

Editorial

Prevention of Cervical Cancer

According to WHO report in 2018 globally cervical cancer is the fourth most common cancer in women. An estimated 570,000 new cases were diagnosed in this year (2018) which represent 6.6% of all female cancers. The report also mentioned that approximately 90% of all deaths occurred in low and middle income countries. According to WHO report in 2018 globally this high mortality rate from cervical cancer could be reduced through a comprehensive approach like effective vaccination program, screening and early diagnosis with treatment programmes. In Bangladesh each year 12,000 cases of cervical cancer are detected out of which 6600 die¹.

Cervical cancer belongs to a glorious natural history which favours prevention of this dreadful cancer. Fortunately its etiology also has been established. In 2018, the Nobel Prize in Physiology or Medicine was awarded to Dr. Harald zur Hausen for his role in establishing the causal link between human papillomavirus (HPV) infection and cervical carcinoma. This announcement reflects the importance of the discovery of a sexually transmitted infection as the necessary cause of cervical cancer and the enormous opportunity for public health interventions².

Among all cancers of the body cervical cancer belongs to a crystal clear and assuring natural history. The persistent infection of exocervical epithelium by HPV virus leads to the preneoplastic changes in the cervical epithelium. This change is known as cervical intraepithelial neoplasia (CIN) which is graded as CIN I, II and III depending on degree of involvement of cervical epithelial thickness. CIN I also known as low grade squamous intraepithelial lesion or LSIL is a transient HPV infection, remain static or regress spontaneously. Only 1-3% of CIN I can progress to invasive cancer and it takes 5-25 years. Ninety nine percent of CIN I needs only observation. When treatment needed is usually by cryotherapy or thermocoagulation. CIN II and III also known as high grade squamous intraepithelial lesion or HSIL. Around 30-50% of them progress to invasive cancer

if they remain undetected and untreated. It also takes 5-15% years to progress to invasive cancer. CIN II and III are known as cervical cancer precursors. This ensuring natural history and well established etiology of cervical cancer is the background of prevention of this cancer. Treatment of CIN III is by Loop Electrosurgical Excision Procedure (LEEP) or Cold Knife Conisation (CKC). CIN II is a ill defined condition, treatment of which is not well established. Most of this lesions can be treated by ablative procedure and very few need excisional procedure. Very recently facility for determining E6 oncoprotein has been developed at BSMMU depending on it's presence or absence on cervical sample, decision for treatment or observation can be undertaken. Presence of E6 oncoprotein in cervical sample of CIN II cases need treatment. On the other hand absence of which do not need treatment.

Carcinoma-in-situ cervix (CIS) is a different category of disease characterized by disordered growth of whole thickness of cervical epithelium together with malignant changes of some cells with intact basement membrane. Treatment of this condition is also different, either by CKC or by LASER cone biopsy. Most of these cases undergo changes to invasive cancer if not detected and treated earlier.

Key strategies for prevention of Cervical Cancer: All women can avail the opportunity for prevention of cervical cancer at 3 phases of her life as shown in the figure-1.

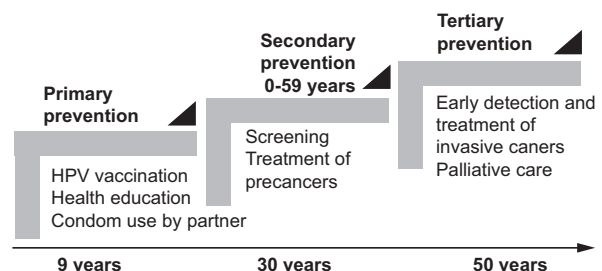


Fig.-1: Cervical cancer prevention and control strategies over the lifespan of women³

Primary prevention⁴: The HPV vaccine, which received FDA approval in 2005 in over 90 % effective

when given to sexually unexposed girls of 9 to 15 years old. This group of girls require 2 (two) doses only at 0 and 6 months. And they are considered as target group. Second group of women are of 16 to 26 years old women. They can receive the vaccine and considered as catch up group. They need 3 doses of vaccine at 0, 1 and 6 months. HPV vaccines are highly recommended for both girls and boys. Boys can get the vaccine at around age 11 to 12 to prevent them from developing HPV related cancers including anal, rectal, mouth / throat and penile cancers.

