Introduction

Genital wart is the most common sexually transmitted infection (STI) worldwide.1 This disease is caused by human papillomavirus (HPV) that has approximately 100 types, among them about 40 types are known to cause genital infection.2–3 The prevalence of HPV infection is estimated as 10% – 24.4% among women in different studies.4–5 HPV infection may result in genital warts that are benign tumors with economical burden on the society.6–7 In addition, some types of this virus are associated with anogenital and cervical cancers.8–10 Types 16 and 18 are contributed in about 70% of cervical cancers; whereas, more than 90% of genital warts are caused by types 6 and 11 that are low risk for malignancies. Recent studies show that condom reduces HPV infection.11–12

Demographic information about genital warts as a sexually transmitted disease (STD) and sexual behaviors and risk factors may differ among different geographic, ethnic, racial, and cultural populations.7–8,13–15 Although some studies have been performed about HPV infection in Iranian population, but data about pattern of sexual behaviors and risk factors among Iranian patients are limited.9–10,16 Especially, studies that evaluated males with genital warts are actually few in Iranian population. So, we designed this study to determine demographic information and high-risk sexual behaviors in Iranian male and female patients with genital warts who had been referred to a sexually transmitted diseases clinic in Tehran.

Materials and Methods

In this cross-sectional study, 250 patients with anogenital warts were evaluated. They had been referred to the Sexually Transmitted Diseases Clinic in Razi Hospital from March 2011 through April 2012. Demographic and general information of the patients with genital warts were recorded in the questionnaires. These information are routinely recorded in STD clinic in Iran. However, consent was taken from the patients after explaining the method and objectives of this study. We used SPSS software version 13 for data analysis. We calculated frequency for qualitative data, and also the mean and median for quantitative variables. We used chi-square test for comparing qualitative variables and t-test for quantitative ones. A P-value less than 0.05 was considered as significant.

Results

We evaluated 250 patients with anogenital warts. Demographic and general information of these patients including gender, age groups, marital and educational status, age of marriage, alcohol, and cigarette smoking, pattern of sexual behavior and risk factors, and other STDs were recorded in the questionnaires. These information are routinely asked from the patients and recorded in medical files in STD clinics. These files are anonymous and only have a code. However, consent was taken from the patients after explaining the method and objectives of this study. We used SPSS software version 13 for data analysis. We calculated frequency for qualitative data, and also the mean and median for quantitative variables. We used chi-square test for comparing qualitative variables and t-test for quantitative ones. A P-value less than 0.05 was considered as significant.

Keywords: Genital wart, HPV, human papillomavirus, sexual behavior, sexual risk factors

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Sexual behaviors and risk factors, as well as other STDs in the patients with warts are presented in Table 2. In addition, according to the present study, the mean age of the first sexual intercourse was 20 years; 74% of the patients had started sexual activity between the ages of 15–25 years. Among married patients, the mean age of marriage was 22 years.

