questions of any of us. Good points of contact are the Clinical Nurse Consultants (CNC) for Peritonectomy. You can contact them to discuss any issues or to find out who is the best person to speak to. They are available Monday to Friday from 8:00am until 4:30pm on 9113-2789 (answering service) or 9113-1111 (pager 279).

We can also arrange for you to talk to a patient who has been through this procedure and we recommend you visit ICU to see what it is like. A tour of ICU can be arranged through the Peritonectomy Nurse Consultant (please do not contact ICU directly).

You might also like to visit a website to access some additional information. Some helpful sites include the following:

- www.cancercouncil.com.au
- www.surgicaloncology.com
- www.macmillan.org.uk
- www.pmppals.org
- www.ovariancancer.net.au
- www.justmeso.com
- www.ddb.nsw.gov.au

Useful telephone numbers

After hours - For medical emergencies related to current peritoneal disease or problems post peritonectomy surgery contact the on-call peritonectomy team doctor number on 0427 748 485.

The St George Hospital switchboard	(02) 9113 1111
Professor Morris' Rooms	(02) 9113 2590
Medical Oncology Clinic	(02) 9113 3943
Peritonectomy Nurse Consultant	(02) 9113 2789
Bezzina House Manager	(02) 9113 2555
Intensive Care Unit 1(2 West)	(02) 9113 3288
Intensive Care Unit 2 (2 South)	(02) 9113 3264
3 East Ward	(02) 9113 2899
Stomal Therapy	(02) 9113 3519
Palliative Care	(02) 9113 1111
Social Worker	(02) 9113 2494

Notes

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