Relationships Between HPV, Cancer of the Cervix, and Smoking: More Reasons to Convince our Patients to Quit

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Review of: Vaccarella S, Herrero R, Snijders PJ, et al. Smoking and human papillomavirus infection: pooled analysis of the International Agency for Research on Cancer HPV Prevalence Surveys. *Int J Epidemiol*. 2008:1-11.

An association between pre-malignant lesions and squamous cell cancers of the uterine cervix (not adenocarcinoma) and smoking has been recognized for some time. It has been shown in a few studies that there may be an association with smoking and the presence of human Papillomavirus (HPV) infection. One of the most common theories in this regard is that smoking may impair the immune response and interfere with the ability to clear an HPV infection. A confounding variable in this process is the number of sexual partners and how this might be related to smoking and the prevalence of HPV infection. The International Agency for Research on Cancer (IARC) HPV Prevalence Surveys was used to assess the relationship between smoking and prevalence of HPV infection.

In this article, a survey of over 10,500 women over the age of 15 from four continents who had HPV testing, were age stratified and randomly sampled. Information on smoking was obtained and unconditional logistic regression was used to estimate odds ratios (OR) and corresponding 95% confidence intervals (CI) of being HPV-positive by smoking habits, adjusted for age and lifetime number of sexual partners.

Overall, HPV prevalence was 12.5%. The mean age was 41.4 years, varying between 32.9 years in Columbia and 47.8 years in Thailand. After allowing for lifetime number of sexual partners, current or previous smoking was associated with an increased risk of being HPV positive (OR = 1.18, 95% CI 1.01-1.39). Among current smokers, the risk of being HPV-positive increased with increasing smoking intensity, after adjustment for lifetime number of sexual partners, compared with women who had never smoked. The pooled analysis of the surveys showed that current tobacco smoking was associated with a significant, although moderate, increased risk of prevalent HPV infection. Among current smokers, the risk of being HPV-positive increased with increasing number of cigarettes smoked per day. Women who reported smoking more than 15 cigarettes daily had an approximately two-fold risk of HPV positivity as compared with women who had never smoked. Importantly, former smokers did not show a different risk of positivity compared with women who had never smoked.

I think the results of this study give us some very positive ammunition to help get our patients with abnormal Pap tests who smoke to quit. I find it concerning that more women smoke than men. Under the new ASCCP guidelines we are giving our younger patients a chance to clear the HPV virus before rushing to more extensive biopsy or excision procedures such as LEEP. If these young women are smokers, we have a wonderful opportunity to explain to them how important it is for them to stop smoking. It is disconcerting to tell these patients just to come back in 1 year for a repeat Pap test. We

can and we must spend some time to help them understand how quitting will improve their general health, and may also help them clear a virus that could (in some cases) lead to cancer. This information is also useful in older patients, but we may be seeing them in 6 months or sooner for a follow-up depending on the specifics and the current guidelines. This study presented us with an opportunity we should not miss.