

Implementation of cervical cancer prevention services for HIV-infected women in Zambia: measuring program effectiveness

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Groesbeck and his team report on the outcomes of the new public sector cervical cancer screening programme, which was launched in Zambia in 2006. The programme is the product of a partnership between the Zambian Ministry of Health, the National Centre for Infectious Disease Research, Lusaka University Teaching Hospital, Zambia and the University of Alabama, USA.

The cervical screening programme is open to all women but this article described the outcomes in HIV-positive women from the 'screen and treat' service. This is an area of current interest, as not only is cervical cancer a significant cause of morbidity and mortality in low-income countries, it is also known that women worldwide who are HIV-positive have the highest risk of being affected by both cervical intraepithelial neoplasia (CIN) and invasive cervical cancer (ICC).¹ HIV prevalence continues to grow, with over 40 million people affected worldwide. If programmes for screening and treating can be shown to be effective, they could make significant improvements in the lives of thousands of women.

The issue the article aimed to address was measuring the effectiveness of the new programme by looking at outcomes obtained and using a conditional probability model, based on existing evidence, to estimate the number of cervical cancer deaths prevented. It is an observational study, but has the merit of including large numbers of patients. The researchers analysed outcomes for 6572 HIV-infected Zambian women who were seen between 2006 and 2008. The authors described the demographics of the whole population screened, which showed that they were generally of young age (mean 33 years), of low educational standard and 97% had never had a cervical smear. Zambia is known to have high rates of HIV infection, and in the population attending screening 31% were known to be HIV-seropositive (34% knew that they were seronegative but 35% did not know their status and were not included in the analysis).

The researchers described the methods being used by nurse colposcopists for

visual inspection with acetic acid (VIA). This is a method of assessment that has been described elsewhere as being helpful for assessment of cervical abnormalities.² However, there are other methods available such as HPV DNA testing, which may be a better screening test (more specificity for lesions that may progress).³ This may have different resource implications for the programme, but should perhaps have been considered in the discussion. The Zambian programme offered some women same-visit cryotherapy for visible lesions; other women were asked to return at a later date for treatment and others were referred to a local university hospital. Unfortunately the criteria for treatment or referral were not clearly stated in the methods section of the paper, and a large number of women failed to attend appointments when delayed or referred (459/2061 in same-centre group and 367/1462 who were referred). It is not known whether there were any differences in the features of disease in treated or untreated women, and this leaves a large deficit in the results.

Furthermore, many of the women who were treated had cryotherapy. By definition this is a destructive process and does not allow any samples to be pathologically examined. Thus we do not have real proof of disease in these cases other than the visual diagnosis. From patients who attended hospital appointments and did have biopsies, however, pathology results found abnormalities in almost 80% of cases (CIN I, 30%; CIN II/III, 33%; ICC, 16%). If we knew that this group were not significantly different from those who had immediate cryotherapy, we could have more confidence that there was a large disease burden being treated. There are a significant number of results (380/1095) missing from the analysis as they were 'unavailable', and again their presence would have increased confidence in the results.

There was follow-up described in 260 women treated by cryotherapy who attended for 6-month review, of whom approximately one-third were positive again for lesions that on biopsy had high-grade CIN or worse in one-third of cases. This is in keeping with research that tells us that women who are HIV-seropositive are likely to respond poorly to treatment and are at high risk of persistent disease, possibly due to impaired clearance of HPV infection. Unfortunately the majority of women (79%) failed to attend for follow-up after treatment. This may introduce bias into the results, as possibly those who were symptomatic were more likely to attend again.

The high rate of abnormalities found in the population indicates that a screening programme is vital for prevention and diagnosis of development of cervical cancer in women such as these. The finding of persistent abnormalities does imply that this would have to be a long-term programme, with efforts to encourage regular attendance and compliance with follow-up to gain the best effect. In the UK, women with HIV are advised to have annual cervical screening,⁴ and it seems that this is even more relevant for women living in low-income countries who are less likely to have access to regular medical review or antiretroviral medications, which could slow the deterioration of their immune systems.

Overall, this study is of interest as the issue of screening for and treating cervical cancer is topical and important. This study describes a national programme in a resource-poor setting with large numbers of women and a greater number of HIV-seropositive patients than would be seen in any UK region. It will add to the evidence that screening is necessary in all settings, especially for women with HIV, and it does describe a low-cost way to run the programme. The main drawback of the study is that a lack of clarity in the methods and results impairs confidence in the overall estimation of effectiveness.

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