HIV. CONNER Adrian

Elective Report: HIV and Pregnancy in Kwazulu Natal

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The Challenge of HIV and Pregnancy in Kwazulu Natal

Background and Epidemiology

Most of the thirty-three million people living with HIV are in the developing world, where HIV infection in pregnancy has become the most common medical complication of pregnancy in some countries, namely South Africa. More than 70% of all HIV infections are a result of heterosexual transmission and over 90% of infections in children result from mother-to-child transmission. Almost 600 000 children are infected by mother-to-child transmission of HIV annually, over 1600 each day. Southern Africa is the most affected country. In parts of southern Africa, the prevalence of HIV in pregnant women is over 30%, and possibly as high as 40% in rural Kwazulu Natal. Worldwide, there have been 8.2 million children who have lost their mothers or both parents to AIDS to date in the epidemic, at least 95% of whom have been African[1 2].

HIV and Maternal Death

The first meeting I attended on arrival at Lower Umfolozi Hospital was the daily review of maternal deaths and rape incidences. There has been a 30 per cent increase in maternal deaths between 2005 and 2010, when compared to the previous three-year period, with HIV and AIDS accounting for over 40 per cent of the deaths (43.7%). By far the most deaths occurred in KwaZulu-Natal, which has the highest HIV/AIDS rate. Over 400 deaths were reported in his province in 2010. Although only around 60 per cent of the almost 2000 women who died had been tested for HIV, almost eight out of ten of those tested were HIV positive. In the last 18months, five deaths at Queens Hospital, Romford has lead to an enquiry into the quality of maternal care. Edinburgh has only witnessed one maternal death in over ten years. A stark contrast to the four maternal deaths being discussed at the Monday morning MDT meeting in Umfolozi, following a particularly horrendous weekend.

Aside from AIDS-related infections, which killed three times as many women as any other complication, hypertension (15.7%), obstetric haemorrhage (12.4%), pregnancy-related sepsis (9%) and pre-existing maternal disease (6%) were the other main killers. Of the deaths that could have been avoided, good management of complications of hypertension, obstetric haemorrhage, pregnancy related sepsis and non-pregnancy related infections are vital.

Women under the age of 20 were at greatest risk of dying from hypertension while those 35 years and older were at greater risk of dying of haemorrhaging, ectopic pregnancies, embolism, acute collapse and pre-existing medical disease. Deaths due to non-pregnancy related infections peak at 25-29 years and this peak is mirrored in deaths due to complications of abortion and pregnancy related sepsis following a viable pregnancy.

Effect of HIV infection on pregnancy

In pregnancy, immune function is suppressed in uninfected women as well as those who are HIV-positive[3] [4]. Normal reduction in immunoglobulin and complement levels and most significantly, cell-mediated immunity during pregnancy are accelerated by HIV infection. The primary evidence of this effect is in the high rates of bacterial pneumonia and tuberculosis in HIV infected pregnant women[5]. AIDS is common cause of maternal mortality in South Africa, as the epidemic has progressed, however this is an apparent consequence of more women with advanced disease becoming pregnant, with resultant higher rates of HIV complications[1].

HIV infection has been reported to have little effect on pregnancy outcome or complications in the UK[6]. Adverse pregnancy outcomes have, however, been reported more commonly in a number of African studies[7] [8] [9] including complications of both early and late pregnancy. HIV may be the direct cause or a marker of a complex interaction of related medical and social conditions that affect pregnancy. Complications of early pregnancy have been associated with HIV infection in many studies[7] [10] [11] [12] [13]. HIV infection in Africa has been linked to a higher rate of spontaneous abortion[14]. HIV seropositive women are 50% more likely to have had a previous spontaneous abortion, and this rises to over 80% in women who are seropositive for both HIV and syphilis[15]. An American study showed a three-fold increase in early spontaneous abortion in a prospective follow-up study[12]. More than half of these aborted fetuses had evidence of HIV infection.

