

Short Communication

Why the HPV Vaccine is Essential to Preventing a Rising Threat

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Abstract

Over the past few decades, the prevalence of HPV-associated oral cancers has steadily risen. Such a trend can be attributed to changing sexual behaviors, specifically oral sexual activity among adolescents. The HPV vaccine has been a key component in the battle against cervical cancer. It is therefore imperative we similarly emphasize adherence to the HPV vaccine among adolescents for greater prevention of HPV-associated oral cancers.

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Human Papilloma Virus (HPV) is the most common sexually transmitted infection [1]. With approxi-

mately 170 different subtypes, the manifestations range from genital warts to precancerous lesions [1]. A few select subtypes, especially 16 & 18, pose significant oncological risk [2]. This risk is evident by higher association with cervical and vaginal cancers in women [2]. In addition, HPV also causes oropharyngeal cancers in both men and women [3]. Over the past few decades, the overall incidence of oropharyngeal cancers has been steadily rising relative to decades past [3]. Common underlying risk factors for developing head and neck cancers include smoking, alcohol and unprotected sex [4]. Interestingly enough, the incidence of HPV-associated cancers now exceeds non-HPV-associated cancers [5]. It is estimated that 70% percent of oropharyngeal cancers in the US are secondary to HPV infections [2].

We believe this rise of HPV-associated oropharyngeal cancers could be attributed to societal sexual behaviors, especially amongst adolescents. Studies show that 50% of adolescents (older than 15 years of age) report sexual activity, with oral sex being more common than vaginal sex [6]. Of teenagers that report virginity, 23% report engaging in unprotected oral sex [7]. Use of condoms in this population is inconsistent. Moreover, condoms only offer partial protection against HPV. It is also important to note that outercourse plays an important role in adolescent sexual activity. Many adolescent virgins report that they have genital contact without the use of condoms, which could aid in transmission [8]. In addition, adolescents tend to have more casual, short term relationships. A recent survey showed that most adolescent relationships last between 4 to 15 months, with the majority residing on the shorter end of the scale. Sexual activity was most likely to occur in the first 2 months of the relationship [6]. Sexually transmitted infections, such as HPV or Trichomonas, often are asymptomatic. Given the proclivity for shorter relationships and lack of symptoms, adolescents often do not take actions to protect their current or future partners.

The HPV vaccine plays a pivotal role in cervical and oropharyngeal cancer, as well as genital wart prevention in the adolescent population. It is recommended as a 2-dose regimen usually given between 6-12 months apart [9]. The starting age is recommended at 11-12 years but can be given till age 26 [10]. There are 3 different types of vaccines each varying on which subtypes are covered: Gardasil (6, 11, 16, & 18), the Gardasil 9 (also cover 31, 33, 45, 52 and 58) and the Cervarix (covers 16 & 18) [9]. The Gardasil-9 is the only vaccine with approval in the United

States that has a significant benefit towards preventing anogenital cancers [9]. Although there are limited studies that demonstrate efficacy of the Gardasil-9 towards oropharyngeal cancers, it is FDA approved for oropharyngeal cancer prevention [10]. However despite these measures, HPV vaccination adherence is still poor. According to the 2017 National Immunization Survey-Teen, only 49% of adolescents were actually up to date on the HPV vaccines [10]. Barriers to the HPV vaccination include lack of healthcare provider recommendation, parents' lack of willingness and knowledge, and the belief that HPV is mainly a "female" disorder [11]. HPV-associated oral cancers confront us with a generational challenge. The increasing incidence of oropharyngeal cancer and increased risk of asymptomatic infections, oral sexual activity, and outercourse seen in the adolescent population pose a delayed public health risk that is most efficiently prevented with the HPV vaccination. Therefore, we need to dedicate our time and efforts towards increasing HPV vaccination education and adherence.

Competing Interest

The Authors have no financial or non-financial competing interests to disclose.

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