

Editorial

History of Introduction of Bivalent Human Papilloma Virus 16/18 Vaccine in Bangladesh

Background:

Cervical cancer is the most prevalent gynaecological cancer among low socioeconomic women of Southeast Asian region and 99.7% of this cancer is caused by Human Papilloma Virus¹ Globally it is the fourth most and in developing countries second most common cancer in women². In Bangladesh its incidence is 19.2 per lac women of 30-60 years and is the second leading cause of cancer death among women of 15-45 years age³.

Among more than 100 HPV types about 10 are found to be high-risk with the potential to develop cancer. Worldwide more than 70% of cervical cancer are associated with two high-risk HPV types 16 and 18^(4,5) In Bangladesh one study mentioned that HPV 16 was detected in 81.82% and HPV type 18 in 9.09% of cervical cancer cases⁶.

WHO global strategy is to eliminate cervical cancer by 2030 by implementing four key targets. Key targets to be fulfilled by 2030 are :

1. 90% girls to be fully vaccinated with the human papilloma virus vaccine by 15 years of age.
2. 70% of women screened with a high-performance test at least two times per life by 35 and 45 years of age.
3. 90% of women identified with cervical cancer receive treatment and care.
4. 90% reduction in mortality from cervical cancer⁷.

The current draft of the Global Strategy towards the Elimination of Cervical Cancer as a Public Health Problem establishes that the threshold under which cervical cancer should no longer be considered as a public health problem is an age-adjusted incidence rate of <4 per 100000 women-years⁸.

During the last century, one of the greatest medical break through is the development of HPV vaccine against cervical cancer. Now three types of vaccine , Bivalent(Cervarix), Quadrivalent (Gardasil) and Nonavalent(Nano-vaccine) has been licenced by FDA for use to vaccinate the girls and boys. The bivalent

HPV (bHPV) type 16/18 vaccine is licenced for use in females only. WHO recommendation is that, all 9-15 years girls should be vaccinated by HPV vaccine as the vaccine is highly immunogenic and only two doses at the interval of six months are sufficient in this age group to develop herd immunity against Human Papilloma Virus.

Introduction of HPV vaccine in Bangladesh

The history of introduction of HPV vaccine in Bangladesh was initiated by a request letter written on third March 2008 by prof. A.K Goodmann, head ,Gynaecological oncology Division of Harvard medical school, Boston and prof. Bimalangshu Dey, Haematological oncologist of the same medical school to the Director, Public Relations Division, Grameen Phone Ltd. Dhaka , Bangladesh. It was a proposal letter for a pilot study of introducing and evaluating the HPV vaccine among Bangladeshi adolescent girls. Their proposed budget was taka ten lac only. The responsibility for the implementation of the pilot study was given to the Professor Emeritus ABM F Karim, world famous Radiation oncologist of Bangladesh.

In the International Socio-scientific conference held in Dhaka in 2008 Prof. ABMF Karim handed over the approval letter of Grammeen Phone Ltd. to Prof. Sabera Khatun, Head of the Division of Gynaecological oncology of Bangabandhu Sheikh Mujib Medical University. According to the advice of Prof. ABM F Karim a small committee named Bangladesh Cervical Cancer Vaccination Program Committee (BCCVPC) was formed. Prof. ABMF Karim was the advisor, Prof. Sultana Razia Begum was the Chairman and Prof. Sabera Khatun was the member-secretary of that Committee. Other members of the committee were Prof. Shahla Khatun, Prof. Sameena Choudhury, Prof. Kohinoor Begum, Dr Fawzia Hossain and Dr. Jannatul Ferdous. Prof. Sabera Khatun and Prof. Sameena Choudhury developed a project proposal and according to that proposal the bivalent HPV 16/18 ASO4 adjuvanted vaccine (Cervarix) was selected for vaccinating 50 unmarried and sexually unexposed adolescent Bangladeshi girls by three doses of Cervarix at 0,

1,6 months schedule. The project named 'Pilot Program for Prevention of Cervical Cancer by HPV Vaccination in Bangladesh' was a case control study. It was very difficult to obtain registration of Cervarix from the Drug Administration of Bangladesh. Also another very very hard job was to get ethical clearance from the ethical committee of BSMMU and BMRC. Ultimately at the expense of much effort of Prof. Sabera Khatun and other members of the committee it was successful and a launching program for introduction of Cervarix in Bangladesh was held on 27th December 2008, nine months after taking responsibility from Prof. ABM F karim. In the launching program ever lucky 10 girls were vaccinated by first dose of Cervarix.



Dr. AMM Shawkat Ali in the launching ceremony



Dignitaries in the Launching Ceremony (27th December 2008 at Hotel Sheraton)

Prof. ABMF Karim- Chairperson; Dr. AMM Shawkat Ali, H and FWF Advisor, Special Guest; AMM Nasiruddin, Health Secretary, Special Guest; Prof. MAbul Faiz, Director General, DGHS, Special Guest, Prof. Nazrul Islam, Vice Chancellor, BSMMU, Special Guest; Mr. Khalid Hassan, Grameen Phone Representative.



Prof. Sabera Khatun is supervising the pushing of the first injection of cervarix



Professor Emeritus ABMF Karim in the launching ceremony



Prof. Sabera Khatun and Prof. Sameena Choudhury with the girl who got 1st Cervarix in Bangladesh

A total 67 (50 case and 17 control at 3:1 ratio) girls were vaccinated by Cervarix at 0,1 and 6 months schedule. Their Anti HPV antibody was detected at 1 month prevaccination and 7 months postvaccination. Prevaccination antibody was zero and postvaccination antibody detection rate was 97.3%. During the subsequent 10 years about 1000 more girls were vaccinated by two doses of Cervarix with

the personal effort of Prof. Sabera Khatun and other members of BCCVPC. This second project was sponsored by Akiz Group Ltd. of Bangladesh.

The aim of BCCVPC was to introduce and incorporate Cervarix in to the EPI of Bangladesh. Consequently in the reference to this pilot program⁹ EPI Bangladesh applied to GAVI for a Demonstration project to incorporate and expand HPV vaccine in to the EPI program. They worked hard and finally the program started in 2016 at Gazipur district. In the program 33000 girls of ten years old were vaccinated by two doses of Cervarix. Quadrivalent vaccine (Gardasil) could not be procured by EPI of Bangladesh due to shortage of storage capacity of that institute.

Cervarix is highly immunogenic for the Bangladeshi girls. Fifty girls who were piloted in 2008, their HPV antibody has been detected by Dr. Chowdhury Shamima Sultana for her thesis work in 2015 and the rate of antibody detection was 93%. In addition to the target group of girls of 9 to 18 years, catch-up group of Bangladeshi women of 18 to 26 years can be vaccinated and benefited.

Conclusion: Our aim is to inform our readers about the actual facts on the introduction of Cervarix in Bangladesh. Today's urgent demand of BCCVPC is to start population-based vaccination by Cervarix. Without vaccination of mass population of adolescent girls of Bangladesh prevention or elimination of cervical cancer from Bangladesh will remain a dream only.

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