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Smoking cessation counseling in women with genital intraepithelial neoplasia

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ABSTRACT

Objective. Cigarette smoking is a risk factor for cervical, vaginal, vulvar, and anal dysplasia. We will study the prevalence of cigarette smoking in patients with genital dysplasia and effect of counseling on smoking cessation.

Methods. All patients with genital dysplasia were screened for smoking history. One clinician provided smoking cessation counseling using the US Department of Health 5 A's technique: ask patients about their smoking status, advise smokers to quit, assess their readiness to quit, assist with their smoking cessation effort, and arrange for follow-up visits. Patients were informed on how smoking may cause worsening of genital dysplasia and increased risk of progression to cancer. Each patient received 2 counseling sessions, but no pharmacological or psychological interventions. Smoking cessation was evaluated by patient self-report via phone or during clinic visits.

Results. From January 2007 to December 2010, 344 patients were referred to our gynecologic oncology clinic for evaluation of genital dysplasia. Patients who were smokers (n = 125, 36%) were counseled to cease smoking in 2 counseling sessions, with 100% compliance for attendance. At study analysis (July 2011), 83 patients still smoke and 40 patients quit smoking (smoking cessation rate of 32%). Caucasian patients (P = .0013) and patients with vulvar dyplasia (P = .411) seemed to smoke more than other races and patients with cervical/vaginal dysplasia respectively.

Conclusion. Smoking cessation counseling for the genital dysplasia patients who smoked was associated with smoking cessation in 32% of the patients.

Introduction

In 2009, the Centers for Disease Control and Prevention reported 18% of women over the age of 18 smoked cigarettes. This rate has remained stable and unchanged over the past 5 years, despite the Healthy People 2010 goal of a smoking rate of 12% [1]. Cigarette smoking is a well-established risk factor for many conditions, including cervical, vaginal, vulvar, and anal dysplasia [2–4]. Acquisition of high risk human papillomavirus (HPV) appears to be independent of smoking, but it has been shown that current cigarette smoking negatively affects the progression of the HPV infection [5]. This effect appears to be dose-dependent, with more pack years and greater smoking intensity associated with more severe dysplasia [6,7]. Even passive smoke exposure may pose a risk [8]. Fortunately, however, these dysplastic damages may be reversible. One study found a significant reduction in the size of cervical lesions after smokers significantly reduced or completely stopped smoking [9]. Other studies have found significantly less risk of anogenital dysplasia in former smokers as compared to current smokers, suggesting recoverable protection with increasing years since last cigarette [10,11].

Despite the overwhelming data linking smoking to genital dysplasia, many smokers are unaware of their increased risk. Among women with an abnormal Papanicolaou smear or current diagnosis of cervical neoplasia, only 58% believed that smoking was a risk factor for her condition [12]. Current smokers tend to hold less positive views of cervical cancer screening and are less likely to be screened than never- or former smokers, despite their increased risk [13,14]. In fact, young cancer survivors may have higher rates of smoking than their counterparts who have never been diagnosed with cancer with the highest prevalence of smoking among cervical cancer survivors [15,16].

In light of this data, considerable effort has been made to educate patients and facilitate smoking cessation. It appears that the higher a patient's perceived vulnerability to getting cancer, the greater is her intention to stop smoking and this may be enhanced by a detailed, coherent explanation of the link between smoking and cervical cancer [17,18]. Researchers have looked at everything from education with visual aids to pamphlets to phone counseling interventions, but few have gone beyond patients' stated intention to stop smoking to document rates of actual smoking cessation [19–21].

Clinicians are well positioned to screen for smoking and educate women about smoking cessation at any point of care. However, when a women presents with genital dysplasia, this is a prime opportunity to provide education and intervention. The clinician can use this opportunity to discuss the detrimental effects of smoking to the patient's

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current diagnosis and provide her with the tools to successfully quit smoking in an effort to possibly change the course of disease progression or recurrence. A recent opinion paper from The American College of Obstetricians and Gynecologists recommended the use of the 5 "As" intervention model for smoking cessation [22]. This evidence-based model has been successfully used by clinicians in general clinic settings to assist in smoking cessation. The 5 A's are: Ask, Advise, Assess, Assist and Arrange and is derived from the US Department of Health [23].

1. ASK: All women should be asked in a systematic way of their current and past tobacco use at every visit.
2. ADVISE: In a strong, clear, and personalized manner, advise women to quit smoking. This is the point at which the clinician should link the risk of progression and possible development of cancer to their smoking habit.
3. ASSESS: Assess the willingness of the patient to quit smoking within the next 30 days.
4. ASSIST: Help the patient with a quit plan by setting a quit date, advising the patient to remove tobacco from the home and work environment, ask them to tell family and friends about their wish to quit smoking and seek their support, and discuss the challenges they may face during their attempt to quit. Provide support through practical counseling and if needed, pharmacologic interventions.
5. ARRANGE: Arrange follow-up to discuss successes and challenges.

