

CME: Tuberculosis and HIV

On a global scale, South Africa (SA) is disproportionately affected by the epidemics of both tuberculosis (TB) and human immunodeficiency virus 1 (HIV-1), and the intersection of these two diseases has resulted in an unprecedented disease burden in our country. It is estimated that 12.2% of South Africans are HIV-infected – a total of 6.4 million people, the largest number of any country in the world. SA has the second highest annual incidence of TB after Swaziland. Approximately 1% of the population develop active TB disease each year (an estimated 530 000 people in 2012). While SA comprises 0.7% of the world's population, it is estimated that of all cases of HIV-associated TB that occur worldwide annually, 30% occur here.

Important gains have been made in the public health response to HIV in the past decade, but despite these TB and HIV, often as co-infection, are still the most important causes of morbidity and mortality among adult South Africans. HIV-related complications remain the commonest cause for admission to hospital medical wards. At Khayelitsha Hospital in Cape Town, over 50% of patients admitted to the medical wards are HIV-infected, and many of these patients also have active TB. While we have the largest antiretroviral therapy (ART) programme in the world, we have not seen the same dramatic impact on the prevention of HIV opportunistic infections as occurred in industrialised countries when ART was first introduced. This important issue of *CME*, guest edited by Graeme Meintjes, addresses the management challenges in tuberculosis and HIV.

Recommendations for amniocentesis in HIV-positive women

All women should be able to opt for prenatal screening and diagnosis, and for an amniocentesis if required, regardless of their HIV status. Constantatos *et al.*^[1] provide recommendations for amniocentesis in HIV-positive women and advise that it is safe to perform this procedure in women on highly active antiretroviral therapy (HAART) with suppressed viral loads (preferably undetectable) and when transplacental passage of the needle is avoided.

If an HIV-positive patient accepts amniocentesis, HAART should be initiated and amniocentesis delayed until the viral load is undetectable. If there is not enough time to attain an undetectable viral load, however, it is reasonable for the patient to be on HAART for as long as possible before amniocentesis. The nature of the fetal abnormality may influence the decision to proceed even when the viral load is not suppressed – if the abnormality is severe and will be associated with significant morbidity, exposing the fetus to a very small risk of HIV transmission at amniocentesis is outweighed by the benefit of a prenatal diagnosis.

It is worth noting that there is a non-invasive prenatal screening test (the Harmony test) that analyses cell-free DNA in the maternal blood and will identify 99% of fetuses with trisomy 21, 97% of fetuses with trisomy 18, and 92% of fetuses with trisomy 13. Although not available in the state sector or to many private patients because of the cost, this highly effective screening test does not carry the risk of miscarriage and HIV transmission.

Premedication for newborns before elective intubation

Newborns should be receiving premedication before elective intubation,^[2] as has become the standard of care in over 90% of neonatal units in the UK. Premedication for elective and semi-urgent intubation of infants significantly improves intubation conditions, decreases the time and number of attempts needed to complete the intubation procedure, and minimises the potential for

intubation-related airway trauma that arises from the noxious stimuli of intubation, potentially results in raised intracranial pressure, hypoxaemia and cardiovascular instability, and may have long-term deleterious effects.

Retinoblastoma – early detection improves outcome

Kruger *et al.*^[3] report the generally poor outcome in children with retinoblastoma at a single institution in SA, reflecting its late diagnosis. Overall survival was only 33 - 43%, compared with the 95% achievable in developed countries. The simple reason is lack of effective screening, and this unacceptably high mortality rate can be significantly reduced by the early detection of retinoblastoma that may be achieved by ensuring that the 'red reflex' is tested for on all newborns and toddlers. The 'red reflex' or 'retinal reflex' refers to the reddish-orange reflection of light from normal retina, and it is observed with a direct ophthalmoscope held close to the examiner's eye while observing the patient's eyes from a distance of approximately 30 cm. Normally the reflections of the two eyes are equivalent in colour, intensity and clarity. Retinoblastoma is suggested by a whitening of the reflex, white spots in the reflex, an absent red reflex, or asymmetry of the two red reflexes when viewed from various angles.

