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“Rural Medicine in South Africa and Mozambique”

1. Describe the patterns of disease in rural South Africa and rural Mozambique and discuss in the context of global health.

A number of diseases stand out because of their high prevalence in comparison to the UK. Firstly, HIV: one in three people in Kwazulu Natal are infected by HIV [1]. The immunological implications of HIV result in higher incidence of other conditions such as tuberculosis, cryptococcal meningitis, cytomegalovirus, cervical cancer and kaposi's sarcoma. I saw multiple patients with each of these conditions whilst at Mseleni. TB is a significant problem in the local area, with higher rates amongst those who are HIV positive. Mseleni had a dedicated TB ward to accommodate newly diagnosed patients during the initial phase of treatment, whilst they are still infective.

Unlike in the UK, tonsillitis is routinely treated with antibiotics because of the risk of contracting rheumatic fever. I saw several patients who had mitral valve replacements due to rheumatic heart disease. Malaria featured highly in the differential for patients with fever or hepatomegaly and was routinely tested for. Other parasitic infections occur commonly, including ascaris lumbricoides (round worms) which travel through the lungs as part of their lifecycle. This can cause a pneumonitis that results in a wheeze, hence worms appear in the differential diagnosis for asthma in children.

One other condition that merits discussion is “Mseleni Joint Disease”, a type of arthritis of unknown aetiology unique to the local area. It most commonly affects the hips and whilst initial treatment is with NSAIDs, many patients require a total hip replacement at a much younger age than with osteoarthritis. Sometimes knees, ankles and wrists are also affected. Due to the high number of cases, Mseleni hospital has developed expertise in Mseleni joint disease and in conducting total hip replacements.

Aside from the conditions discussed, patterns of chronic disease encountered in rural South Africa were similar to the UK, namely hypertension and heart disease, cancer, COPD and diabetes. Hypertension and diabetes are noted to be on the rise locally as obesity is becoming an increasing problem even in rural areas. It has been reported that non-communicable chronic diseases are responsible for almost one third of deaths in sub-Saharan Africa [2]. Such non-communicable diseases reflect trends in disease burden globally and should not be considered to be first world problems.

My placement in Mozambique was in a high risk malarial area. I saw a number of patients presenting with high fever, headache and myalgia who tested positive for malaria including a baby with suspected cerebral malaria who was rushed into the clinic, having a seizure. Worms and other parasitic infections were a big problem including urinary schistosomiasis and lymphatic filariasis as well as more common intestinal helminth infections. Access to clean drinking water is still a major issue in the area. There was also a significant incidence of sexually transmitted infections, and education regarding sexual practices formed part of such consultations. In addition to conditions encountered worldwide such as hypertension and asthma, there were also many patients seeking help for wounds, scalds and abscesses.

2. Describe the pattern of health provision in rural South Africa and contrast this with health provision in rural Mozambique, and compare both settings to UK health provision.

Health provision in rural South Africa shares many features in common with the NHS in the UK. The South African national health service which runs primary care clinics and secondary and tertiary hospitals. Treatment is free at the point of use and there is a referral system for access to hospital and specialist care.

Mseleni hospital is a 184-bed district general hospital in a rural area of South Africa which has medical and surgical wards, maternity services and an A&E department (OPD). It has its own X-ray, ultrasound and laboratory facilities so basic imaging and bloods could be done quickly on-site. However, the range of tests and imaging available was limited. For example, to organise a CT-scan required a referral and transport to take the patient the 200km (4-hour) journey to the referral hospital. Such constraints require doctors to rely more on clinical assessment and standard blood tests in diagnosing and treating patients, without relying on more complex investigations which we might take for granted. I was impressed by the level of support available to doctors in terms of telephone advice from Consultants at the referral centres, including 24-hour HIV and obstetrics hotlines.

The government community clinics are organised directly by the local hospital. Mseleni provides primary health care for 90,000 rural people through 8 clinics, largely staffed by nurses with a supervising doctor visiting regularly. The professional nurses complete an extra one year Primary Health Care course and have responsibility for managing patients with chronic disease in the community as well as seeing unwell patients and minor injuries. If they are concerned about a patient, they can refer them to see a doctor at Mseleni hospital the same day or book them to see a doctor at the clinic, as appropriate.

The state delivers health services for 80% of the population, contributing 40% of health expenditure in South Africa [3]. The large commercial private health sector is widely used by higher earners, primarily through purchasing health insurance. In contrast, “traditional healers” are often consulted, especially in rural areas and their home-made medicines and rituals can be harmful. Doctors at Mseleni are familiar with managing the consequences of such treatments.

