PATIENT INFORMATION SHEET

What are coronary angiography, angioplasty, and stenting?

- **What is coronary angiography?**
  - Coronary Angiography is a special computed tomography (CT) examination to take pictures of the coronary arteries by using X-ray and an imaging scan is called Angiogram. To see blood flowing inside the arteries and check its narrowing or blocking, a dye is injected before the examination.

    *However, special flow wires can also examine whether a narrowing limits blood flow if the inside of the arteries is not visible because of heavy deposits of calcium in the wall.

  - A combination of angiogram and flow data can help decide on treatment options. At the same time, treatment with a balloon (angiography) or stent is performed.

- **What is angioplasty?**
  - Angioplasty is a treatment that inserts balloons or stents into an artery in your heart to treat blockages and narrowing.

- **What is stenting?**
  - Stent is a small wire mesh tube used in an angioplasty procedure.

Preparation and precautions for the test

- Do not eat or drink for at least six hours before your procedure.
- Do not take anticoagulants (warfarin, dabigatran) a number of days before the procedure in consultation with your treating cardiologist.
- Continue to take anti-platelet drugs (aspirin, clopidogrel, or prasugrel) for the procedure to perform stenting.
- Bring your tablets and insulin with you if you take diabetic medication. But avoid all medication on the morning of your procedure.
- Stop taking metformin (Diabex, Diaformin) 24 hours before and 48 hours after your procedure.

Procedure of the test

- **How long does the test take?**
  - The entire procedure will take 45-60 minutes. A day stay procedure in hospital is required.

- **Who will perform and explain the test procedure to you?**
  - A cardiologist will perform and explain the procedure to you.

- **What do you need to wear during the procedure?**
  - You must wear a hospital gown, mask, and cap as the cardiac catheterisation laboratory is a specialised x-ray room and a sterile area.

- **How is the test done?**
  - Please lie flat on your back and remain still during the procedure.
  - A plastic tube, 'cannula,' will be inserted in a vein and a blood sample taken.
  - A sedative medication may be given as a tablet or in the cannula.
    *But you will be awake and able to communicate throughout the procedure.
  - A large x-ray camera above the table will take pictures of the procedure.
  - During the entire procedure, your electrocardiogram, heart rate, blood pressure, breathing rate, and oxygen level will be monitored.
  - Images of the catheter through the body into the heart and the structures of the heart are displayed on video monitors as the dye is injected.
  - The catheter site (groin or wrist) will be cleansed with antibacterial soap. Sterile towels and a sheet will be placed around this area.
  - Local anaesthetic will be injected into the skin. The cardiologist will make a small cut in the skin at the insertion site. Afterwards, a plastic tube is put into the blood vessel leading to the heart and then into the opening of the coronary arteries in the aorta. Dye is injected into the aorta to see if there are any blockages and where they are located.

    *When the dye is injected, you may notice a feeling of warmth or even a hot flash.
    *Occasionally, a little pressure or discomfort is felt, but this sensation will last for only a few seconds.

  - When the procedure has been completed, the catheters and sheath will be removed.

- **When is an angioplasty done?**
  - If coronary disease is found and angioplasty/stenting is possible and appropriate, the cardiologist may perform these procedures. This is done immediately after the angiogram.

- **How is an angioplasty done?**
  - A small wire well is positioned beyond the narrowed area inside the artery. Then, appropriate balloons and stents are placed precisely.
  - A balloon will be inflated first to open the artery. Afterwards, a stent is placed to keep the artery open.

- **What are the risks of the procedure?**
  - The stents are made of steel. Some of them have a drug coating on their surface. The lining of the artery (endothelium) is disrupted by angioplasty and the stenting procedure. The artery could clot off in stent thrombosis.
  - To prevent this from occurring early on in the procedure and during your recovery from it, Aspirin and other antiplatelet drugs such as clopidogrel (Iscover, Plavix) are given.
  - Regrowth of the endothelium might occur over time. It can be excessive, leading to narrowing inside the stent or 'restenosis.'
  - Drug eluting stents (DES) can reduce the chance of restenosis but slow down the normal healing process of the artery. As a result, the risk of late stent thrombosis lasts longer in those treated with DES.

- We therefore prescribe long-term treatment (at least 12 months) with a combination of blood thinners (antiplatelet medicines such as Aspirin and Clopidogrel or Prasugrel).

Aftercare

- **How should I rest in bed?**
  - Please rest in bed for between 1 and 4 hours, depending on the puncture area.
  - If your groin was punctured, please keep your leg straight for the duration of the monitoring period.
  - If your wrist was punctured, please avoid bending that wrist or using your hand during the monitoring period.

- **What should be checked and reported?**
  - The nursing staff frequently observe your pulse and blood pressure and check your puncture site.
  - Chest pain after the procedure should be reported to the nursing and medical staff promptly.

- **How soon can I leave the hospital?**
  - If you have had an angiogram only, you are usually allowed to leave the hospital on the day of the procedure. But it depends on the results of the test and the advice of your treating and interventional cardiologist.
  - If you have an angioplasty and stenting, you will stay in the hospital at least overnight and usually be allowed home the next morning.

- **What to expect for the follow-up appointments?**
  - A follow-up appointment will be made with your cardiologist within a week or two. You will be discharged with appropriate medications.
  - Please see your family doctor one week after your procedure to have the puncture site checked.
  - The test results will generally be discussed with you at your follow-up appointment with your cardiologist.

- **Can I drive after discharge from the hospital?**
  - After discharge from the hospital, you should not drive for 48 hours after the procedure.

- **What to expect after discharge from the hospital?**
  - Drink plenty of fluids over the next eight hours, as this helps flush the X-ray contrast out of your system.
  - Have someone stay with you at home the night of your procedure, if possible.
  - The plastic dressing can be removed from the puncture site (wrist or groin) the day after the procedure, following your shower.

- **Can I exercise?**
  - You should avoid heavy lifting the week after the procedure.
  - If a wrist puncture was done, use your arm sparingly for the next one to two days, not flexing the affected wrist for a minimum of 24 hours.
  - Do not lift heavy weights for at least one week following the procedure.

- **What should I do if the puncture site bleeds or becomes very painful?**
  - If the puncture site (wrist or groin) suddenly bleeds or becomes very painful with a large lump under the dressing, lie down immediately and press firmly on the puncture site, calling for help.
  - The person assisting you should call an ambulance, as you may be experiencing bleeding from a major artery.
  - The assisting person(s) should press firmly on the puncture site until the ambulance arrives.
  - If there is redness, swelling, or tenderness in the femoral artery in the groin where a closure device was used, seek medical attention promptly, as this could be due to infection.