

Welcome to the Bone & Joint Infection Unit

Acacia Ward - Life Vincent Pallotti Hospital

Introduction

This booklet includes information about bone and joint infections, some terminology surrounding the treatment, and other facts you and your families may find useful. The information may not all apply to you, so please let me know if you have any questions and feel free to provide feedback.

You are here because you have an infection in a bone or joint caused by a bacteria or fungus. There are many different types of bacteria or fungus that cause these infections. Some are easier to treat than others and have a better outcome. You likely either have an infection of a replaced joint (called a peri-prosthetic joint infection or PJI) or a bone infection (called osteomyelitis, osteitis or OM). These infections can be acute (short-term) or chronic (long-term). This information sheet will try to explain the general treatment that you will undergo to clear your infection, and restore normal or near-normal function as soon as possible.

These infections are difficult to treat because it is not easy to get antibiotics (the medication that fights the bacteria causing your infection) in high enough concentrations to kill the bacteria sitting in the infected bone or on the metal and plastic of the infected joint replacement. Successful treatment requires a team approach with enthusiastic doctors who are up-to-date with the latest treatments available. Our team offers this through providing a **focussed** and **individualised** management approach. You may have had several operations before being referred to us. This usually makes your treatment more difficult as the surgery is harder – due to more scar tissue and bone loss – and the treatment of the infection harder – due to more resistant bacteria and fewer available treatment choices. The more antibiotics you have been given the greater the chance the infecting bacteria are able to develop defence mechanisms or resistance against these antibiotics. This means we need to use stronger antibiotics that work in different ways to destroy the resistant bacteria. It also means that we have to be more aggressive in your treatment to be successful, resulting in longer, more complex operations and prolonged stays in hospital to receive special antibiotics. Failure to treat infections can result in losing your limb, or possibly even your life, so we will work together and try our absolute best to prevent this.

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Our team includes

Orthopaedic surgeons – Dr Thomas Hilton (PJI) & Dr Maritz Laubscher (OM)

Infectious disease physicians – Dr Helen Van Der Plas & Dr Kevin Rebe

Microbiologist – Dr Tina Wojno (Lancet Laboratories)

Physiotherapists – Erin Innocenzi and Rifda Baker

Dietician – Denise Caron

A psychologist, social worker, wound care sisters and specialist infection control sisters make up the rest of our team.

Explanation of the different parts of the treatment course

What is causing your infection?

Bacteria are the most common cause of bone and joint infections. Antibiotics are used to kill bacteria and cure infections. They do not work against viruses or fungi. Bacteria can shield themselves from the effects of antibiotics and become resistant. This usually happens when antibiotics are misused. We are rapidly running out of antibiotics to kill resistant bacteria and there are bacteria that are resistant to all available antibiotics. We want to avoid this by using antibiotics wisely. Bone and joint infections require higher doses of antibiotics to kill off bacteria than other types of infection. This is because the bacteria can hide on the surface of the joint replacement materials, and bone's blood supply is not as good as skin or muscle. While a usual course of antibiotics is 5 to 7 days, bone and joint infections require 4 to 6 weeks or even longer. This also makes the chance of having side effects from the antibiotics higher. If this happens we will try to treat the symptoms of the side effect or if severe, change to a different antibiotic if available.

Fungal infections can also cause bone and joint infections, and are very difficult to cure. We use anti-fungal medications to treat these infections. Fungi multiply slowly so they require long treatment courses (the length of time one has to take a medicine) and the chances of success are less than that of treating a bacterial infection.

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Types of antibiotics

- The decision about what antibiotic to use is complex and depends on many factors.
- If there is an antibiotic we can use to treat your infection that can be taken in a tablet form then you will be able to go home on these antibiotics and be closely monitored.
- Often treatment of resistant bacteria will require antibiotics that need to be given intravenously (through a drip). This means that you will have to remain in hospital for the duration of the antibiotic treatment, which can be as much as 12 weeks.

