ELECTIVE (SSC5b) REPORT (1200 words)

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

1. Urological cancers are compromised of numerous different types of cancers, which include: Renal carcinoma, bladder/urothelial carcinoma, prostate, testicular and penile.

Similarly to other cancer types, an increase in prevalence has been noted over the over recent years. Prostate cancer has now become the most prevalent adult male cancer, and third most common cause of cancer related deaths. Roughly 40,000 new patients are diagnosed with prostate cancer in the UK, and there are roughly 10,000 annually which is decline from the early 2000s. Bladder cancer incidence has decreased in the last decade by roughly 12% to 10,000 new cases per year. The rates of mortality, however, have shown a smaller decrease of only 6%, with roughly 5,000 per annum. Testicular cancer remains rare, with roughly 2,000 newly diagnosed cases per year and a mortality of 50 per annum.

Since Guys is a major urological centre in the UK, I witnessed a wide variety of cases to the aforementioned with the exception of penile cancer. Due to the availability of robotic surgery, a number of cases of locally advanced cases were referred onto the centre. A number of more difficult cases were also discussed in the MDTs which outlined a number of unusual cases. Considering that this is a tertiary centre I must consider that the population I witnessed may not be reflective of the actual distribution within the population in London.

Due to the varying presentations and course of the condition, NICE recommends a variety of different treatment methods. Due to the large number of urological cancers, instead I chose to focus on the most common cancer to present at the hospital.

Prostate cancer is treated according to how it is classed. This is split into: low, intermediate and high according to the D'Amico risk stratification (table 1.). And according to this risk level, the patient should be treated accordingly(fig 1.). It is important to note that age is not one of the determining factors for treatment, and apparently this is currently an issue which has resulted in under-treatment of the elderly population considering their age. It is suggested that low risk patients should be treated by active surveillance, meaning that the patient should undergo regular monitoring to ensure that the condition hasn't progressed further. For those who are deemed intermediate risk, the aim of treatment is curative with either radical prostatectomy or radical chemotherapy. For higher risk patients, the bulk of patients discussed in the MDTs, there is a grey area in terms of treatment. Radical prostatectomy or radiotherapy if there is suspected good long term survival, with pelvic radiotherapy in nodes present. Other treatments following surgery should be considered for intermediate and high risk, include hormone deprivation therapy and/or radiotherapy for at least 6 months. If this fails, chemotherapy may be considered as a final option.

Table 1. D'Amico Risk Stratification of prostate cancer

	Low risk	Intermediate risk	High risk
PSA (ng/ml)	**<10**	**10-20**	**>20**
Gleason score	**<7**	**7**	**>7**

Stage T1-T2a T2b T2c-3

Compared to the past, there are numerous new therapies available in the UK. Robotic surgery is becoming widespread practice in numerous hospitals throughout the UK for locally invasive disease. Over the years, a number of new medical therapies have developed; examples of this include drugs which target testosterone receptors for prostate cancer. For renal cell carcinoma, due to the ineffectiveness of chemo; medical options were originally limited but over the last few years the use of anti-VEGF drugs have developed a widespread use.

3. Prostate cancer treatment has made huge advances, particularly around 2015. But a larger number of resistant cancers still are difficult to treat. This has led to the development of multiple novel therapies, one such drug is galeterone. Galeterone is an anti-androgen with affects as an androgen receptor-V7 antagonist and inhibition of CYP17 which results in androgen receptor degradation. The rationality for this as a new treatment was due to tumours expressing AR-V7 castration resistant metastatic cancer being resistant to older therapies, Enzalutamide and abiraterone, and tumours which develop resistance by upregulating AR, splicing variants of androgen receptors and new mutations. However, the ARMOR3-SV study which was comparing galeterone to enzalutamide was discontinued following an independent data monitoring committee due to the unlikelihood of it ever reaching its endpoint.

Other novel therapies, which appear promising but aren't currently supported by a substantial amount of evidence are is p53. It is a powerful tumour suppressor. The gene encoding p53 protein is mutated or deleted commonly in castratation resistant metastatic prostate cancer, which inactivates its tumor suppressor activity. Recently there have been several advances being reported for targeting TP53, but sadly only MDM2 protein inhibitors currently have enough evidence out to be considered. Mdm2 has been identified as a p53 interacting protein that represses p53 transcriptional activity. Therefore, therapies which aim to inhibit the activity of MDM2 results in increased transcriptional ability of TP53 which suppresses tumour growth.

4. By actively participating and observing during this placement, use this as a chance to consolidate clinical and communication skills, which will be applicable to new responsibilities required for future jobs. Use this as a chance to improve knowledge in the specialty of oncology which wasn't formally included as a rotation at medical school.

The placement didn't involve a large amount of clinical work. I was able to observe consultations and considering this was relating to oncological problems, this gave me a chance to observe communication skills habits particularly relating to breaking bad news.

This is a very useful skill which didn't sadly we didn't have a great opportunity to practise at medical school as much. Considering that we never had a formal oncological placement, the attachment in this department provided valuable experience at watching experienced clinicians deliver bad news and how to deal with this. Patients frequently had to be informed that there are no longer any available treatments and therefore need to be discharged from the services. This is a particularly difficult conversation, since I witnessed a number of patients take this as, "so you just want to get rid of me". To get past this idea of being abandoned by the doctors, the consultant made sure to inform the patient that they could always be re-referred to the clinic. In the cases where the patient was more anxious, the consultant took this into account and offered to follow up the patient but in a longer timeline and slowly taper this before discharge back to their community care.

Other than this, I frequently attended the MDTs in which I was able to develop my ability of interpreting CT scans and testicular US scans. This was something which wasn't formally taught to me during my medical training, which is a massive deficit in our current training considering the widespread use of this intervention. A slight background knowledge in this, before reporting, would be useful.

During this placement used it as an opportunity to choose what I attended and tailor it to aspects I had not witnessed before. I was fortunate enough to be permitted to attend a research ethics committee meeting. This provided valuable insight into how studies are assessed prior to being given ethical approval to be conducted. And this will be very useful in the future, should I decide to conduct a study.