RENAL MEDICINE

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Word Count: 1,200

Elective Report

Placement: Renal Medicine at Nepean Hospital

Objectives

1. What conditions are contributing to renal disease in Australia?
2. How do health services in Australia compare to the UK?
3. Brief Summary of Chronic Kidney Disease
4. How has this placement prepared me for my role as an FY1 doctor?

1. What conditions are contributing to renal disease in Australia?

Chronic Kidney Disease (CKD) can be defined as a condition where a person has reduced kidney function or evidence of renal damage for at least 3 months. 1 in 3 Australians are at increased risk of developing CKD and 1 in 9 Australians have at least one clinical feature indicative of CKD(1).

The top causes of end stage kidney disease are diabetes, nephritis and hypertension. Risk factors include family history, age, diabetes, obesity and high blood pressure. Those in lower socio-economic areas are at greater risk of developing these conditions. After living in Australia for the past few weeks, it has been evident to see that the cost of living is extremely high, especially in comparison to the UK. Fresh produce is far higher in price than fast food rich in saturated fats and salt. Meaning those that are living with low incomes are far more likely to eat a poor diet contributing to poor health.

A risk factor in particular to Australia is that those who are of Aboriginal or Torres Strait Islander decent are at greater risk of developing renal disease. Indigenous Australians are 4 times more likely to die with CKD than non indigenous counterparts. It is believed that as well as the common risk factors contributing to CKD, indigenous Australians are more likely to develop CKD due to inadequate nutrition, poorer living conditions, alcohol abuse and an increased incidence in streptococcal infections (2), (3).

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2. How do health services in Australia compare to the UK?

After working at Nepean hospital for the past 4 weeks, I have observed many differences in healthcare in comparison to the NHS hospitals I have worked at in London. Even though financial pressures exist in all healthcare facilities, I have observed that there are less financial burdens here at Nepean in comparison to an NHS hospital. For example investigations are ordered far more freely here, whereas in the UK there is constant reminder about the cost of investigations that are being ordered and only to run through those that are deemed absolutely necessary. Also bed pressure is far less a problem here than in London. This might be due to the fact that the population of London alone is around 8.5million, whereas the entire state of New South Wales has a population of 7 million. I have witnessed patients that have extended stays due to social problems. In the UK there is great pressure to provide care packages rapidly so that more beds can be made available to other patients.

The UK is densely populated, meaning even those living in the countryside or rural areas still have quick access to a nearby hospital. The population here is far sparser with populations in rural areas having less access to local health facilities. According to the National Rural Health Alliance in Australia kidney disease is currently a burden in rural Australia. Statistics show that end stage kidney disease is 4 times more prevalent in those living in rural areas of Australia. This is partly due to an increase number of late referrals of those in rural areas as well as the burden of dialysis (4). Dialysis is a time consuming treatment that can last for around 4 hours a few times a week. Those in rural areas have less access to larger hospitals and will have an increase in travel time to their nearest treatment centre. Rural areas are also less likely to have a wide array of transportation networks in comparison to the city. Data from the Australian and New Zealand Dialysis and Transplant registry show that there is a greater rate of mortality in patients on dialysis in rural areas than those in the city(4). Home dialysis can be an option. However problems are faced as training for those on home dialysis usually occurs in main city hospitals.

Kidney Health Australia has been aiming to provide support for those living in rural areas. Monthly kidney community letters are posted to those who may not have a reliable internet connection. Also housing facilities such as FAITH housing provides accommodation for those requiring kidney transplants in Perth as well as respite camps for families affected by renal disease (4).

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3. Brief Summary of Chronic Kidney Disease

As stated earlier, CKD Chronic Kidney Disease (CKD) can be defined as a condition where a person has reduced kidney function or evidence of renal damage for at least 3 months. Kidney function is assessed by eGFR.

There are 5 stages of CKD:

Stage	Description	GFR (mL/min/1.73 m^2)
1	Kidney damage with normal or ↑ GFR	≥90
2	Kidney damage with mild ↓ GFR	60–89
3	Moderate ↓ GFR	30–59
4	Severe ↓ GFR	15–29
5	Kidney failure	<15 (or dialysis)

Extracted from: http://medicinexplained.blogspot.com.au/2011/07/stages-of-chronic-kidney-diseases.html

Non modifiable risk factors include low birth weight, family history, existing or previous renal disease and increasing age. Modifiable risk factors include hypertension, diabetes, obesity, smoking and heart disease (5).

Usually, especially in the earlier stages of CKD, most patients are asymptomatic. It is usually an incidental finding where rising creatinine levels are detected on a routine blood test or proteinuria is evident on urine dip. As renal function declines, patients may experience symptoms due to declining kidney function. For example:

- Uremia
- Hyperkalaemia – Lethargy and cardiac arrhythmias
- Anaemia – tiredness due to decreasing erythropoietin synthesis
- Oedema
- Hypertension – due to hormones produced in the renin-angiotensin system.

Treatment aims to reduce deteriorating renal function and treat the underlying cause of kidney damage (6).

Aggressive control of modifiable risk factors is a must. CKD has many common risk factors as those with cardiovascular disease, and those with CKD are at high risk of morbidity and mortality of cardiovascular events. It is the leading cause of death in those with CKD. Hyperlipidaemia is to be managed with statins. Lifestyle and dietary changes are required. Those that lead a sedentary lifestyle are encouraged to exercise and those with a BMI > 30 require dietary control. Smoking cessation is highly encouraged.

Pharmacological treatment of CKD is aimed at preventing the decline to higher stage classifications. Hypertension control and the use of ACE inhibitors or angiotensin receptor blockers have been shown to slow down progression of the disease [5].

In advancing stages of the disease, due to poor renal function, erythropoietin and calcitriol may be given due to the inability of the kidneys to continue synthesis of these compounds.

Those that enter CKD stage 5 require long term dialysis or transplant if available.

4. How has this placement prepared me for my role as an FY1 doctor?

Having a placement in renal medicine at Nepean means that I have been able to work with a number of teams. Renal medicine is a specialty that involves many other specialties due to the number of functions the kidney maintains. My renal placement in London was extremely short and this placement has allowed me to reflect on the specialty as a possible job choice in the future. I feel I have appreciated the sheer amount of knowledge required in order to become a renal physician and that in my first job at Queen Alexandra hospital (Geriatrics) there will be an element of renal medicine required.

I feel that as an elective student I haven't had the time constraints or pressures as a medical student in the UK. I have spent longer building rapport with patients and being able to practice my clinical skills frequently.

All in all, this placement has provided me with knowledge and key transferable skills, as well as many fond memories of working at Nepean.

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