Further information can be found at: http://www.surgeongeneral.gov/tobacco/tobaqrg.htm

We are not aware of the usage of this method in women with genital intraepithelial neoplasia. In this study, we evaluated the prevalence of cigarette smoking in women with genital dysplasia seen in a gynecologic oncology clinic. Furthermore, we derived the rate of smoking cessation after counseling using the 5 A's model in this population. No pharmacologic interventions were utilized in this study. The initial effort for smoking cessation is to provide practical counseling and therefore is the focus of the intervention.

Materials and methods

All patients with genital dysplasia who were referred to our gynecologic oncology clinic were screened for smoking history. Demographics data, sexual history and insurance status were collected prospectively as part of our electronic medical record. The number of pack year of smoking was calculated from the number of cigarettes smoked per day multiplied by the number of years smoking. The University Institutional Review Board approved the study.

Patient who smoked were given standard counseling using the 5 A's model. One clinician (JTS) provided the smoking cessation counseling for all patients during two separate sessions. In addition to the 5 A's technique, patients were informed on how smoking may cause worsening of genital dysplasia. This counseling is a part of routine care for women who smoke in our clinical setting. Each patient who smoked received 2 counseling sessions (in the first visit and a follow visit 2–4 weeks later). The first counseling session was provided as standard of care during their initial consultation visit. The entire first session of counseling took about 5 to 11 min for most patients. During this first visit, all women underwent cervical, vulvar, and vaginal colposcopy, to confirm the diagnosis of genital intraepithelial neoplasia. Before leaving the first visit, all women received an appointment for a second visit. Adherence to return for this visit was reinforced with phone call reminders and letter reminders prior to their scheduled appointments. The second counseling session was performed during this second visit which is routinely schedule to discuss the results from any procedures performed during the consultation visit. The second follow-up counseling session was shorter since it was primarily to reinforce the smoking cessation message, and to identify the patient's progress towards cessation if cessation had not been successful. The smoking cessation message included a review of the risk of smoking to their genital dysplasia and other conditions as well as a reassessment of their willingness to quit with reinforcement of their quit plan. No pharmacological or psychological interventions were offered to assist in smoking cessation. To access the success of smoking cessation, information on smoking cessation was obtained via routinely scheduled clinic visits or quarterly phone calls to find out if smoking cessation occurred and how long it took them to quit smoking. Smoking cessation was evaluated through the patients self-report.

Statistical analyses were done using SAS 9.2 (SAS Institute Inc., Cary, NCS). Smokers and nonsmokers were compared using two-sample *t*-test for interval variables such as age and number of lifetime sexual partners, and chi-square test (or Fisher's exact test if the sample size was small) for categorical variables such as race and marital status. These methods were used to compare women who quit smoking to those who did not among those who reported smoking follow-up data. For the women who quit smoking, Spearman correlation was used to find the strength of association between time to quit smoking and age, and Mann–Whitney and Kruskal–Wallis test were used to compare the time to quit smoking to race and marital status. Tests were declared significant if $p<.05$.

Results

From January 2007 to December 2010, 344 patients were evaluated for genital dysplasia in our gynecologic oncology clinic. One hundred twenty five patients were smokers (36%) and counseled to cease smoking at first and a subsequent clinic visit. We had 100% compliance in providing 2 counseling sessions for each patient. At the time of analysis (July 2011), 83 patients still smoke and 40 patients quit smoking, with a smoking cessation rate of 32%. Two patients were lost to follow-up.

Smokers and nonsmokers

Smokers and nonsmokers were of similar ages (Table 1). Smokers were more likely to be White than other races (P = .0013). Nonsmokers tended to have fewer numbers of lifetime sexual partners (P = .0077). When analyzing marital status, smokers and nonsmokers had a similar marital pattern (P = .3439). Smokers were more likely to have vulvar dysplasia than nonsmokers (P = .0411). However, there was no difference in cervical and vaginal dysplasia presence in smokers as compared to nonsmokers.

Table 1
Comparison of smoker and non-smoker.

Characteristic	Non smoker (N = 219) n (%)	Smoker (N = 125) n (%)	p value
Mean age (range)	39.9 (14–83)	40.3 (16–70)	.8027[a]
Race			.0013[b]
White	107 (49)	85 (68)	
African American	109 (50)	39 (31)	
Other	3 (1)	1 (1)	
Mean # lifetime sexual partners (range)	5.5 (1–100)	9.8 (1–150)	.0077[a]
Marital status			.3439[b]
Married	83 (38)	50 (40)	
Divorced	33 (15)	23 (19)	
Single	95 (43)	50 (40)	
Widow	8 (4)	1 (1)	
Dysplasia			
Vulva	64 (29)	50 (40)	.0411[b]
Vagina	31 (14)	16 (13)	.7248[b]
Cervix	59 (27)	32 (26)	.7863[b]

[a] Two-sample *t*-test.
[b] Chi-square or Fisher's exact test.