Policy on Human Papilloma Virus Vaccinations

Latest Revision

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Purpose

The American Academy of Pediatric Dentistry (**AAPD**) recognizes there is a link between human papilloma virus (**HPV**) and development of oral pharyngeal cancers. This policy is intended to promote the dentist's role in discussing the association of oral cancers with HPV as well as the HPV vaccination for age-appropriate patients.

Methods

This policy was developed by the Council on Clinical Affairs, adopted in 2017,[1] and last revised in 2020.[2] This revision is based on a review of current dental and medical literature. An electronic search was conducted using the PubMed/MEDLINE database using the terms: *HPV vaccines*, *HPV* AND *oral cancer*, *HPV* AND *cancer*, *Gardasil®* AND *prevention of cancer*; fields: all; limits: within the last 10 years, humans, English, birth through age 99. The search returned over 5,296 articles. Papers for review were chosen from this list and from the references within selected articles.

Background

HPV transmission can occur through both sexual and non-sexual contacts; skin-to-skin, skin-to-mouth, oral sex, and sexual intercourse are all potential routes of transmission.[3,4] Persistent infection with high-risk HPV genotypes is associated with anogenital, skin, as well as oral and oropharyngeal cancers (**OOPC**).[5,6] Oropharyngeal (ie, tonsils and base of tongue) squamous cell carcinoma is the most common type of HPV-associated OOPC.[7] HPV accounts for 70% of all OOPC in the US,[8] of which over 90% are caused by HPV 16 strain.[7,9] Other high-risk HPV genotypes implicated in OOPC are types 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, and 68.[5,10] Patients with HPV-associated OOPC generally are younger and healthier than patients with HPV-negative OOPC, with negligible smoking history, which is a shift from the traditional risk factors of tobacco and alcohol abuse.[11]

Vaccines for prevention of HPV infections via subtypes 16 and 18 have been available since 2006.[12] Reduction in prevalence of HPV types 6, 11, 16, and 18 from the prevaccine era to 2015-2018 has been significant among females aged 14 through 19 years (88%) and 20 through 24 years (81%).[13] In sexually-experienced females who reported receiving 1 or more HPV vaccine doses, HPV prevalence decreased 97% among those aged 14 through 19 years and 86% in those aged 20 through 24 years.[13] In females who reported no vaccination, prevalence decreased 87% and 65% respectively, suggesting herd effects.[13] HPV vaccine efficacy against anal and oral infection is high and similar to that against cervical infection.[14] A recent study showed 88% reduction in prevalence in females and males aged 18 to 33 years.[15] No studies show that the HPV vaccine prevents the development of OOPC; however, it is reasonable to postulate the vaccine's potential to do so as the vaccine has been shown to reduce HPV-related oral infections.[16,17] Evidence extrapolated from large epidemiologic studies on HPV vaccine efficacy in reducing risk of vulvovaginal and cervical cancer caused by the same viral strains associated with OOPC further supports this postulate.[18-20]

With regard to vaccine safety, robust data from prelicensure trials and postlicensure monitoring indicate that, other than expected minor adverse effects (eg, fever, injection site reaction, syncopal episode) in adolescents, no serious adverse events or concerns have been identified.[21,22] A history of severe allergic reaction (eg, anaphylaxis) to a component of the vaccine (eg, baker's yeast) or subsequent to a previous dose of vaccine is a contraindication to immunization.[23] Vaccination is not recommended for individuals having moderate or severe acute illness until symptoms improve or during pregnancy.[23]

In 2016, the Centers for Disease Control and Prevention (**CDC**) Advisory Committee on Immunization Practices recommended HPV vaccination at age 11 or 12 years, but it can be given as early as age 9 years.[24,25] For immunocompetent children younger than 15 years, a 2-dose schedule with both doses 6-12 months apart is recommended.[24] For children ages 9 through 14 who received 2 HPV vaccine doses less than 5 months apart or age 15 or older at the time of initial vaccination, as well as for those with immunocompromising conditions, a 3-dose series is recommended.[23,24] The American Academy of Pediatrics updated its HPV vaccination policy in 2017 to reflect the CDC/Advisory Committee on Immunization Practices' recommendations.[25] Despite recommendations from various authorities on the benefits of HPV vaccination, barriers to immunization[25-29] (eg, parental concerns regarding safety, the patient having special needs or not being sexually active, lack of knowledge, belief it is not necessary; lack of provider recommendation) persist.

ABBREVIATIONS

AAPD: American Academy of Pediatric Dentistry. **CDC:** Centers for Disease Control and Prevention. **HPV:** Human papilloma virus. **OOPC:** Oral and oropharyngeal cancer.

Anticipatory guidance for child and adolescent patients includes counseling across a variety of preventive (eg, caries, trauma) and behavioral (eg, diet, tobacco) considerations.[30] Given that dental professionals are already involved in secondary and tertiary prevention and, to a limited extent, in the treatment of OOPC, offering primary prevention in dental clinics seems a logical and clinically-appropriate approach. Provision of an additional avenue for promotion of HPV vaccination is desirable, as evidenced by the persistent resistance towards HPV vaccination and the continued increase in HPV-related OOPC incidence despite increased availability of HPV vaccines.[8] As children and young adolescent patients tend to see the dentist twice yearly and more often than their medical doctor, this provides a window of opportunity for the dental profession to counsel the patient and parent about HPV's link to oral cancer and other HPV-related oral lesions as well as the potential benefits of the HPV vaccine.[31] The dental office could be an additional access point for HPV vaccine delivery.[31-33]

Policy statement

The AAPD supports measures that prevent OOPC, including the prevention of HPV infection, a critical factor in the development of oral squamous cell carcinoma.

The AAPD encourages oral health care providers to

- educate patients and parents on the serious health consequences of OOPC and the relationship of HPV to OOPC.
- counsel patients and parents regarding HPV vaccination in accordance with CDC recommendations as part of anticipatory guidance for adolescent patients.
- routinely examine patients for oral signs of and changes consistent with OOPC.
- follow current literature and consider incorporating other approaches for HPV prevention in their practices to minimize the risk of disease transmission.

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