

## **ELECTIVE PROJECT: A Comparison of HIV Epidemiology and Management in the UK and Tanzania with Regards to Child and Maternal Health.**

The HIV epidemic places a huge burden on healthcare systems across the world by increasing both morbidity and mortality due to its associated complications. According to the World Health Organisation (WHO) 34 million people worldwide currently live with HIV. In 2012 it was estimated that 1.5 million of those people were in Tanzania. Of this number, 48% were women and 15% children. Furthermore, 1.2 million children in Tanzania were orphaned due to AIDS during that year, demonstrating the vast impact HIV has on child and maternal health. In contrast, it was estimated that 98,400 people were living with HIV in the UK in 2012, a staggering difference in number.

There are, however, similarities in the modes of transmission of HIV when comparing Tanzania with the UK, with the main driver of the epidemic in both countries being unprotected sexual intercourse. Other factors such as promiscuity, substance abuse and concurrent sexually transmitted infections also contribute, however in Tanzania vertical transmission from mother to child is much more of a problem and accounts for more than 90% of HIV infection in children under 15 years of age.

At Huruma hospital HIV is common and a dedicated HIV clinic runs twice weekly. On the wards the impact of the condition is evident as patients are admitted due to opportunistic infections or complications related to the disease. Anaemia, diarrhoea, candidiasis, tuberculosis and pneumocystis pneumonia were daily ward round findings. Poor adherence to antiretroviral medication often underlies the deterioration, reasons for which include stigma, forgetting to take tablets, and concurrent alcohol abuse. At Huruma patients are only prescribed a 30 day course of antiretrovirals and will often not return each month for an assessment, instead sending a family member in their place. Their condition can therefore deteriorate without a healthcare provider being aware of the situation.

It has been demonstrated that patient education regarding HIV is key when it comes to its transmission, prevention and treatment. The UK focus heavily on this aspect of the condition to try and limit the spread of HIV, and many services are available to patients including GPs, sexual health clinics, charities and hospitals. In addition, vital resources can be provided such as free condoms and needle exchange programmes. In Tanzania, patient education is a newer concept, but it is being slowly introduced especially at the community level where sexuality, gender roles and cultural practices are discussed. Furthermore, with understanding comes a reduction in stigma, another key aspect in the battle against HIV and one which has yet to be overcome in Tanzania.

As part of the push in education, Huruma have adopted the Provider Initiated Testing and Counselling (PITC) scheme, which aims to educate any admitted patient about HIV so that they can make an informed decision about testing. This is similar to the UK, where doctors encourage HIV testing for all patients admitted to hospital. The difference in the UK is that HIV testing is widely available through other means as well and patients can easily access these if required.

### **HIV in Child and Maternal Health.**

Due to the impact that vertical transmission has on children preventing mother to child transmission (PMTCT) is a vital measure and consists of the prevention of HIV transmission during

pregnancy, delivery and breast feeding. The aim is to reduce the maternal viral load so that the risk of transmission from mother to child is dramatically lowered.

At Huruma women are encouraged to book in early, ideally before 12 weeks, whereby they will be offered HIV testing if they are not aware of their HIV status. If found to be seropositive the woman will be counselled along with her partner and offered antiretroviral therapy. This is termed 'B Plus Management' and involves taking a combination of medications including lamivudine, tenofovir and efavirenz. If the woman is already known to be HIV positive she can remain on her regular antiretrovirals, as long as they are effective and not teratogenic. In the UK, zidovudine and lamivudine are the drugs of choice in HIV positive pregnant women.

Without antiretroviral treatment there is a 40% chance that a baby born to an HIV positive mother will themselves develop HIV, however with treatment the risk is reduced to less than 1%. This means that spontaneous vaginal delivery is a safe option at birth, and in Tanzania a Caesarian section is only indicated in cases where maternal trauma is likely, such as with cephalo-pelvic disproportion, or if there is foetal distress.

The risk of HIV transmission remains after birth, and therefore after delivery infants are given antiretrovirals. In the UK zidovudine is usually given, twice daily for four weeks, and viral load is monitored to aid management. In Tanzania, babies are given nevarapine for 6 weeks before being tested for HIV DNA by PCR. If the test returns a negative result the nevarapine must still be continued until one week after the mother ceases breast feeding to prevent transmission via the breast milk. If the test returns a positive result then the baby is rechecked after 2 weeks (after cessation of breast feeding) again and if this is also positive then they are started on a combination of zidovudine, lamivudine and nevarapine. Further antibody testing can be carried out at 9-18 months. Throughout childhood antiretroviral drug quantities are calculated according to body weight, and there are different combinations that can be utilised depending on the child's response to treatment and general health.

## **Reflection.**

This elective has provided me with a wealth of opportunities to improve my clinical skills, in particular St Joseph's medical ward proved to be a brilliant environment in which to practice these. Due in part to poor provision of community based care and general knowledge regarding health and disease most of the patients I saw had striking clinical signs as they had presented to the hospital so late on in the course of their condition. The prevalence of HIV in the local population also meant that opportunistic infections such as tuberculosis were commonplace, and many of the patients had clear chest signs. Seeing these features time after time helped greatly with being able to confidently recognise them and thus go on to form a diagnosis. There were also a number of patients presenting with abdominal or cardiovascular disease, and due to the limited resources in the hospital, for example no ECG machine or echocardiogram, it was necessary to rely purely on the clinical findings and a good patient history to be able to come up with a diagnosis.

Whilst Huruma provides a high standard of care in relation to its small size and rural location the efforts of the doctors are hampered by the aforementioned lack of resources. Basic monitoring equipment, medications and imaging are all affected. A particularly sad case highlighted the impact that low resources can have on outcome in Tanzania. A young boy of 27 was so severely anaemic that he had developed heart failure, however the blood units come from a bigger hospital over an

hour away by car. They were so delayed in being collected that by the time the patient received them it was too little too late and he passed away. A steep learning curve, but helping to conduct ward rounds whilst at Huruma taught me a great deal and allowed me to utilise clinical signs to formulate a differential diagnosis and management plan for a wide range of patients.

I have thoroughly enjoyed my time at Huruma and felt warmly welcomed and included by all members of staff. The variety of cases has allowed me to consolidate my learning and I feel that my ability to diagnose and manage a range of differing conditions has greatly improved. I would be happy to return in the future and would recommend it highly as a valuable learning experience.