Treatment Terms

Oral – this means taking medication by mouth (swallowing with water).

Intravenous (IV) – these medications are given into your veins through a drip or CVP (this is a type of drip that is placed under your collar bone or neck and goes into a bigger vein). A CVP can stay in for longer periods and is better to give IV antibiotics through.

Treatment course – this is the length of time one has to take a particular medicine for. For bone and PJI infections this usually about 6 weeks, but can be longer.

Side effects – these are the effects of the medicine (e.g. antibiotic or pain killer) that you may experience that are not the intended effect. For example, nausea and vomiting can be a side effect of certain pain medications.

Cost – the treatment of bone and PJI infections is very costly for a number of reasons: long stays in hospitals; the use of expensive antibiotics (some of which cost hundreds of thousands of rand for a treatment course); multiple surgeries; and individualised bone or joint prostheses to fit the space where infected bone and tissue has been cleared.

Prosthesis – this is something that is put into you (or implanted) during surgery to replace a joint. It is the metal and plastic parts used to replace the damaged bone that was causing your discomfort. These are very expensive and in revision surgery you may require a specialised prosthesis that costs even more. Medical aids do not always cover the entire cost of prostheses, so this will be discussed with you prior to your surgery.

Types of operations

This will depend on

- How early your infection is detected.
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- If the type of bacteria causing the infection is known.
- If the type of bacteria causing the infection can be treated with standard antibiotics.
- Whether you are otherwise fit and healthy.
- Whether the skin around the infection site is healthy.
- Whether the joint replacement (if you have one) is damaged by infection or not.

The most common treatment option in this unit is called a ‘**two stage revision**’ and involves two surgeries about six weeks apart:

- The first operation is to remove all infected tissue, take samples to see what type of bacteria is causing the infection, and to leave an ‘antibiotic cement spacer’ in the joint.
- You will then be placed on antibiotics for about 6 weeks to treat the bacteria that was detected in the samples, and will need physiotherapy.
- After completion of the antibiotics you will go back to theatre for the second operation to have the new joint or bone implants inserted, and to take more samples to check that the bacteria are no longer growing.
- After that antibiotics will be continued until the infection is no longer present.

You may require only a single operation depending on the complexity of your infection and damage to the bone and joint.

What should patients be prepared for?

- **A long stay in hospital**
 - A two-stage revision procedure is most commonly performed and results in an 8 week stay.
- **Some pain and discomfort**
 - We will try our best to manage your pain with different types of medication but must also be careful that these do not interfere with the effects of your antibiotic treatment.
 - There are many methods to control your pain that are used before surgery, straight after and in the longer term that include:
 - Nerve blocks
 - Patient controlled analgesia
 - Anti-inflammatories/voltaren/brufen
 - Paracetamol/panado
 - Opioids/morphine – many different types
 - Centrally acting agents (drugs that act on the brain)
 - A pain specialist will be called in if we are not able to manage your pain adequately.

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- **Constipation**
 - This often happens from the use of pain medication, surgery and lack of movement – we will try to prevent this. Working hard with your physio at your exercises and drinking lots of water also helps avoid constipation.
- **Possible side effects from medications** (such as nausea, loss of appetite or skin rashes)
 - These are not common but can happen and will be managed either by treating the symptoms or changing the antibiotic.
- **Repeated surgeries**
 - With severe infections or problems with wound healing, it may be necessary to return to theatre multiple times to clear the infection and close the wound.
- **Food**
 - Hospital food is far from restaurant quality but we are trying to improve this, especially for patients who stay with us for a long time.
 - Your calorie intake is very important to effectively recover from surgery, fight the infection and for wound healing.
 - We will measure your albumin levels which are an indicator of your nutritional status.
 - Our dietician will work with you to structure your diet to best suit your needs.

What should family members be prepared for?

