Online Access available from: http://www.nphss.org.np/jhprospect

View Point

Health Prospect
Journal of Public Health

Open Access

Cervical Cancer Screening in Nepal

Joshi M[1], Mishra SR[2]

[2]Shiva Raj Mishra, Health Prospect: Journal of Public Health

Abstract

Cervical cancer screening is a process using the Pap smear to identify precancerous and potentially precancerous changes in cervical cells and tissue. Cervical cancer acts as the biggest killer and most preventable cancer in Nepalese women. This paper tries to give a brief overview of cervical cancer screening program in Nepal. Various published and unpublished literatures were obtained and reviewed from international journals, local newspapers and books. All literatures were systematically reviewed and analyzed. Human papilloma virus (HPV) infection is chiefly the reason for cervical cancer. In majority cases, early exposure to sexual intercourse, multiple sex partners and addiction are considered as risk factor. In Developing country like Nepal, screening for cervical cancers is not easily available to people at risk. A vaccine is available which reduces the risk of HPV. The vaccine will be effective if received before the onset of sexual activities 9-13 years. Cervical cancer screening program has many difficulties in terms of limited medical services, difficult geographical terrain creating difficulties in delivering health services. Special programs needs to be designed and delivered to population focusing on reducing burden of cervical cancer.

Keywords: early detection of cancer; mass screening; uterine cervical neoplasms; Nepal.

Background

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other tissues. Cervical cancer is a malignant neoplasm arising from uterine cells. Cancer screening, using the Pap smear can identify precancerous and potentially precancerous changes in cervical cells and tissue. (1) Center for disease control recommends that female patients have to start their regular cervical cancer screening test within their first sexual contact or with age of 21 years. Initially pap smear test and then after HPV screening test are recommended. Thus, by regular screening for HPV, it is now possible to reduce the risk of developing cancer in women worldwide. (2) Through screening individuals with asymptomatic pre-invasive lesions are identified and treated to halt the process of cancer development. (3)

Cervical cancer is the biggest killer and most preventable cancer among Nepalese women. Annually Nepal holds annual new cases of 3504 resulting 1100 deaths due to cervical cancer. Crude incidence rate was found to be 24.2%. An estimated 20 % of all cancers in female are linked with cervical cancer which are usually diagnosed at advanced stage. (2, 4)

The number of cervical carcinoma showed a rising pattern over the 10 year period. The median age of the patients was 45 years and maximum frequencies (33%) of cases were found in the age group 40 to 49 years. Squamous cell carcinoma comprised 40% of cases, Adenocarcinoma 4% and 1.1% cases were of mixed variety. Nine in ten (92%) of cases were Hindu by religion. 43% of patients were smoker, 5% had positive family history. Among the places, Chitwan with 7.35% had the maximum number of cases followed by Rupandehi with 6.40% and Nawalparasi with 5.41%. (5)

The awareness of human papilloma virus (HPV) was found to be 48.9%, 52.5% and 48.5% respectively in India, Nepal and Sri Lanka. In recent years, there has been increasing researches in cervical cancer among different communities in Nepal. This paper tries to give a brief overview of cervical cancer screening program in Nepal.

Methods

For the preparation of given article various published and unpublished literatures are obtained and reviewed from international journals local newspapers and books. Medline database was searched by using keywords “Nepal” and “Uterine cervical neoplasms” (MeSH words). Fifteen literatures were retrieved. Three literatures which were irrelevant for review were excluded. All literatures were reviewed systematically and analyzed.

Risk factors

Human papilloma virus (HPV) infection is the biological risk factor for the initiation of disease i.e. more than 90% cervical cancer precipitated due to HPV. (1)

In Asia, this has been linked to 67 % of all cervical cancers, with Southern Asia linked to 80 percent of all cervical cancers. (2) Early exposure in sexual intercourse, multiple sex partners, addiction (smoking, betel nuts), multiparity, low awareness and health care seeking behavior and poor hygienic practices are considered as behavioral risk factors for predisposing cervical cancer. (6, 7)

Correspondence:
[1]Mahesh Prasad Joshi
Pokhara University
Pokhara, Nepal.
E-mail: joshemahesh@gmail.com

Prevention

Cancer screening using the Pap smear can identify precancerous and potentially precancerous changes in cervical cells and tissue. Treatment of high-grade changes can prevent the development of cancer in many victims. In developed countries, the widespread use of cervical screening programs has dramatically reduced the incidence of invasive cervical cancer. (1)

There are preventive vaccines already developed and being used in developed countries against at least four of the high-risk HPV groups i.e. HPV 6, 11, 16 and 18. Gardasil is a vaccine manufactured by Merck protects against HPV 6, 11, 16 and 18. Cervarix is another vaccine manufactured by Glaxo Smithkline protects against 16 and 18. These are recommended for young girls in three shots (primary and booster dosages).