Table 1. Demographic and general information of the patients with genital warts

<table>
<thead>
<tr>
<th>Parameters</th>
<th>No (N %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>125 (50 %)</td>
</tr>
<tr>
<td>Female</td>
<td>125 (50 %)</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
</tr>
<tr>
<td>&lt; 20</td>
<td>16 (5.9 %)</td>
</tr>
<tr>
<td>21–30</td>
<td>115 (47.3 %)</td>
</tr>
<tr>
<td>31–40</td>
<td>61 (24.7 %)</td>
</tr>
<tr>
<td>41–50</td>
<td>38 (15.1 %)</td>
</tr>
<tr>
<td>&gt; 50</td>
<td>18 (7.1 %)</td>
</tr>
<tr>
<td>Marital condition</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>62 (24.8 %)</td>
</tr>
<tr>
<td>Married</td>
<td>171 (68.4 %)</td>
</tr>
<tr>
<td>Divorced</td>
<td>9 (3.6 %)</td>
</tr>
<tr>
<td>Widow/Widower</td>
<td>8 (3.2 %)</td>
</tr>
<tr>
<td>Educational level</td>
<td></td>
</tr>
<tr>
<td>Illiterate or preliminary school</td>
<td>19 (7.6 %)</td>
</tr>
<tr>
<td>Guidance school</td>
<td>48 (19.2 %)</td>
</tr>
<tr>
<td>High school</td>
<td>109 (43.6 %)</td>
</tr>
<tr>
<td>University</td>
<td>74 (29.6 %)</td>
</tr>
<tr>
<td>Habits</td>
<td></td>
</tr>
<tr>
<td>Alcohol</td>
<td>14 (5.6 %)</td>
</tr>
<tr>
<td>Cigarette smoking</td>
<td>30 (12 %)</td>
</tr>
<tr>
<td>Marriage age (years)</td>
<td></td>
</tr>
<tr>
<td>&lt; 20</td>
<td>73 (39 %)</td>
</tr>
<tr>
<td>21–25</td>
<td>73 (39 %)</td>
</tr>
<tr>
<td>26–30</td>
<td>29 (15.4 %)</td>
</tr>
<tr>
<td>&gt; 30</td>
<td>13 (6.6 %)</td>
</tr>
</tbody>
</table>

We found a statistically significant association between male gender and number of partners (P = 0.001). According to our study, all of the cases with five or more than five sexual partners were men. Using condom was slightly higher in educated patients; however, this difference was not statistically significant (P = 0.967). Although men had started sexual activity in younger age, but we cannot show statistically significant difference between gender of patients and age at the time of first intercourse (P = 0.117).

Discussion

This study represents general information and some high risk behaviors in the patients with genital warts. According to our results, the number of male and female patients was equal.

In our study, the highest frequency was belonged to age groups 20 – 30 (47.3 %) and then 31 – 40 (24.7 %) years old. Similarly, in the other studies these age groups have the highest prevalence. For example, in a study by Ralph, et al. the prevalence was highest among women aged 20 – 24 years and rates for both sexes decreased gradually with age thereafter.

Various studies have been designed for determining the prevalence and risk factors of HPV infection and psychologic and economic burden. For instance, in a survey on genital warts in the age groups of 18- to 59-year-olds in the United States, 11.4% of the patients reported educational level of high school and university education, and 7.3% reported the first sex younger than 17 years of age, 17.9% reported more than five sexual partners lifetime; whereas, in our study that was among 250 males and females attending to a STD clinic, 73.2% of the patients reported high school or university education, 14% reported the first sexual intercourse at younger than 15 years of age, and 28.3% had five or more than five partners, so far. The reason for this difference in the American and Iranian populations may be that the American survey was performed in a general population and our study was among the patients attending the STD clinic.

However, the median age at the first sexual experience differs in various populations according to the cultural and religious beliefs. For instance, in an Indian study, the mean age of starting sexual activity was 13 years and in an American study it was reported as 17 years. In our study, 14% of our participants had started sexual intercourse before 15 years of age and the mean age for starting sex was 20 years; whereas, the mean age for marriage was 23 years. It indicates that many people start sexual activity before marriage and even in early adolescence. These findings show that sexual health education in our country should be started for guidance and high school students and several years before marriage.

There are some investigations about the association of smoking and HPV infection; only 8% of our patients were cigarette smokers. In a British study on women, 9.9% of the patients had ever smoked.

Many researches have been carried out on prevention of HPV infection by using condom. Only 8% of our patients used condom in their all or most sexual intercourses. In a study in Hong Kong, 66.24% of men with warts reported using condom in their intercourses. It seems that safe sex should be considered and educated to high-risk groups.

In conclusion, in our studied population, genital wart in men is as common as women, married and singles, and mostly involves younger people. High-risk sexual behaviors and unsafe sex make them at risk for HIV infection. Sexual health education should be considered in high-risk groups. Further studies with larger sample size and surveys on general population are needed to achieve more information about various aspects of genital warts and sex-
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