Higher rates of ectopic pregnancy have been reported in HIV-positive women than in uninfected women, which may be related to the effects of other concurrent sexually transmitted diseases. Genital tract infections such as *Neisseria gonorrhoea*, *Chlamydia trachomatis*, *Candida albicans* and *Trichomonas vaginalis* infection have been reported to be more common in women with HIV[16], at least one of which was present in every seropositive patient. Syphilis is more common

in HIV-positive women in South African studies. Concurrent infection with syphilis was shown in 33% of HIV-positive pregnant women in the hospital: three times higher than the rate in HIV seronegative women[16]. In Kwa-zulu over 50% of HIV positive pregnant women screened were also positive for Syphilis. Syphilis can be attributed to many of the still births the hospital experiences. Increased stillbirth rates have been reported and the risk appears to be lower in asymptomatic women, although stillbirth rates more than double those in HIV seronegative mothers in South Africa[10].

Bacterial pneumonia, UTI's and other infections are more common during pregnancy in HIV seropositive women[11]. In addition to these infections and parasitic infestations, any of the HIV-related opportunistic infections can be found during pregnancy. Tuberculosis is the commonest opportunistic infection associated with HIV in the developing world, and perhaps the biggest killer in pregnant seropositive women. *Herpes zoster* is common in young HIV-positive women, although uncommon in this age group in the absence of HIV infection[17]. Kaposi's sarcoma has been reported during pregnancy in HIV-positive women[18]. A pregnant lady presented to clinic with Kaposi's sarcoma so advanced that maggots had infected the primary site. Like many women in the hospital, she had been given ARVs to slow the progression of HIV to AIDS, but local government advisors had told her they offered no protection. "Fresh fruit and washing was of far more value". One of many tragic cases of misinformation provided to communities, which is a huge discussion in itself. The younger generations are of the belief condoms provide no protection, although they are not in short supply. Political issues haunt medicine in rural South Africa; something doctors battle to overcome.

Preterm labour may be more common in HIV-positive women, with double the expected rates in unaffected women[19]. Preterm rupture of membranes may also be increased in HIV-positive women and *abruptio placentae* has been described as more common in HIV-positive women, a regular reason for emergency c-section in Umfoluzi[20].

Infectious complications are also more common during the postpartum period in HIV-positive women [20 21 22]. Caesarean section is particularly associated with higher infectious morbidity in some reports, especially in women with low CD4+ counts, women often requiring c-section due to the high rate of complications in pregnancy already mentioned[23]. On-the-other-hand, comprehensive analysis found that pregnant women infected with HIV

can reduce the risk of transmitting the virus to their infants by about 50 percent if they deliver by elective cesarean section--before they have gone into labour and before their membranes have ruptured. Reported rates of transmission of HIV from mother to child range from around 15%-25% in Europe and the USA to 25% to 40% in some African and Asian studies[24]. Pressure to provide routine antiretroviral [ARV] therapy in many developed countries contribute to lower transmission rates[25] [26]. However, rates still remain high in Kwazulu due to poor ARV compliance. In a European study 10.4 percent of the mothers who delivered by elective c-section transmitted the virus to their infants, as compared to 19 percent of the women who delivered by the other modes of delivery [27]. As well as low rates of ARV use and access to hospitals offering elective c-section, many maternal behavioural and environmental factors contribute to mother-to-child transmission, such as diet and housing[17].

Community-based based barriers to health service access

The management of HIV positive women during pregnancy is multifaceted, combining medical and obstetrical management with counselling and social support. The woman's social and psychological concerns may be as important as her need for medical care. The multidisciplinary team approach involves health workers, counsellors and support groups. All these were available to the women of Lower Umfolozi, however, numerous social barriers often stood in the way of access. The majority of these were due to the large distances that need to be covered from rural communities to hospital, numerous family members being consulted before a decision to attend hospital is made and the widespread use of traditional healers.

Lower Umfolozi Women's Hospital is a major centre for antenatall care in Kwazulu Natal, servicing over 100 square kilometres of the province. Whilst transport exists from most clinics in rural areas (figure 1), it cannot be guaranteed on a daily basis and long walks of up to 30km have been reported by patients trying to assess transport. A lady, SB, came to hospital reporting bleeding for over a day. She had waited for her husband to return home and wanted a consultation with many family elders before attempting to find transport in the evening. SB wanted her husband's and families consent before making the choice to go for help. Once granted she walked 20km from her small village, 32 weeks into her pregnancy. Not finding transport she slept by the roadside and found a minibus (figure 2) to take her the

100kms to Empangeni. By the time she had arrived, SB had sadly miscarried. This is a tragic but unfortunately common story amongst rural ladies attempting to reach hospital.

