



Short Report:

Do All Cases of Diagnosed Carcinoma Cervix Need HIV Screening?

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Abstract: Background: This observational study was aimed to determine the frequency of existence of sero-positivity for human immunodeficiency virus (HIV) infection among women of age between 25 to 75 years with invasive cervical carcinoma and to decide whether HIV testing should be included as part of the initial routine work-up of cervical cancer patients. **Methods:** Histologically proven 120 cases of invasive carcinoma cervix, who came for treatment between 2009-2013, in the department of radiotherapy, after counselling gave consent were investigated for HIV by immunochromatography based rapid test. **Results:** Out of 120 patients investigated, reports revealed that only two patients (1.67%) were HIV seropositive. Both of these patients were already HIV seropositive and on gynaecological screening were found to have malignancy of cervix. No patient of diagnosed carcinoma cervix was found seropositive for HIV. Most patients (106/120) were above 40 years of age, from rural background (92/120) and housewives (80/120). Only 15% (18/120) were smokers. 95.8% (115/120) were of stage II and III. None presented with metastasis. Most common pathology was moderately differentiated carcinoma, in 76 patients (63.3%). **Conclusion:** Screening for HIV, as part of the initial work up for cervical cancer is not necessary in countries with limited resources and low HIV prevalence.

Key Words: Carcinoma; Cervix; HIV; Coexistence; Screening; Immune compromised

Introduction:

HIV infection is increasing worldwide at an alarming rate. Also, cervical malignancy ranks number one among malignancy in females in rural areas of India. The HIV prevalence among the High Risk Groups, i.e., Female Sex Workers, Injecting Drug Users, Men who have Sex with Men

and Transgenders is about 20 times higher than the general population. Most infections occur through heterosexual transmission.¹

Though India is a country with low HIV prevalence, it has the third largest number of people living with HIV/AIDS. It is estimated that total number of people living with HIV/AIDS in India is 23.9 lakh (19.3-30.4 lakh) in 2009. Of all HIV infections, 39 percent (9.3 lakhs) are among women. Children under 15 years account for 3.5 percent of all infections, while 83 percent are the in age group 15-49 years.¹

Analysis of epidemic projections revealed that the number of new annual HIV infections has declined by more than 50 percent during the last decade. It is estimated that India had approximately 1.2 lakh new HIV infections in 2009, as against 2.7 lakh in 2000. The estimated adult HIV prevalence in India was 0.32 percent (0.26%-0.41%) in 2008 and 0.31 percent (0.25%-0.39%) in 2009. This is one of the most important evidence on the impact of the various interventions under NACP and scaled-up prevention strategies.¹

People infected with HIV have a substantially higher risk of some types of cancer compared with uninfected people of the same age. Three of these cancers are known as acquired immunodeficiency syndrome AIDS-defining cancers or AIDS-defining malignancies: Kaposi sarcoma, non-Hodgkin lymphoma, and cervical cancer. A diagnosis of any one of these cancers marks the point at which HIV infection has progressed to AIDS. Women infected with HIV are, at least 5 times more likely to be diagnosed with cervical cancer.²

Multiple studies from across the globe³⁻⁵ as well as from India⁶ have clearly demonstrated that HIV-infected women are two to five times as likely as HIV-uninfected women to

manifest with cervical intraepithelial neoplasia and cervical cancer.

This study, conducted at a tertiary health institute in India, intended to project coexistence of HIV infection and carcinoma cervix and found the same in 1.67% (2/120) patients. Although, the study is small, it may help in making recommendation regarding routine HIV screening in cervical cancer patients; especially in limited resources set ups.

Material and Methods:

Histologically proven 120 cases of invasive carcinoma cervix, which came for treatment in department of radiotherapy, who, after counselling gave consent were investigated for HIV by immunochromatography based Rapid test in Microbiology department of PGIMS, Rohtak (India). Characteristics of carcinoma cervix patients who were investigated for HIV by immunochromatography based rapid test are shown in Table 1.

