NNCTR Cervical and Breast Cancer Screening Activities in Nepal

Background information:

Cervical cancer in Nepal

According to the World Health Organisation[1], Human Papillomavirus (HPV) causes cervical cancer, and is the second highest cause of female cancer mortality worldwide with 288 000 deaths yearly. About 510 000 cases of cervical cancer are reported each year with nearly 80% in developing countries: 68 000 in Africa, 77 000 in Latin America, and 245 000 in Asia.

Successful cervical cancer screening programs effectively reduce cervical cancer incidence. This has been demonstrated in developed countries such as the United States of America and Australia where cervical cancer does not even appear in the top ten cancers affecting women.

Cervical cancer is an entirely preventable disease. The cervix is easily accessible, and pre-cancerous lesions can be detected visually before they become a threat to health. However, in Nepal most women are only diagnosed with cervical cancer once it has become invasive, resulting in women dying prematurely and unnecessarily.

Cervical cancer is the most frequent cancer affecting Nepali women. In 2008 it was estimated that more than 10,000 new cases of invasive cervical cancer arise in Nepal each year, and that 26000-45000 women have a precancerous lesion at this moment[2].

[1] http://www.who.int/vaccine_research/diseases/hpv/en

[2] JHPIEGO. (2008). Report on: "Cervical Cancer Prevention (CECAP) Situational Analysis of Awareness, Services, Referral and Policies in Nepal."

Two of the major reasons for the high rate of cervical cancer in Nepal are firstly, a lack of awareness and education, and secondly, a lack of available and affordable preventative services, with no government programs.

Approximately 3.2 million Nepalese women aged 30-60 years currently require screening for cervical cancer. However, cervical cancer screening programs are few and it is thought that less than 2% of women have ever been screened.

Women and children waiting at a screening camp

The impact of cervical cancer on local communities is enormous and a successful cervical cancer screening program is a health initiative that is complementary to a number of the Millennium Development Goals[1]. As it only affects women, successful screening and treatment would greatly reduce gender inequality in health services. Furthermore, cervical cancer results in the loss of a mature female family member who is usually the breadwinner and caretaker. The affected woman cannot work leading to loss of income, in addition to the financial burden of treatment for invasive cancer. These factors lead to increased rates of poverty.

Breast cancer in Nepal

Breast cancer is the second most common cancer among Nepalese women. It accounts for 6% of cancers in Nepal, in a higher of women aged less than 50 years[3], compared to older women in high-income countries.

Early detection of breast cancer is the most important method of reducing the mortality and morbidity associated with breast cancer. Screening for breast cancer in developed countries generally involves clinical examination and mammogram. However, general health and mammography services are scarce in Nepal resulting in very few women ever being screened for breast cancer. Moreover, because early breast cancer is generally asymptomatic, many women present at a far progressed stage of breast cancer when it's too late to save their lives.

[3] Singh, Y.P. and Sayami, P. (2009). "Management of breast cancer in Nepal." Journal of the Nepal Medical Association **48** (175): 252-257.

NNCTR/INCTR NEPAL

NNCTR/INCTR Nepal is a non-profit, non-governmental organization dedicated to helping to build capacity for cancer treatment and research in Nepal. Its mission is to raise awareness about cancer control, to lessen the suffering, limit the number of lives lost, and promote the highest quality of life for children and adults with cancer, as well as to increase the quantity and quality of cancer research throughout the country. It was created in 2000, and operates as the Nepalese Branch of the International Network for Cancer Treatment and Research (INCTR), Brussels, Belgium, since 2002.

Its current projects and activities include conducting cancer awareness programs for children and adults, cervical screening programs, clinical breast cancer screening programs, and expanding palliative care programs within the Kathmandu Valley region. In addition, NNCTR is working together with the Nepal Australian Cervical Cancer Foundation (NACCF)[4] to deliver the HPV vaccine in a school-based program. To date, more than 4300 girls have been vaccinated thanks to the support of the Australian Cervical Cancer Foundation (ACCF) and the Axios Gardasil Access Program.

NNCTR started providing cervical cancer screening to the women of Nepal in 2002. So far, 15,460 women in 6 districts within the Kathmandu Valley area have been screened for cervical cancer, in collaboration with INCTR, the Australian Cervical Cancer Foundation (ACCF), PHASE Worldwide and the Australian Embassy through their Direct Aid Program (DAP).

