

## Correspondence

### **Are we missing opportunities to prevent cervical cancer in HIV-infected women in India?**

Sir,

Primary and secondary prevention of cervical cancer became a reality within 40 years of the initial discovery of the link between human papillomaviruses (HPVs) and cervical cancer<sup>1</sup>. However, it still remains the fourth most common cancer among women with an estimated 528,000 cases globally, of which 85 per cent occur in developing countries<sup>2</sup>. It is the second most common cancer among women in India with 123,000 new cases and 67,000 deaths reported in 2012<sup>2</sup>. Cervical cancer incidence in India is 1.6 times more than what was seen in England about 40 years ago<sup>3</sup>.

Screening for cervical cancer using visual inspection of the cervix with 3-5 per cent acetic acid (VIA), and treatment using cryotherapy or loop electrosurgical excision procedure (LEEP), in a single or two-visit approach have been shown to be effective in reducing cervical cancer incidence and mortality in two large randomized controlled trials in Dindigul district<sup>4</sup> and in Mumbai<sup>5</sup>. The World Health Organization (WHO) has published comprehensive guidelines for cervical cancer prevention and control for low- and middle-income countries and has recommended 'screen and treat' strategy in a single visit approach using VIA and treatment using cryotherapy<sup>6</sup>.

Population-based cervical cytology screening has been found to result in a substantial reduction in cervical cancer burden in developed countries, however, inefficient cytology screening programmes may contribute to the high risk observed in various regions of the world such as south and southeast Asia, sub-Saharan Africa, Central and South America, Oceania and the Caribbean<sup>7,8</sup>. Cytology based screening programmes for cervical cancer have achieved limited success in reducing disease burden due to several

factors which include suboptimal performance of cytology, lack of quality control and inefficiency of systems for following up and treating screen positive women<sup>9-11</sup>.

VIA is simple, low cost, can be performed by trained health care workers<sup>12</sup>, and provides an opportunity to treat screen-positive women during the same visit thus reducing the challenges of loss to follow up. Although it is provider-dependent and subjective, yet its sensitivity is better compared to cytology<sup>12</sup>. VIA has performed better than cytology in Indian studies among HIV-infected women<sup>13,14</sup>.

A majority of the health care providers in public settings continue to use cytology screening in spite of the evidence generated from large studies conducted in India and elsewhere about its limitations in resource-limited setting. It is disturbing that this strategy remains unknown to the majority of the health care providers even in the public sector in India or those who have heard of it show little confidence over its utility.

Considering the burden of cervical cancer, the translation of research findings into programmes should have been a national priority. The screening coverage is as low as 4 to 6 per cent in India<sup>15</sup>. Of the 28 States and seven Union Territories, only two States, namely, Tamil Nadu and Sikkim, have included cervical cancer screening in their public health programmes<sup>16,17</sup>.

There is a close interplay between HPV and human immunodeficiency virus (HIV) infection due to several overlapping biological and socio-economic factors. The regions in the world that have a high burden of HIV infection are also the regions with a high burden of cervical cancer and India is no exception. Although HPV infection remains transient in the majority of the immune-competent individuals and cervical cancer is a

rare outcome of the long-term HPV infection, the disease is more common and more severe in HIV-infected individuals<sup>18</sup>. Progressive loss of CD4+ T cells in HIV-infected individuals results in increased prevalence of HPV infection and HPV-associated malignancies<sup>19</sup>. The overall HPV prevalence among HIV-infected women across different regions in the world was 36 per cent<sup>20</sup> in contrast with 12 per cent among women in the general population<sup>21</sup>. HIV-infected women are at 2- to 22-fold increased risk of developing cervical cancer as compared to HIV-uninfected women<sup>22</sup>. Therefore, the HIV-infected women are the group that needs cervical cancer screening and treatment of cervical intra-epithelial neoplasia (CIN) the most.

India accounts for the third largest burden of HIV-infected individuals worldwide. At the end of December 2012, 1.74 million people were ever registered at 380 anti-retroviral treatment (ART) centres of National AIDS Control Organization (NACO) throughout the country. Of these 1.74 million people, 604,987 were clinically eligible patients (including 34,367 children) who were receiving free ART in government health facilities<sup>23</sup>. The National AIDS Control programme, Phase IV (NACP-IV) aims to strengthen the response to this epidemic in India through a well-defined integration process over the five years period (2012-2017). The main objectives are to reduce new infections and provide comprehensive care and support to all people living with HIV (PLHIV) and treatment facilities for all those who require it<sup>23</sup>. Though ART has been effective in improving survival, preventing certain opportunistic infections and quality of life of HIV-infected individuals, tangible benefits have not been seen in reducing HPV-related diseases<sup>19</sup>.

Prevalence of high-risk HPV infection in HIV-infected women in India varies from 30 to 40 per cent<sup>13,24-27</sup>. High rates of CIN 2+ lesions, considered as precursors of cervical cancer, have already been reported from Indian studies among HIV-infected women and these vary from 5 to 16 per cent<sup>27,28</sup>. Of the 1.74 million HIV-infected individuals registered at NACO ART centres, about 0.816 million are women and considering the CIN detection rates, currently at the least 40,800 women are likely to have CIN 2/3 lesions. Cervical cancer may be prevented among a substantial number of these women if detected and treated early. Integration of cervical cancer screening programme at NACO ART centres will strengthen comprehensive care and treatment programme for HIV-infected women. 'Screen and treat' strategy offers

an opportunity to provide immediate treatment for screen-positive women. Though it has an element of overtreatment, this overtreatment is likely to be more beneficial in HIV-infected women than women in the general population. This is particularly important if we consider six per cent cumulative loss to follow-up of registered cases as per NACO's estimation<sup>23</sup>.

At least 25 countries from South America, Africa and Asia have included VIA screening in their national programmes, of which eight countries are from African region<sup>29</sup>. In addition, pilot programmes using VIA screening are ongoing in 22 African countries<sup>29</sup> and these regions are also affected by the HIV epidemic. The cervical cancer prevention programme in Zambia is integrated with the HIV/AIDS care and treatment programme and has provided screening services to over 58,000 women in five years<sup>30</sup>. Botswana has also implemented nationwide VIA screening through the HIV care clinics<sup>31</sup>. Some countries in Africa have initiated an innovative public-private partnership programme to combat cancers among women in Africa<sup>32</sup>.

An opportunity of cervical cancer prevention in HIV-infected women in India should not be missed. Inclusion and implementation of cervical cancer prevention programme using single-visit 'screen and treat' strategy at NACO ART centres is possible considering NACO's experience of scaling up ART as well as prevention of mother-to-child transmission (PMTCT) programme for HIV-infected women. This will provide an opportunity of integration of this cervical cancer prevention programme with National Health Mission and National Cancer Control Programme. Investment at this stage for cervical cancer screening and treatment can be further utilized for preventing cervical cancer among women in the general population in India through a comprehensive cervical cancer control programme.

**Smita Joshi<sup>1,2,\*</sup>, Vinay Kulkarni<sup>2</sup>,  
Raman Gangakhedkar<sup>3</sup> &  
Rengaswamy Sankaranarayanan<sup>4</sup>**

<sup>1</sup>Hirabai Cowasji Jehangir Medical Research Institute, Pune,

<sup>2</sup>Prayas, Pune, <sup>3</sup>National AIDS Research Institute (ICMR), Pune, India &

<sup>4</sup>International Agency for Research on Cancer, Lyon, France

\*For correspondence:  
smitanjoshi@gmail.com

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