

## Correspondence

### Knowledge of Saudi female university students regarding cervical cancer and acceptance of the human papilloma virus

#### *To the Editor*

We read the recent publication on the “Knowledge of Saudi female university students regarding cervical cancer and acceptance of the human papilloma virus vaccine (HPV)” by Al Sheikh et al.<sup>1</sup> Cervical cancer is the third most common female cancer worldwide with an estimated incidence of 530,000, with 270,000 related deaths in 2012. Attributable fraction due to HPV infection was estimated to be 100%.<sup>2</sup> Cervical cancer is one of the most common cancers among women in Saudi Arabia. Oncologist Dr. Najla Al-Mari said a study carried out in the year 2011 in 3 general hospitals showed that 55 women die annually from cervical cancer and more than 150 cases were recorded.<sup>3</sup> The good thing on this type of cancer is that it takes years to develop. The body may contract the virus, but it remains dormant for a number of years. It is also very easy to detect because its symptoms appear before the contraction of the actual disease. This allows recognizing it and removing it in its first stages. This type of cancer can be detected in its early stages through vaginal scanning to monitor mutations of the cervical tissues. Every married woman should have a vaginal scan biennially after 3 years into her marriage. The factors that increase the risk of human papillomavirus are marriage at a young age, and marrying someone who has had multiple sexual partners. Konno et al<sup>4</sup> reported that the highest incidence rates are in sub Saharan Africa, central, and South America. In contrast, the incidence rate is lowest in the Middle East particularly among Muslims and Jews as compared with other religious groups.<sup>4</sup> Association of oncogenic HPV infection and the development of cervical cancer provides an opportunity for primary prevention through prophylactic vaccination. The vaccination is highly effective and safe.<sup>5</sup> In our daily practice in the pediatric clinic, parents often enquire on available vaccines after their child finishes the recommended immunization schedule for persons aged 0 through 6 years. Recommendations from the American Academy of Pediatrics (AAP), the American Academy of Family Practice (AAFP), and the American College of Obstetricians and Gynecologists (ACOG) all recommend the bivalent or quadrivalent HPV vaccines for female children aged 11-12 years of age for the prevention of cervical, vaginal, and vulvar cancer and

the related precursor lesions caused by the HPV types targeted by these vaccines.<sup>6</sup> Two vaccines have been developed against HPV infection; one is a quadrivalent vaccine (Gardasil), and the other is a bivalent (Cervarix) vaccine. Excellent antibody responses have been reported following immunization with both quadrivalent and bivalent vaccines.<sup>7</sup> In view of the magnitude of this problem; cervical cancer vaccine should be included in the present immunization schedule. This vaccine is available in private hospitals at a cost, and the public would like the Ministry of Health to make this vaccine freely available. We agree with the authors that there is a need to utilize all means of communication to raise awareness among the public regarding this disease.

*Ghulam Nabi*

*Department of Pediatrics*

*Bugshan Hospital*

*Jeddah, Kingdom of Saudi Arabia*

#### *Reply from the Author*

We thank Dr. Ghulam Nabi for the comments on our recently published paper.<sup>1</sup> The focus of the study is beyond the recommendation of HPV vaccine in Saudi Arabia. The study was designed to assess the level of knowledge and beliefs regarding cervical cancer, and the acceptance of the HPV vaccine among Saudi university students enrolled in health colleges because of their important role as a future health care providers. Appropriate level of knowledge, attitude, and beliefs are key elements for adopting a healthy lifestyle, influencing human behaviors, and accepting newly introduced preventive measures. The study indicates a poor level of knowledge of cervical cancer and misinformation regarding primary and secondary preventive measures among students enrolled in the study. This study is the first phase of a 2 phase project, the second intervention phase will be guided by the results of the present study. However, we would like to highlight specific points related to cancer of the cervix uteri in KSA in particular, in addition to the global role of the HPV virus as a risk factor for cancer of the cervix, and the safety and efficacy of HPV vaccine.

The Saudi Cancer Registry (SCR) reported that breast cancer ranked first among female cancers during a 14-year period (1994-2010).<sup>8</sup> In 2010, there were 1473 female breast cancer cases accounting for 27.4% of all newly diagnosed female cancers (5,378). The age standardized incidence rate (ASR) was 24.9/1000. Regarding cancer of the cervix uteri, there were 82 diagnosed cases in 2010, the ASR was 1.5/100,000 for

female population. Ranking of the cervix uteri cancer ranged from 9-13 during the period from 1994 to 2010.<sup>8</sup> In contrast, cancer of the cervix uteri ranked third in western countries.<sup>9</sup>

The association between the HPV virus and cancer of the cervix is well established. Based on a meta-analysis, the adjusted HPV prevalence worldwide among women with normal cytological findings was estimated to be 11.7% (95% confidence interval [CI]: 11.6-11.7%).<sup>9</sup> The highest adjusted prevalence was found in sub-Saharan African regions (24%; 95% CI: 23.1-25.0%), Latin America and the Caribbean (16.1%; 95% CI: 15.8-16.4%), Eastern Europe (14.2%; 95% CI: 14.1-14.4%), and south-eastern Asia (14%; 95% CI: 13.0-15.0). However, country-specific adjusted HPV prevalence in cervical specimens ranged from 1.6-41.9% worldwide.<sup>10</sup> The HPV types 16, 18, 45, 31, 33, 52, and 58 account for approximately 90% of the squamous-cell carcinomas that are positive for HPV DNA.<sup>11</sup> Noteworthy, most HPV infections do not cause symptoms or disease and resolve spontaneously. It is estimated that no more than 2% of all women in low-resource countries will develop cervical cancer during their lifetime.<sup>10</sup>

Despite a solid safety record for the FDA approved HPV vaccines (Gardasil and Cervarix), adverse events have been registered with the Vaccine Adverse Events Reporting System (VAERS).<sup>10</sup> A review of the evidence regarding the safety of HPV vaccines concluded that both vaccines are associated with relatively high rates of injection site reactions, particularly pain, but these are usually of short duration and resolve spontaneously. Pyrexia was reported in >1% of vaccines and more frequently than in placebo groups (10.1% and 8.4%). Mild systematic adverse effects including headache, dizziness, myalgia, arthralgia, and gastrointestinal symptoms (nausea, vomiting, abdominal pain) were reported. Post-vaccination syncope has been reported, as with many vaccines; however, it can be minimized and its complications avoided with appropriate care. Reports of post vaccination Bell's palsy and Guillain-Barré syndrome were within the expected range in the general population.<sup>12,13</sup>

As for the situation in KSA, National multicenter studies are paramount to determine the genotype of oncogenic HPV virus circulating in the Kingdom, assess the prevalence of HPV infection among the target population, and to evaluate other risk factors associated with cancer of the cervix uteri. Accordingly, HPV vaccine cost effectiveness studies, and large scale vaccine acceptance should be undertaken before community application of the vaccine.

*Ghadeer AlShaikh*  
*Department of Obstetrics & Gynecology*  
*King Khalid University Hospital*  
*King Saud University*  
*Riyadh, Kingdom of Saudi Arabia*

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