In addition, NNCTR has been providing breast cancer screening programs since 2007. More than 2800 Nepali women were screened for breast cancer to date. NNCTR also trains nurses on breast cancer clinical examination and education.

Recent NNCTR cancer screening and prevention program beneficiaries

[4] http://www.naccf.net

Breast Cancer and Cervical Screening Camps

The first cervical cancer screening test developed was the Pap smear test, invented by John Papanicolau. Cells are taken from the cervix and visualized using a microscope to identify abnormalities in cell morphology that are indicative of a pre-cancerous lesion. With frequent annual or bi-annual pap smears cervical abnormalities can be successfully detected and treated before they become cancerous lesions.

In resource-constrained countries, the Pap smear test is not appropriate as it is a complex laboratory procedure that requires well trained technicians and pathologists. Since the results are not instant, there is also a risk of losing patients for follow-up results. Therefore, alternative screening procedures have been developed and validated.

One of these alternative techniques is the VIA method (Visual Inspection with Acetic Acid). This method is safe, easy, time saving, inexpensive, simple to learn, can be performed in any setting and the results are available instantly. The sensitivity and specificity of this technique is also comparatively equivalent to the Pap test. It requires the application of dilute acetic acid (vinegar) to the cervix of the woman, where, if immature/precancerous cells are present, the cell cytoplasm becomes cloudy. This results in what is called an 'acetowhite' area on the cervix that is visible to the naked eye. If an acetowhite area exists then it is likely that this represents a pre-cancerous lesion.

NNCTR combines the use of the VIA method with a second widely accepted test for cervical cancer, the VILI method (Visual Inspection with Lugol's Iodine). This test is similar to the VIA method, but instead, Lugol's Iodine is applied to the cervix and *non*-staining areas are potential lesions. The combination of the two methods for each women screened reduces the chance of false negative diagnoses and does not add greatly to the cost of examination.

NNCTR provides screening services by forming mobile teams of specialist nurses and community volunteers that travel to communities within the Kathmandu Valley area. This requires working in close collaboration with local authorities, district health offices, hospitals, health posts, women and mothers groups, local NGOs and other stakeholders. Once informed about cancer awareness and the importance of cervical screening, local women community leaders identify a suitable location for the camp and encourage women to visit the cervical screening camp.

Our team of specialist trained field nurses performing visual inspection of the cervix.

On the day of the camp, a mobile team of approximately 22 trained volunteer field nurses, community volunteers and NNCTR staff members travels to the location chosen by the women community leaders. Women firstly complete administration and then undergo screening for cervical cancer. Visual screening methods are used allowing women to be given the test results on the spot. Screen-positive women are then provided with details of where they can receive follow-up treatment. NNCTR provides follow up treatment free of cost at its premises as well as at affiliated hospitals. Women presenting with cervical infection are provided any necessary medication free of charge on the day.

In addition, we have a separate room at the screening camps to provide breast cancer screening. Specially trained nurses give each woman an education session relating to breast cancer. The education session involves a detailed description of breast cancer, its signs and symptoms. Women are then shown how to examine their own breasts. The technique of self-breast examination may be useful in resource poor Nepal where mammography is widely unavailable and expensive[5]. It also emphasizes the early signs of breast cancer to women, supplementing oral explanations.

After the education session is complete, the nurses perform a clinical breast examination on each woman. The results of the examination are discussed with the woman at that time and positive or suspect cases are referred to NNCTR-affiliated hospital.

Breast self examination poster

Our screening camps combat the top two cancers affecting women. These screening camps are also used as an opportunity to raise communities and women's awareness about cancer, and the benefits of preventive medicine by organizing education session and distributing brochures. In addition, we also provide cancer education sessions to school children and health professionals. We hope that education will, in the long term, increase awareness of cancer and promote gender equality in health services.

Delivering cancer education to school children

[5] Tara, S., Agrawal, C.S., Agrawal, A. (2008). "Validating breast self examination as screening modalities for breast cancer in eastern region of Nepal: a population based study." Kathmandu University Medical Journal **6** (1): 89-93.