The vaccine for cervical cancer is effective if received before the onset of sexual activities at 9-13 years. Vaccination can be offered to those who are already sexually active as well regardless of previous history of HPV infection or an abnormal pap test. An effective HPV vaccine and one that is accepted have enormous public health benefit for both men and women by reducing morbidity and mortality associated with HPV. In developing countries like Nepal which lacks resources for widespread vaccination routine, cervical cancer screening should be a priority for saving millions of lives.(8) Policy makers responsible for allocating resources for cervical cancer prevention have a duty to allocate resources both for cancer surveillance and screening program. This is particularly important for low-resource countries. (3)

Pap smears have been the standard screening procedure for the detection of cervical cancer for almost 50 years. But, they require quality laboratory services, an efficient infrastructure, and experienced cytologist. For the developing country, like managing all these human and material resources, is a problem. As an alternative to Pap smear, many African countries have opted an inexpensive, low-tech test 'Visual Inspection with Acetic acid (VIA)'. VIA can be easily administered in which a healthcare worker applies dilute acetic acid (vinegar) to the cervix and looks for abnormal tissue that turns white in contact with the vinegar. (9) Molecular tests such as PCR are excellent methods which also detect cancers of initial stage. Though facilities of PCR are available in Nepal, this cannot be a feasible option for large scale prevention program. (2)

Discussion

There are difficulties in organizing cancer screening program in Nepal. (10) This includes limited human resources, medical services, and difficult geographical terrain resulting difficulties in delivering health services. The cold chain maintenance is another challenge due to lack of the electricity or irregular electric power supply. The most important factor is lack of awareness about HPV infection and cervical cancer. (11) In other hand, lack of scientific evidence about epidemiology of cervical cancer in Nepal is a problem in evidence based planning of health programs. (5) Along with this early initiation of sexual activities, lack of health care seeking behavior and low awareness of risk of cervical cancer among general population might be responsible for incidence of cases among Nepalese population. Programs must be delivered at community level through primary health care outlets aiming to reduce burden of problems of cervical cancer in Nepal.

A study conducted by Jha AK, Jha J et al on Scenario of Cervical Carcinoma in a Cancer Hospital revealed that the prevalence of cervical cancer associated with low education and awareness level in Nepal is in increasing trend. Regular medical and cytological screening will be very helpful to combat the burden along with reduction in mortality and morbidity. (5)This study urged to conduct regular screening program to detect and manage cervical cancer in Nepal.

A study by Sherpa et al in general population of Bharatpur, Nepal revealed that among the general population, the overall prevalence of HPV was 8.6%. Residence in slum housing, lower education level, > or =3 sexual partners in a woman's lifetime, and husband's extramarital affairs were significantly associated with HPV positivity. HPV16 was the most common type. (12) Similarly, a cross-sectional questionnaire survey in major cities of Nepal, India and Srilanka established relationship between nationality and awareness regarding risk factors, sexual activity at an early age (before 16) can cause cervix cancer, multiple sex partners can cause cervix cancer, condom/other birth control measures can't prevent HPV infection, smoking and heredity are risk factors. Preventive behaviors need to be adopted; reducing sexual partners and improving housing condition. (13)

Another study entitled awareness of cervix cancer risk factors in educated youth in India, Nepal and Srilanka by Teresa joy et. al. suggested that low education and awareness level on cervical cancer is seen among young adults and uneducated women. (14) Education about cervical cancer prevention and management will also be helpful to mitigate incidents and complications of cervical cancer.

Similar study entitled integrating cervical cancer screening and genital tract infection in mother child and family planning clinics in Eldoret, Kenya by Were E, Nyaberi Z et. al. suggest that cervical cancer screening program was seen to be feasible upon integrated with existing maternal and child clinic. (15)

A study conducted in rural china revealed that the combined screening program for cervical cancer, breast cancer and reproductive tract infection are better to implement and more effective rather than individual screening programs. Combined programs may be cost effective and widespread in coverage and service delivery. (16) So in Nepal, increase in access to cervical cancer screening program seems to be hopeful in combating high prevalence of cervical cancer.

HPV Vaccination programs also shows great effective-

ness and considered as effective barrier to prevent cervical cancer. (4) Study conducted by Prasai S stressed on Human papilloma virus vaccination in developing country. (17) As screening is only cost effective intervention in low resource setting, (18) public trust and public acceptance of such intervention needs to be increased. (19) There is inadequate data on subtypes responsible for causing cervical cancer in Nepal. Also, there is limited evidence about which HPV vaccines is effective in Nepal. (10) Further research needed to be conducted to understand the subtypes responsible for cervical cancer in Nepal and the vaccines most appropriate for them.