As in South Africa, there is a government run health system in Mozambique comprised of local clinics and regional hospitals. Health care is free, however, resources are extremely stretched. Patients told stories of queuing all day at the hospital and not being seen. This is particularly a problem if surgery is required, and patients might return home without having the operation. Rural clinics are staffed by “technicals” who have had physicians assistant training in diagnosis and basic management. NGOs provide additional health provision. My placement was in an NGO that runs a primary care clinic and a twice-weekly satellite rural clinic. Only basic tests were available, such as for malaria. Most diagnoses were made primarily on the basis of history and examination with referral to the hospital where required.

3. Develop an understanding of HIV, its impact on patients and implication for the practice of medicine in an endemic area, including obstetrics, maternal health and community awareness.

As the risk of contracting HIV is so high, patients are routinely tested to determine their HIV status. Viral load and CD4 count are monitored, and patients are started on anti retro-virals (ARVs) if their CD4 count falls below 350. If the first line fixed dose combination (Tenofovir, Emtricitabine and Efavirenz) fails, second line treatment is typically AZT, 3TC and Alluvia. Failure on this regimen prompts referral and virological resistance testing. Treatment failure may be virological (increasing viral load), immunological (falling CD4 count) or clinical (aids-defining disease).

Practicing medicine in this context requires a good understanding of HIV-related illnesses when generating differentials to include conditions more likely to occur in immunocompromised patients, including considering IRIS (Immune reconstitution inflammatory syndrome) as patients respond to ARVs and are able to mount an immunological response to infection. Prophylaxis is routinely given (co-trimoxazole for PCP and isoniazid for TB-exposed patients) and drug interactions must be considered, for example increasing dosage of Alluvia with TB-medication.

In terms of obstetrics, affected women are prescribed ARVs throughout pregnancy and neonates are given nevirapine until 6-weeks post breast-feeding to reduce transmission rates. Most HIV positive women deliver vaginally because the sheer numbers involved prohibit routine elective caesarean sections. Breast-feeding for six months is encouraged due to difficulties with accessing clean water and the expense of formula milk, which is balanced against the risk of vertical transmission.

One case that stands out to me was an HIV positive woman in her 30's with a young child who had missed several appointments and was non-compliant with ARVs. She presented with hip pain and was seen in clinic with query Mseleni joint disease. Her non-typical X-ray prompted further examination which revealed a stage 4 cervical carcinoma and canon-ball lung metastases on chest X-ray. This case highlights the challenges of following-up HIV patients in a large rural community where people may present late due to family commitments and distances required to travel to clinic.

The HIV rate in the area of Mozambique that I visited is approximately 20%, so HIV testing was requested when suspicious such as failure to thrive in a one year old infant or oral candidiasis in a child. Testing and anti-retrovirals were available at the government facility. The NGO ran a "milk clinic" providing food supplements and growth monitoring for malnourished babies. If a mother was HIV positive she was still encouraged to breast-feed for 6 months where possible. If she was having problems breastfeeding, formula milk was preferred because of increased risk of vertical transmission if nipples become infected and bleed. Local beliefs such as not being able to have sex with your wife until a baby is 2 years old result in widespread involvement with prostitutes, which perpetuates HIV transmission.

4. Develop in confidence in managing patients in both hospital and clinic environments (under supervision) and gain further experience of practical procedures, including in theatre and on the maternity ward.

At Mseleni, I gained experience in a variety of clinical settings including ward rounds, A&E, and clinic. There was a teaching ward round most mornings, rotating through different wards. As most patients' spoke only Zulu it was difficult to clerk patients myself. However, the doctors loved teaching so shadowing them allowed me to examine patients, discuss differentials and management plans. For example, systematically working through a treatment plan for a woman with known HIV and previous abdominal-TB who presented with a failing viral regimen, per-vaginal bleeding, headache and skin sores. Many patients had hepatomegaly, allowing me to gain confidence in palpating and describing liver edges. On the maternity wards, I became more familiar with interpreting CTGs and performing ante-natal examinations. There was opportunity to participate in practical procedures under supervision and I enjoyed assisting in a caesarean section including closing the abdomen, as well as suturing stab wounds.

In Pemba, I gained experience managing patients in a primary care setting by both shadowing expatriate doctors and local "technicals" as well as conducting my own consultations under supervision. At the Mizeze satellite clinic I saw hypertensive patients and follow-up patients for review. I learnt to recognise possible malaria, conduct the rapid test and prescribe malaria

treatment regimens. I also grew in confidence in prescribing for common infections encountered including parasitic and fungal infections. In terms of practical procedures, I gave IM injections for STI's, did capillary blood glucose testing and assisted with wound care.

References:

1. Mseleni Hospital: Diseases and Illnesses. Available Online:
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3. "Health care in South Africa" Brand South Africa. Available Online:
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