Australia was the first country in the world to initiate a national publicly funded HPV vaccination programme and to document its effects on intermediate outcomes. Australia enrolled national HPV vaccination programme in 2007, used a quadrivalent vaccine (Gardasil [Merck]) in a three dose schedule⁵. Boys aged 12 to 13 years were included in the programme from 2013⁶. In UK national immunization programme is using HPV vaccine. The programme uses Gardasil and the girls are offered the childhood immunization programme in which the vaccine is routinely given to 12 to 13 years girls with 2 doses at 0, 6 months. But it is available free on National Health Service (NHS) to all girls up to 18th birthday⁷.

In Bangladesh a demonstration project has been started at Gazipur district during 2016 – 2017 . This programme included all girls at their 10 th birth year or all school girls of class V. In this programme 33000 girls of Gazipur district have been vaccinated by two doses of bivalent vaccine (Cervarix [GSK]). Recently an evaluation programme is going on to see the feasibility of scaling up of the programme to incorporate HPV vaccine in national immunization programme of Bangladesh (personal communication with Dr. Habibullah Talukder). Some risk factors for development of cervical cancer can be avoided by widespread health education on avoidance of childhood marriage, repeated childbirth, multiple sexual partner, smoking, use of oral contraceptive pill for more than 5 years needs to be ensured. Health education and vaccination can prevent 70 % of cervical cancer.

Secondary Prevention: Secondary prevention of cervical cancer by screening is the oldest model of global and national health policy. Secondary prevention is feasible through the detection and timely treatment of HSIL and carcinoma in-situ.

In UK cervical cancer mortality have been reduced by 70% through the introduction of the NHS cervical screening programme in 1988. In England a population based organized screening programme is actively maintaining call and recall system for screening by cytology. Recent research concluded that the risk of cervical cancer can be reduced to 70% if everyone attended when invited. In this programme cytology based screening is offered to all women aged 25-64 at the interval of 2 years⁸. In Australia the incidence and mortality of cervical cancer are among the lowest in the world. After introduction of the National Cervical Screening Programme (NCSP) in 1991, cervical cancer incidence in Australia decreased by approximately 50% in women elder than 25 years⁹. The NCSP involved cyclogy-based screening every 2 years from age 18-20 years to age 69 years. Coverage of this programme is reported in 2017 as 83% over the 5-years period 2011-15¹⁰.

Situation of South East Asian Region is different. The public health system of this region is overburdened and has limited copability to include additional health programme. According to Indian Health Service cytology-based screening every three years is recommended for all women aged 21 to 65 years and combined screening by paps and HPV test recommended every five years for women aged 30-65 years¹¹. In Bangladesh a National Breast and Cervical Screening Programme is going on since 2015. In this programme opportunistic VIA screening is offered by trained medical personnel to healthy women aged 30 to 59 years attending health care facilities in 44 districts. Colposcopy and/or directed biopsies are performed on VIA-positive women at Bangabandhu Sheikh Mujib Medical University (BSMMU) or medical college hospitals. From January 2005 to June 2008, 104098 women underwent VIA screening. Among them 5013 (4.8%) women were positive, of whom 4371 (87.2%) attended colposcopy clinics in different hospitals. Results for sensitivity, specificity, and positive predictive value of VIA to detect CIN 2-3 lesions were 93.6%, 58.3%, and 15.6%, respectively¹².

Cytology based screening in Bangladesh has been developed tremendously during last 5 years. Almost all medical college and some district hospitals has developed pap's smear facility. In BSMMU Liquid-based Cytology (LBC) has been introduced in 2015,

and now it is in routine use. One study report at BSMMU shows its specificity as 92%. Though sample collection is easy by LBC sample, it cannot be introduced everywhere as the method is technically difficult and costly.

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