- **Long hospital stays**
 - Time away from your loved ones is always hard especially when they have bad infections and must stay in hospital for a long time.
 - **Strict visiting hours**
 - Please adhere to the displayed ward times, except for emergencies.
 - These are in place to allow sufficient time for your family member to be taken care of, be given medication, undergo physiotherapy and most importantly, to get some rest.
 - **Preventing the spread of infection**
 - Please assist us and yourself by washing your hands when entering the ward and when leaving, and wearing provided personal protective equipment (PPE).
 - These precautions are in place to prevent you bringing infection to your family member, carrying infection back home with you and to avoid the spread of infection to the community.
 - **Children**
 - Although we realise that this can be difficult, children are not permitted to visit patients with severe infections for their own safety.
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What to expect after surgery?

- **High care or intensive care**
 - You will usually spend a night or two in the high care unit immediately after the surgery. This is to allow us to keep a close eye on your vital signs and pain control.
 - If your condition worsens, you may require closer monitoring in an intensive care ward.
 - **Wound closure**
 - The type of stitches used to close your wound will depend on the quality of your skin and muscle.
 - Usually after many operations there is more scar tissue present and sutures such as nylon or clips must be used. These are not dissolvable and will be removed 2 to 3 weeks after the surgery.
 - **Dressings to cover your wound**
 - The choice of dressing depends on the state of the soft tissue or skin surrounding your joint:
 - Standard dressings are usually used.
 - VAC (vacuum assisted closure) dressings may be needed if the wound is complicated – this involves instilling a special fluid at regular intervals into the wound that is slowly suctioned out to assist clear severe infections.
 - **Wound complications**
 - These are frequent with patients who have had multiple surgeries on the same area, or severe infection. The large amount of scar tissue, which does not have a good blood supply, causes delay in wound healing and occasionally the wound breaks down. This may require a minor procedure to cut out the parts that are not healing and stitch them back together.
 - Your wound may require a plastic surgeon to perform a ‘flap’, which involves moving a piece of skin and/or muscle to cover the wound.
 - **Drains**
 - Drains are used to drain fluid and blood from the operation site to prevent collections, wound complications and further infection, but are not used very often.
 - These will be removed in the ward by your orthopaedic surgeon at some point after surgery.
 - **Braces**
 - These are padded supports that you wear to help for pain, wound healing, prevent dislocations and give stability to assist with physiotherapy.
 - Not every patient will need one, but this will be discussed with you.
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- **Medication**

- You will be required to take medication for the full duration of your stay, and likely afterwards.
- Medication will be most effective if it is taken exactly as prescribed.
- These include:
 - Antibiotics
 - Pain medication (also called ‘analgesia’)
 - Iron and folate
 - Your iron level will usually be low due to blood loss from multiple surgeries.
 - We will supplement your iron and folate levels either using oral or intravenous medication.
 - Vitamin D
 - This is a good vitamin to help with wound healing and infection.
 - Surprisingly low levels are found in the general population despite good exposure to sunlight, which is how our bodies manufacture vitamin D.
 - If you are in hospital for a long time and not getting out into the sun, we will test your levels and give you supplements if needed.

- **Blood transfusions**

- You may require a blood transfusion if your haemoglobin level is low before surgery, or following blood loss from the operation.
- We try to avoid blood transfusions due to high cost and the effect they have on your immune system, but occasionally they are needed.

What do we expect from you?

- **Patience**

- This is a long process but keep the end goal in sight, which is being free of infection and discharged home.

- **Understanding**

- We want your hospital stay to be as pleasant as possible so will try our best to communicate with the caterers, nursing teams and hospital management to achieve this. However, please understand that some requests may not be possible.

- **Compliance**

- It is important to take your medication exactly as prescribed.

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- The harder you work at your physiotherapy exercises, the quicker and more successful your recovery will be.
- **Keep yourself occupied**
 - We strongly advise that you find ways to entertain yourself, such as reading books, magazines, newspapers, tablets and playing games.
 - Make use of the garden facilities to get a change of scenery from the ward.

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