As the editorial by Meyer^[4] points out, while retinoblastoma is a rare and life-threatening condition, when it is managed optimally by a competent health team there is excellent prognosis for survival and good visual outcomes. The 'red reflex' test should be mandatory at discharge from all neonatal services and at all subsequent routine health supervision visits. Parents are similarly able to detect a problem by noticing an abnormality in the red reflex in photographs taken when the 'red eye reduction' function happens to be switched off on their camera. It would not be too idealistic to suggest that all physicians attending to neonates and toddlers use this humble camera technique and digitally save the red reflex images to the patient's file at each visit. In the meantime, diabetic screening programmes using portable digital imaging systems are already established in many areas in the world, including the Cape Town metropole. The development of portable digital retinal imaging systems is ongoing, and it will be feasible to screen the retinas of all neonates in the future using this technology.

Unwanted pregnancies in Gauteng and Mpumalanga

Examining mortality data on dumped aborted fetuses and babies, Jacobs *et al.*^[5] report that despite progressive abortion laws, many SA women of all ages still appear to be resorting to unsafe terminations outside legal, designated facilities. There is an increase in the illegal dumping of fetuses and abandoned babies, suggesting an increase in unsafe termination practices as well as concealed births. For the southern African region (including Botswana, Lesotho, Namibia, SA and Swaziland, of which SA forms the major component), 120 000 unsafe abortions were estimated to have occurred in 2008.

Poor or restricted access to contraceptive services and the fact that women experience considerable difficulties in negotiating safe sex practices account for unintended pregnancies. Young girls who partner with older men are especially vulnerable to sexual exploitation because of their financial dependency.

SA decriminalised abortion in 1996 by introducing the Choice on Termination of Pregnancy Act. SA law also protects the individual choice of minors, who are encouraged to consult with their parents, guardians, family and friends but may terminate a pregnancy without parental consent. An undisclosed number of women affected by

unwanted pregnancies are nevertheless unable to rely on the existing services available. This reflects a lack of information and perceived poor quality of services, as well as women being misinformed by hospital staff regarding services and legislation. Furthermore, women who are able to access these services are stigmatised and report experiencing judgemental attitudes from service providers. Accessibility to services is further limited because half of the designated facilities that are registered providers of termination services are in reality not providing this service, reflecting an unwillingness of healthcare workers to be trained to undertake termination of pregnancy.

Risks associated with pregnancy in young HIV-infected women

Fatti *et al.*^[6] report that adolescent and young pregnant women are at increased risk of mother-to-child transmission of HIV and poor maternal and infant health outcomes. An increasing proportion of pregnant HIV-positive women in the Nelson Mandela Bay Metropolitan district, Eastern Cape Province, SA, are young, and they have poorer maternal and infant outcomes than older women. These young women are less aware of their HIV status when booking, and had slower antenatal ART uptake, reduced uptake of early infant diagnosis, and increased mother-to-child transmission (MTCT) of HIV (despite having less advanced immunosuppression). Adolescents had increased risks of maternal mortality, first presentation in labour and stillbirth, all findings that have important public health relevance to SA.

There is a critical need for sexual and reproductive health rights to be rolled out at clinics and schools, to include increased access to HIV counselling and testing, barrier methods to prevent transmission, and family planning. Interventions targeting young women are increasingly needed to reduce pregnancy, HIV infection and MTCT and improve maternal and infant outcomes if SA is to attain its Millennium Development Goals.

Venous thromboembolism (VTE) risk assessment

The Use of VTE prophylaxis in relation to patient risk profiling (TUNE-IN) Wave 2 study^[7] was conducted to evaluate common practice in the assessment of VTE risk in the inpatient healthcare setting in Gauteng, SA. Public sector patients were more commonly clinically assessed as being at risk for VTE than those in the private sector (87.0% v. 47.3%), but a greater percentage of patients across all risk levels received prophylaxis in the private than in the public sector (96.8% v. 79.7%), possibly as a result of availability of chemoprophylaxis drug preparations, costs and VTE prophylaxis protocols.

There is a need for improvement in VTE risk assessment and prophylaxis in both the public and private sectors. The implementation of a formalised VTE risk assessment tool – as outlined in the article – will ensure standardisation of VTE risk assessment and administration of adequate prophylaxis.

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