Conclusion

All above literatures facts and figures are supportive that cervical cancer is one of the public health problems in Nepal. More than thousands deaths occur in Nepal from many preventable and modifiable risk factors of cervical cancer. There are numerous strategies of behavioral modification, condom use, HPV vaccination to reduce risk of HPV reduction. Service access needs to be increased for high risk population. Special programs need to be designed and delivered to population focusing on reducing burden of cervical cancer.

References

1. Wikipedia. Cervical Cancer 2013. Available from: http://en.wikipedia.org/wiki/Cervical_cancer.

2. DR SAMEER M DIXIT PDMS. Cervical cancer in Nepali women. The Republica. 2012.

3. Nygard M. Screening for cervical cancer: when theory meets reality BioMed Central. 2011;11(240):1-5. English.

4. WHO I. Human papilloma virus and related cancer. Geneva: WHO, ICO, 2010 September 15, 2010. Report No.

5. AK Jha JJ, R Bista et al. A Scenario of Cervical Carcinoma in a Cancer Hospital. Journal of Nepal Medical Association. 2009 2009;48(175):199-202. English.

6. R Sreejata MS. Socio-Demographic and Behavioral Risk Factors for Cervical Cancer and knowledge attitude and practice in rural and urban areas of north bengal, India. Asia Pacific Journal of Cancer Prevention. 2012;13(4):1093-6. English.

7. T Jissa V MN, H Matti et. al. Socio Demographic and Reproductive Risk Factors for Cervical Cancer – a Large Prospective Cohort Study from Rural India. Asia Pacific Journal of Cancer Prevention. 2012;13(6):2991-5. English.

8. G D. Cervical Cancer and HPV Vaccine in Nepal: Issues and Challenges. In: Hospital KM, editor. Kathmandu2011. p. 56-7.

9. WHO. Screening still the “best buy” for tackling cervical cancer [cited 2013 August 16]. Available from: http://www.who.int/bulletin/volumes/89/9/11-030911/en/.

10. Gilbert DC. Human papilloma virus and cancer of the cervix: a challenge facing Nepal. Kathmandu University medical journal (KUMJ). 2006 Jul-Sep;4(3):396-7. PubMed PMID: 18603941. Epub 2008/07/08. eng.

11. Singh Y, Shah A, Singh M, Verma S, Shrestha BM, Vaidya P, et al. Human papilloma virus vaccination in Nepal: an initial experience in Nepal. Asian Pacific journal of cancer prevention : APJCP. 2010;11(3):615-7. PubMed PMID: 21039025. Epub 2010/11/03. eng.

12. Sherpa AT, Clifford GM, Vaccarella S, Shrestha S, Nygard M, Karki BS, et al. Human papillomavirus infection in women with and without cervical cancer in Nepal. Cancer causes & control : CCC. 2010 Mar;21(3):323-30. PubMed PMID: 20217467. Epub 2010/03/11. eng.

13. Sankaranarayanan R, Bhatla N, Gravitt PE, Basu P, Esmy PO, Ashrafunnessa KS, et al. Human papillomavirus infection and cervical cancer prevention in India, Bangladesh, Sri Lanka and Nepal. Vaccine. 2008 Aug 19;26 Suppl 12:M43-52. PubMed PMID: 18945413. Epub 2008/11/01. eng.

14. Teresa Joy BS, Chacchu Bhattarai, Jenny Chacko. Awareness of Cervix Cancer Risk Factors in Educated Youth: A Cross-Sectional, Questionnaire Based Survey in India, Nepal, and Sri Lanka. Asia Pacific Journal of Cancer Prevention. 2011 2011;12:1707-12. English.

15. Were E NZ, Buziba N. Integrating cervical cancer and genital tract infection screening into mother, child health and family planning clinics in Eldoret, Kenya. African Health Sciece. 2010;10(1):58-65. English.

16. Zhi-fang Li S-MWea. Combined Screening of Cervical Cancer, Breast Cancer and Reproductive Tract Infections in Rural China. Asian Pacific Journal of Cancer Prevention. 2012 2012;13:3529-33. English.

17. Prasai S. Human Papilloma Virus Vaccination: Should it be mandatory. Journal of Nepal Medical Association. 2008;47(171):167-71. English.

18. Screening the only option to prevent cervical cancer. JNMA; journal of the Nepal Medical Association. 2005 Jul-Sep;44(159):I. PubMed PMID: 16554856. Epub 2006/03/24. eng.

19. Prasai S. Human papilloma virus vaccination: should it be mandatory? JNMA; journal of the Nepal Medical Association. 2008 Jul-Sep;47(171):167-71. PubMed PMID: 19079386. Epub 2008/12/17. eng.