

ELECTIVE (SSC5b) REPORT (1200 words)

A report that addresses the above four objectives should be written below. Your Elective supervisor will assess this.

The patients that I saw during my placement had been diagnosed with chronic kidney disease (CKD). Their declining renal function was often detected after tests for other reasons. Some of the most common underlying causes of their declining renal function were diabetic nephropathy and hypertension, and obesity and increasing age are also risk factors. Other causes of CKD that I encountered were IgA nephropathy and polycystic kidney disease.

The management of CKD depends on the root cause. All patients with CKD are advised about lifestyle modifications they can make. Good glycaemic control and blood pressure control are important, as is losing weight in obese patients. Smokers are encouraged to quit, and caution must be used with certain medications. Urea and electrolytes are also monitored regularly.

Patients with severely reduced kidney function may require haemodialysis or peritoneal dialysis. Haemodialysis patients may undergo a procedure to create an arteriovenous fistula to improve vascular access, the advantages of which include higher volume flow rates, and the reduction in the risk of developing stenoses, which are more likely when using synthetic grafts. Peritoneal dialysis can be used in some patients, and has its own advantages and disadvantages. It can be performed at home or when travelling, whereas haemodialysis usually takes place at a hospital or dialysis centre on a set schedule. There are also fewer food and fluid restrictions with peritoneal dialysis than with haemodialysis. Peritoneal dialysis however is required more often. Haemodialysis is usually done 3 times a week for 3 to 5 hours a time. Peritoneal dialysis does not involve the use of needles, instead, a catheter is inserted into the abdomen, and this is used. This does have the effect of increasing the risk of developing bacterial peritonitis.

In some patients, kidney transplant may be a more suitable option than dialysis. These patients usually require dialysis while waiting for a suitable donor to become available, but upon successful transplantation, dialysis is no longer required. This is not without risks however, and apart from the usual risks associated with surgery, there is a risk that the transplant will be unsuccessful. Transplant patients also require immunosuppressant medication for the rest of their life. A successful transplant relies on the presence of a suitable donor kidney, which can add another element of uncertainty. Transplants are not guaranteed to necessarily last for the entire lifespan of the recipient; younger patients who receive transplants may find that they require new transplants later in life. Donor kidneys from living donors can last around 20 years, and those from deceased donors last a little less, although they can last for longer or shorter amounts of time than this. Transplant recipients have an increased risk of infections due to the immunosuppressant drugs, and are also at an increased risk of developing skin cancer and lymphoma. Patients with a hereditary disease such as polycystic kidney disease may have a more difficult time finding a live donor kidney, as members of their family may also have the same condition as them.

In London there are greater populations consisting of black people and people of south Asian origin. CKD is more common in black and south Asian people, and so it would be expected that the incidence and prevalence of CKD would be increased in London in comparison to Cardiff. People of south Asian origin are at a greater risk of developing type-2 diabetes, which also puts them at a greater risk of developing CKD later in life. As percentages of the total population however, Cardiff has a higher

percentage of people who are 65 and over at 13.9%, compared to London, where 11% of the population are 65 or over. This may influence the balance in the other direction; the prevalence of CKD is estimated to be greater in the parts of England that have a higher percentage of elderly people.

There does not seem to be a difference between the management principles of CKD in Cardiff compared to London. However when it comes to kidney transplants there may be some differences attributable to the differences in population ethnicity. Due to the larger variance in ethnic groups in London, it may be the case that some patients spend longer on the transplant list due to the increased difficulty in finding a suitable donor because of the smaller pool of potential donors for non-Caucasian groups. There is also a higher incidence and prevalence of tuberculosis in parts of London due to increased travel to and from countries where tuberculosis is more prevalent and also due to increased levels of poverty in some areas. Renal transplant patients that are suspected to be at risk of tuberculosis infection may require prophylactic antibiotics post-transplant.

I attended outpatient nephrology clinics where patients with CKD are advised about dialysis and transplants. One of the methods of assessing the severity of the condition is by using the GFR. The normal value for this can vary greatly depending on factors such as age, but it is a useful marker for determining when someone will require renal replacement therapy. It is important to get information from the patient as to whether or not they are diabetic, hypertensive, obese, or have other medical problems, and the benefits and risks of transplants are discussed with the patient. I also learned about how people can choose to become live donors, whether they are related to the person in need of a transplant, or if they are donating altruistically. Altruistic donation was a concept that I had not encountered in the past, and I did not realise that it was a possibility. For all live donors, the donor needs to be in good health, and their kidney function has to be good enough to ensure they will not be disadvantaged after giving one of their kidneys. Their kidney also needs to be adequate for the recipient of the transplant. There needs to be no evidence of coercion, and no exchange of money, and the recipient must be able to explain why they want to donate a kidney. They must have the capacity to make that decision.

I also observed some different surgical procedures, such as the second stage of a brachiobasilic fistula procedure, and a live kidney transplant. The live kidney transplant involved a nephrectomy in the live donor, with a subsequent transplantation into the recipient. The nephrectomy was performed using a combination of laparoscopic techniques and a horizontal incision in the lower abdomen. The incision allowed the insertion of a hand into the abdomen and allowed for the removal of the kidney, whilst laparoscopic tools were used to dissect around the kidney and perform the nephrectomy. After removal the kidney is flushed with perfusion fluid and cooled, before being stored. During the transplantation, the renal artery and vein in the recipient must be joined to the donor kidney. Upon revascularisation of the kidney, reperfusion is seen, and urine can be seen to be produced from the ureter. The donated ureter is then attached to the bladder, and in order to aid this, a saline bag is attached to the urinary catheter, which pushes saline back into the bladder.