Table 1: Patient characteristics		
Characteristics	Number	%
Age		
20-29 years	02	1.67
30-39 years	12	10
40-49 years	29	24.17
50-59 years	34	28.33
60 years & above	43	35.83
Social background		
Rural	92	76.67
Urban	28	23.33
Smoking habit		
Non Smoker	102	85
Smoker	18	15
Occupation		
Housewife	80	66.67
Laborer	34	28.33
Service	06	5
Treatment opted		
Radiotherapy	101	84.17
Surgery	19	15.83
FIGO stage		
Stage I	02	1.67
Stage II	58	48.33
Stage III	57	47.5
Stage IV	03	2.5
Histopathology		
Adenocarcinoma	02	1.67
Squamous cell carcinoma	118	98.33
PDSCC	14	11.67
MDSCC	76	63.33
WDSCC	09	7.5
SCC (NS)	19	15.83

Results:

Out of 120 patients investigated, reports revealed that only two patients (1.67%) were HIV seropositive. Both of these patients were already HIV seropositive and on gynaecological examination were found to have malignancy of cervix. No patient of diagnosed carcinoma of cervix was found seropositive for HIV. Most patients (106/120) were above 40 years of age, 76.6% were from rural background (92/120), and 76.67% were housewives (80/120). Only 15% (18/120) were smokers. Most, 95.8% (115/120) were of stage II and III. None presented with metastasis. Most common

histopathology was moderately differentiated squamous cell carcinoma, in 76 patients (63.3%)(Table 1).

Discussion:

Invasive cervical cancer is an AIDS-defining condition, and because many women in developing countries present only in the late stages of the disease in absence of organized screening programs, it is often the very first sign of AIDS in these women. Thus, a potential role of offering HIV testing exists for selected high-risk groups of women presenting with cervical neoplastic conditions, although this approach has yet to be validated rigorously in other resource-limited settings with similar general population prevalence of HIV. However, with increasing population HIV prevalence in settings like India, this approach merits investigation.⁷

Wabinga and colleagues in an analysis of population based data linked to the cancer registry in Uganda showed that HIV did not influence survival of patients with invasive cervical cancer.⁸

A case-control study in the Ivory Coast found that cervix cancer was associated with HIV infection for women under the age of 40.⁹

In Nairobi, Kenya, a case-control study indicated that cases of patients younger than 35 years with cervix cancer were more likely to be HIV positive than controls of similar age (odds ratio 2.6, p=0.043). HIV-positive women were more likely to have poorly differentiated tumors than HIV-negative women (odds ratio 3.1, p=0.038).¹⁰ However, the same group of researchers found that the two to three fold increase, in national prevalence of HIV in Kenya from 1989 to 1998 did not have a proportional effect on the incidence of cervix cancer.¹¹

In a study by Nel CPG et al, in 1475 treated patients, from 1997 to 2000, HIV status was known for 1393 patients and 13.1% were HIV positive. The patients were predominantly African (92.8%) in the age groups 40 to 69 years (74.7%) with stage 3 (53.6%) and stage 4 (21.2%) disease. For the age group 30 to 34 years, the prevalence is significantly higher in the cervix cancer patients than the antenatal patients, and close to significantly higher for the age group 34 to 39. They suggested that all women presenting with cervix cancer be tested to ascertain their HIV status, so that the therapy can be adjusted to improve their prognosis. HIV positive women should undergo regular screening for cervical carcinoma.¹²

Another study by Kietpeerakool C was undertaken to evaluate the prevalence of human immunodeficiency virus (HIV) infection and the feasibility of routine HIV screening in women undergoing various treatment of cervical neoplasia at Chiang Mai University Hospital between October 2004 and October 2006. Four hundred and ninety five (495) women were recruited for HIV screening. In this study, thirty-seven (7.47%) women had a previous diagnosis of HIV infection with a mean duration 4.16 years (range: 1-15 years). The remaining 458 women consented to have an HIV test. Six women (1.31%) were newly identified as HIV seropositive, giving an overall prevalence of 8.69%. In conclusion, the prevalence of HIV infection in this study was considerably high and routine HIV screening is feasible because of the high acceptance rate.¹³

Kahesa C et al in their study found that HIV-1 prevalence was much higher among the cases (21.0%) than among the controls (11.6%). In logistic regression, HIV-1 was associated with cancer of the cervix (OR = 2.9, 95% CI = 1.4-5.9). Among the cases the mean age was lower for HIV-1 infected (44.3 years) than HIV-1 uninfected women (54 years, p = 0.0001) and concluded that resource-constrained countries with a high burden of HIV-1 and cervical cancer should adopt a high-risk approach that targets HIV-1 positive women for screening of cervical cancer initially by utilizing HIV/AIDS resources.¹⁴

In a prospective case controlled study by Chan YM and Ng TY in 225 consecutive patients, with newly diagnosed cervical cancer and 223 age-matched women with benign gynecological condition, serum samples were tested for HIV I and HIV II antibodies at diagnosis and three months later. All the HIV tests were negative. The HIV prevalence rate was estimated to be 0.0-1.6% for both groups. The study concluded that HIV screening should not be a part of the initial work up for cervical cancer in a population with low background prevalence.¹⁵

Conclusion:

This study has looked into the prevalence of HIV in histopathologically confirmed cervical cancer patients in Haryana and the need of HIV screening in these patients. The results do not favour the association between prevalence of HIV infection in cervical cancer patients.