Figure 1: Maternity Clinic on the SA Mozambique border

Figure 2: How will transport pregnant women are often forced to use if the money can be raised

There appeared to be a range of transport problems at different times during the pregnancy. Another lady had been diagnosed with TB during pregnancy had had a premature delivery at 6 months following a long journey to Empangeni. Following a three day stay in hospital at a time when the blood blank was empty, she passed. Many women will not make it to hospital as money for transport to the local clinic or Empangeni will be difficult to produce.

As well as incorrect information being preached by local authorities, the use of non-medical healers is extremely common. Illness was believed not to be related to pregnancy and this may have led to a delay. There are numerous gruesome cases of traditional medicine causing harm and death. A woman presented as an emergency following a procedure in a nearby

village to "cut out the evil spirits that were causing her to bleed". She was in haemodynamic shock and was too sick to survive the emergency operation.

Another 19 year old women being treated effectively in hospital would suddenly self-discharge as family members decided that the condition should be treated in a traditional way. They believed the illness to be Tindzhaka (a type of bad luck) following an incorrect cleaning ritual, after she had become a widow to a man who was 35 years her senior. She was taken to be 'cleansed'.

Figure 3: Lower Umfolozi is the primary maternity hospital in Kwazulu, particularly for women suffering maternal complications. It even services many women from neighbouring Swaziland and Mozambique

Susceptibility of women to HIV infection

Women in the developing world are at higher risk of HIV infection than their male counterparts for a number of reasons, biological and sociological.

Biologically, females are at two to three greater risk of HIV transmission from males, than that from female to male[28]. The Langerhans' cells of the cervix may provide a portal of entry for HIV and it has been suggested that some HIV serotypes may have higher affinity for these, and therefore to be more efficient in heterosexual transmission[29]. Vulval and vaginal inflammation or

ulceration, secondary to sexually transmitted infection may facilitate entry of the virus as previously mentioned[17].

Essentially, women are at more risk because of the conditions in cultures and communities that remove their control over their own bodies. Women are often blamed incorrectly as the source of HIV infection and carry the dual burden of infection and of caring for infected family members. This disastrous epidemic has enormous implications for older people, especially women, a generation traditional reliant on their child.., have begun to outlive their child, as the vast majority of HIV suffers are below 50. Many older people face the consequences of AIDS-related illness and deaths among their own children and other relatives and of the wider social and economic changes wrought by the epidemic. The rising burden of morbidity and mortality among younger adults is likely to increase the importance of the practical contributions made by older people to their households. Whole families often rely on the contribution of the monthly old age pension income. Pensioners play a key role in caring for grandchildren and other children whose parents are absent[30].

HIV Gender inequalities, poverty, less access to education and lack of employment opportunities force many women into commercial sex work in order to survive, and this group of women are at very high risk of HIV infection[31]. Conversely, many more women are monogamous, but are at high risk due to the sexual behaviour of their male partner. Traditional practices and customs such as "dry sex" practices, vaginal douching with non antiseptic compounds, female circumcision and "widow cleansing" may all have an effect on increasing women's risk of HIV infection[32 33 34]. Despite their high risk of infection, cultural practices and pressures often prevent women from taking the necessary precautions to guard against infection. Use of male condoms is low in South Africa, particularly Kwazulu. The desire and the societal pressure to reproduce make it difficult for women to practice protected sex. Young women are at highest risk of infections, many of them at the beginning of their reproductive lives. Even after a diagnosis of HIV infection, most women will not change their reproductive choices[35]. There are no methods available for women to use to prevent HIV transmission, independent of the male partner, with the possible exception of the female condom[36]. Female barrier methods remain expensive or unavailable in many areas where male resistance to condom use is common, although social marketing of the female condom in some South African has demonstrated that there is considerable demand.

Ultimately, education of rural communities in the prophylaxis against HIV infection and the progression to AIDs is vital in Kwazulu Natal. Social practises and political misinformation are largely responsible for the worsening epidemic in rural areas, where such intervention could reduce infection rates. Issues such as transport and availability of care in rural regions do remain an issue. South Africa's maternal death rates remain disproportionately high for a country at its current level of development.

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