

Arterial Venous Fistula



By Dr Ismazizi Zaharudin

Dr Ismazizi Zaharudin shares his expert knowledge on AV Fistulas.

AV Fistula is a dialysis port that facilitates haemodialysis. Although considered a relatively small procedure, it requires the skilful hands of an experienced surgeon.

For haemodialysis, we need to access a somewhat thicker and tougher blood vessel that will withstand the multiple needle punctures that this treatment necessitates.

So, we create an arteriovenous fistula, or what we call an AV Fistula. This is a connection between the artery and a vein that helps to increase blood pressure and the amount of blood flowing through the vein. This increased flow and pressure is necessary for haemodialysis, making an AV Fistula the ideal permanent access for this treatment.



AV Fistulas also last longer than other dialysis accesses, and if looked after correctly, they are less prone to infection.

Surgery to place an AV Fistula is a day-care procedure and can be done under local anaesthesia. The patient can be admitted on the day of surgery, and they do not have to be in a fasted state as most other surgeries would require. While they can continue taking whatever other medication they are on, such as anti-diabetics and anti-hypertensives, certain blood-thinning medications may need to be withheld.

An AV Fistula is usually placed in your non-dominant arm, in the forearm. We will first make one or more small incisions through the skin and select a vein for the surgery. This vein will then be attached to the artery, and then we close up. This simple procedure will only take about one to two hours.

Post-operatively, we will inspect your arm and hand to ensure that blood is flowing smoothly and properly through the fistula. You will also feel the blood rushing through the fistula. This is known as a "thrill". Once we determine that everything is alright, you can be discharged, usually on the same day of the surgery. The AV Fistula will need two to three months to mature before it can be used as a port for haemodialysis.

Like most surgical procedures, you may experience a little post-surgery pain, swelling or bruising around the incision. This should go away after a few days.

Nevertheless, watch out for more severe complications. These could include infection, an aneurysm or something called "steal syndrome", where the hands have reduced perfusion due to high fistula flow. Some patients also experience limb swelling that could be caused by central venous occlusion as a result of prolonged catheterisation.

After you have an AV placed, you will be guided on how to take care of it. This effectively becomes your lifeline and as such, it is very important to look after this access site carefully.

Haemodialysis



By
Datuk Dr Ghazali Ahmad

Patients with end-stage kidney disease (ESKD) require dialysis when both kidneys have failed permanently or dropped well below 10% of normal function. Datuk Dr Ghazali Ahmad talks about dialysis requirements for such patients.

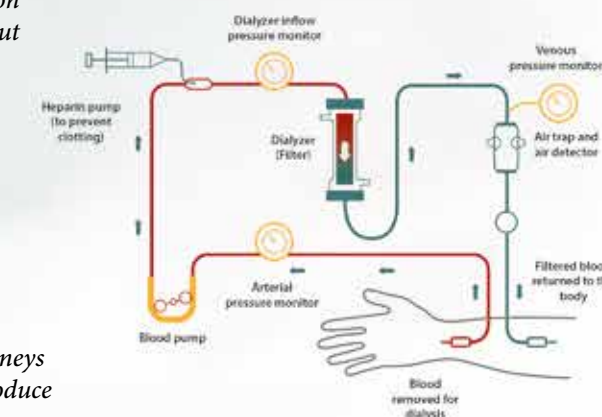
These ESKD patients will unfortunately, require lifelong dialysis - either haemodialysis or peritoneal dialysis - to filter excess water and toxic body wastes, a function that is normally performed by healthy kidneys.

Haemodialysis is the more common option. In a nutshell, patients are connected to a haemodialysis machine that continuously pumps blood out of the patient's body through a blood supply access and returns the processed, cleaned blood into the patient.

Haemodialysis is usually performed three times a week, either in a hospital setting or a free-standing haemodialysis unit and each session takes about 4 hours.

When kidney function fails permanently, the concentration of poisonous substances in the blood poses a danger. Without dialysis treatment, this will cause:

- loss of appetite and nausea
- fluid retention, leg swelling and shortness of breath
- the blood to become acidic due to the accumulation of metabolic acids - resulting in a sensation of air hunger and bone and muscle weakness
- potassium to increase to a dangerous level - this can cause cardiac arrest
- tiredness (anaemia) due to inadequate blood as the kidneys fail to produce enough hormones that are needed to produce healthy red blood cells



When kidney function drops to approach the last stage of chronic kidney disease (Stage 5 CKD) or when end-stage kidney disease appears inevitable within 6-12 months, it would be time to place an arteriovenous fistula (AV Fistula) that will be the dialysis port for haemodialysis.

A good fistula takes many weeks to mature, so we usually recommend preparing it six months before its anticipated use. We need the fistula vein to be fully expanded, and the wall of the vein strengthened and thickened for successful needling and for adequate blood flow to facilitate the haemodialysis process.

It also gives us time for any necessary corrective surgery before the first haemodialysis treatment.

As you can see, ESKD is life-changing; it is irreversible and life-threatening. If a kidney transplant is not on the cards, haemodialysis is the only solution. It is very time consuming and expensive, but it is the lifeline of the patient.

As with all chronic illnesses, the best cure is always prevention and kidney problems, to a large extent, stem from chronic lifestyle diseases such as diabetes and hypertension.

While doctors can treat and operate - to a certain degree - the first responsibility starts with you; it is up to you to ensure that you do whatever you can to live a healthy life.