Our study may have number of potential limitations that may have distorted our estimates. The cases were selected from the only government cancer treatment centre in Haryana. However, a very small proportion of all cases of cervical cancer are seen in hospitals. The cases seen are likely to be those who have access to health services (geographical, economic), women with advanced cancer.

Our study has demonstrated that HIV-1 infection is not associated with invasive cancer of the cervix. Resource-constrained countries with a high burden of HIV and cervical cancer should adopt a high-risk approach that targets HIV-1 positive women for screening of cervical cancer initially by utilizing HIV/AIDS resources. But countries with less association of cervical cancer patients with HIV and limited resources may not require screening for HIV and should not be a part of the initial work up for cervical cancer in a population with low background prevalence.

References

1. Annual report 2010-11. Department of AIDS control, Ministry of Health and Family Welfare, Government of India. Available from <http://www.naco.gov.in/upload/REPORTS/NACO%20Annual%20Report%202010-11.pdf>. Last accessed: 1 July, 2013
2. Grulich AE, van Leeuwen MT, Falster MO, Vajdic CM. Incidence of cancers in people with HIV/AIDS compared with immunosuppressed transplant recipients: a meta-analysis. *Lancet* 2007; 370(9581):59-67.
3. Massad LS, Riester KA, Anastos KM, et al. Prevalence and predictors of squamous cell abnormalities in Papanicolaou smears from women infected with HIV-1. Women's Interagency HIV Study Group. *J Acquir Immune Defic Syndr*. 1999;21:33-41.
4. Fruchter RG, Maiman M, Sedlis A, Bartley L, Camilien L, Arrastia CD. Multiple recurrences of cervical intraepithelial neoplasia in women with the human immunodeficiency virus. *Obstet Gynecol*. 1996;87:338-344.
5. Frisch M, Biggar RJ, Goedert JJ. Human papilloma virus-associated cancers in patients with human immunodeficiency virus infection and acquired immunodeficiency syndrome. *J Natl Cancer Inst*. 2000;92:1500-1510.
6. Chandorkar A, Krishnan G et al. Cervical intraepithelial changes and HIV infection in women attending sexually transmitted disease clinics in Pune, India. *Indian J Med Res*. 2001;113:161-169.
7. Sahasrabudhe V, Makhija S. Double jeopardy: HIV and cancer in Indian women. *Int J Gynecol Cancer*. 2005 Jan-Feb;15(1):1-3.
8. Wabinga H, Ramanakumar AV, Banura C, Luwaga A, Namboozee S, Parkin DM. Survival of cervix cancer patients in Kampala, Uganda: 1995-1997. *Br J Cancer*. 2003;89(1):65-69.
9. Adjorlolo-Johnson G, Unger ER, Boni-Ouattara E, Touré-Coulibaly K, Maurice C, Vernon SD, et al. Assessing the relationship between HIV infection and cervical cancer in Côte d'Ivoire: a case-control study. *BMC Infect Dis*. 2010 Aug 17;10:242.
10. Gichangi PB, Bwayo J, Estambale B et al. Impact of HIV infection on invasive cervical cancer in Kenyan women. *AIDS* 2003;17(13):1963-1968.
11. Gichangi P, De Vuyst H, Estambale B, Rogo K, Bwayo J, Temmerman M. HIV and cervical cancer in Kenya. *Int J Gynaecol Obstet* 2002;76(1):55-63.
12. Nel CPG, Schoeman LC, Van Wyngaardt M, Horn H, Goedhals L, Joubert G. The prevalence of HIV amongst women with cervix cancer. *SA Fam Pract*. 2006;48(2):17.
13. Kietpeerakool C. Human Immunodeficiency Virus Infection in Women Undergoing Treatment for Cervical Neoplasia: Prevalence and the Feasibility of Routine Screening. *Asian Pacific J Cancer Prev*, 2008;9(1):36-38.
14. Kahesa C, Mwaiselage J, Wabinga HR, Ngoma T, Kalyango JN, Karamagi CAS. Association between invasive cancer of the cervix and HIV-1 infection in Tanzania: the need for dual screening. *BMC Public Health* 2008;8:262.
15. Chan YM, Ng TY. Screening for HIV infection in women with newly diagnosed cervical cancer. *Gynecol Oncol*. 2004;92:300-303.