Editorial referring to the paper published in this issue on pp. 410–417

URINARY TRACT INFECTIONS

Knowledge about virus biology is crucial for us

Marcin Matuszewski, Jerzy Michajłowski

Department of Urology, Medical University of Gdańsk, Poland

Medical literature generally acknowledges that persistent infection with HPV, especially types 16 and 18, is a predisposing factor for developing cervical intraepithelial neoplasia (CIN) and cervical cancer. A similar relationship was found in penile, oropharyngeal and vulvar carcinomas. It has also been established that HPV is the most common sexually transmitted virus worldwide. WHO data shows too, that globally cervical cancer is the third most common cancer in women and is responsible for about 300 000 deaths a year [1].

For these reasons, the possible prevention of cervical cancer draws enormous interest. This has seemed to become a reality after the introduction of the HPV vaccine, which induces a cell-mediated immune response preventing HPV infection for many years [2].

The idea of using an HPV vaccine in the prevention of cervical cancer seems logical, prompting many medical and public organizations to recommend vaccination of young girls as a means of reducing the incidence of cervical cancer. Nowadays, different programs of this prevention function in more than 50 countries [3].

The study presented by Deriemaeker and colleagues in this issue of CEJU deals with the public perspective of cervical cancer and HPV vaccination, using a questionnaire in a population of Belgian students.

The study, with the obvious drawback of a very low response rate (13%), is however quite interesting as it draws our attention to the very hot issue of HPV vaccination.

The problem is not only with the education that we, as medical professionals should give to people, but also how politics may influence medical decisions.

In the New England Journal of Medicine, Colgrave presented his study of decision-making in the US legislature concerning HPV vaccine implementation. He described that medical organizations generally support the idea, but he also claimed that opponents of HPV vaccination put up many counter arguments.

The first of these was concern about the vaccine's unknown long-term side-effects.

Secondly, there is the lack of long-term data proving whether the vaccination really decreases the mortality rate of cervical cancer and not only prevents HPV

infection. We know that the time interval from HPV infection to the development of pre-invasive cervical lesion is 7 years and to invasive cervical carcinoma is even 25–30 years. In fact, studies showing a huge possible reduction of cervical cancer mortality and cost-effectiveness of the vaccination are very appealing, but they are only projections.

Other opponents argue that the process of introducing HPV vaccination was very strongly lobbied by pharmaceutical companies [4].

There are also claims that vaccination of young girls against the sexually transmitted viral infection may promote earlier initiation of sexual activity [5].

So the study of Deriemaeker, in fact, shows the result of this educational and political debate in Belgium. The opinions of a particular population were analyzed – students, including many medical students, from an open modern society with more than 50% atheists, in a wealthy country where access to the HPV vaccine is free of charge. We may therefore assume that in this group knowledge of the problem as well as the vaccination rate will be near-optimal. Any less educated, more traditional groups from poorer populations or from countries without vaccine reimbursement would be less aware of the problem and more reluctant to vaccinate against HPV.

The data showing that 82% of respondents were aware of the link between HPV and cervical cancer, and a 62% vaccination rate overall, with 82% under 21 years of age, are very encouraging

So the conclusion of the study is, that in Belgium the debate in the well-educated, young part of society has been won by proponents of HPV vaccination. It is even more visible in medical students who, because of their future profession will probably confer the message to the general public. On the other hand, we may suspect that much is to be done to promote HPV vaccination in other populations. It is especially important because HPV vaccination is to play a more important role in populations where other forms of cervical cancer prevention such as access to good gynecological care, and cytological screening are not so easily or widely available.

References

1. McGraw SL, Ferrante JM. Update on prevention and screening of cervical cancer. *World J Clin Oncol*. 2014; 10: 744–752.
2. Meyer SL, Fuglsang K, Blaakaer J. Cell-mediated immune response: a clinical review of the therapeutic potential of human papillomavirus vaccination. *Acta Obstet Gynecol Scand*. 2014 doi:10.1111/aogs.12480
3. Jit M, Brisson M, Portnoy A, Hutubessy R. Cost-effectiveness of female human papillomavirus vaccination in 179 countries: a PRIME modelling study. *Lancet Glob Health*. 2014; 2: e406–414.
4. Colgrove J, Abiola S, Mello MM. HPV vaccination mandates – lawmaking amid political and scientific controversy. *N Engl J Med*. 2010; 363: 785–791.
5. Quinn GP, Vadaparampil ST, Johns T, Alexander KA, Giuliano AR. Adolescent sexual activity and cancer risk: physicians' duty to inform? *Curr Med Res Opin*. 2014; 30: 1827–1831. ■

Correspondence

Dr. habil. Marcin Matuszewski, Ph.D., FEBU
matmar@amg.gda.pl