Predictors of timely attendance for colposcopy following an abnormal Pap test among Hispanic women on the Texas-Mexico border

Thelma Carrillo, 1, Jane Montalbateg, 2, Tara Perkins, 3, Christina Gutierrez, M.S., 1, Kayla Castañeda, 1
Harvey Greenberg, 1; Salvador Saldivar 1; Leonid Fradkin, 6; Pierre Lane, 4; Felipe Castro, 3; Michael Scheurer, 2; Michele Follen, 6; Zuber D. Mulla 1

1. Dept. of OB/GYN, Texas Tech University H.S.C., El Paso, TX; 2. Baylor College of Medicine, Houston, TX; 3. University of Texas at El Paso, El Paso, TX; 4. British Columbia Cancer Research Centre, Vancouver, Canada; 5. UT-Houston, Houston, TX; 6. Department of Obstetrics and Gynecology, Brookdale University Hospital and Medical Center, Brooklyn, NY;

Abstract

Introduction: Women with abnormal Pap smears are at an increased risk for developing cervical cancer. Appropriate screening with follow up and interventions should prevent the vast majority of deaths resulting from cervical cancer. However, timely follow-up to colposcopy following an abnormal Pap smear is a common problem in many populations, especially ethnic minorities and the medically underserved. The purpose of this study is to examine patient characteristics that are associated with an appropriate interval between an abnormal Pap smear and colposcopy.

Materials and Methods: We analyzed data on 362 Hispanic patients attending a colposcopy clinic at an academic medical center in El Paso, Texas. Non-Hispanics were excluded from the current analysis. The dichotomous outcome variable was a timely follow-up to an abnormal Pap smear. Subjects whose interval between the date of their abnormal Pap smear and the date of their colposcopy was 90 days or less were classified as having an optimal interval. Five risk factors for an optimal interval were evaluated, including Hispanic acculturation based on language use as assessed by the Marin Short Acculturation Scale for Hispanics (SASH) and educational status. Univariable analyses with the use of the chi-square test preceded the multivariable analysis. A generalized linear model was fit using a binomial distribution and log link. Risk ratios (RR), 95% confidence intervals (CI), and P-values were calculated from this log-binomial model.

Results: After excluding non-Hispanics and records with missing values for the variables under study, a total of 207 records were available for the analysis. Overall, 226 women (62.4%) had an optimal interval. The less acculturated subjects were more likely to be 30 years of age or older at the time of enrollment in the study, less likely to have some college education and more likely to have had an optimal interval to colposcopy than the more acculturated subjects. Two of the five RR's were statistically significant: Women who were 30 years of age or older were 22% more likely than women younger to have an optimal interval than younger women after adjusting for the remaining variables (RR = 1.22, 95%CI: 1.03-1.44, P<0.05) and the less acculturated were 29% more likely to have had an optimal interval.

Conclusions: Women ≥30 years of age were more likely than younger women to have a timely follow-up to their abnormal Pap smear and women who were less acculturated were more likely, to have had an optimal interval between their Pap smear exam and their follow-up colposcopy.

Introduction

• Lower rates of follow-up after abnormal cervical cytology (Pap smear) in racial and ethnic minorities may contribute to the higher cervical cancer mortality observed in these groups. [1]. Follow-up care typically includes colposcopy [2], a procedure that involves close examination of the cervix. According to the Breast and Cervical Cancer Services (BCCS) Program, the interval between initial screening and diagnosis (typically made with the aid of colposcopy) should be ≤30 days for ≥75% of women with abnormal results [3].

• The objective of this preliminary analysis was to identify factors associated with an optimal interval between the time of an abnormal Pap smear and the date of the colposcopy.

Table 1. Characteristics of 362 Hispanic Women who Had an Abnormal Pap Smear. Data Are Presented by Acculturation Status as Measured by the Marin Short Acculturation Scale for Hispanics (SASH).

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Less Acculturated N=207 Number (%)</th>
<th>More Acculturated N=155 Number (%)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age&lt;30 years</td>
<td>135 (65.2)</td>
<td>62 (40.0)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Less than high school</td>
<td>90 (43.5)</td>
<td>10 (6.5)</td>
<td>0.65</td>
</tr>
<tr>
<td>High school graduate or GED</td>
<td>58 (28.0)</td>
<td>22 (14.2)</td>
<td>0.65</td>
</tr>
<tr>
<td>Some college or higher</td>
<td>59 (28.5)</td>
<td>123 (79.4)</td>
<td>0.38</td>
</tr>
<tr>
<td>Smoked at least 10 cigarettes in lifetime</td>
<td>55 (26.6)</td>
<td>35 (22.6)</td>
<td>0.65</td>
</tr>
<tr>
<td>Immediate family member had cervical cancer</td>
<td>17 (14.5)</td>
<td>16 (12.4)</td>
<td>0.63</td>
</tr>
<tr>
<td>Optimal interval (≤90 days) between an abnormal Pap smear and colposcopy</td>
<td>71 (60.7)</td>
<td>91 (70.5)</td>
<td>0.10</td>
</tr>
</tbody>
</table>

Materials and Methods

• Data were analyzed using SAS 9.3 software (SAS Institute, Inc., Cary, North Carolina). A sample of 412 women was initially available for analysis. After excluding non-Hispanics and records with missing values for the variables under study, a total of 362 records were available for analysis.

• The dichotomous outcome variable was a timely follow-up to an abnormal Pap smear. Subjects whose interval between the date of their abnormal Pap smear and the date of their colposcopy was 90 days or less were classified as having an optimal interval. Subjects whose interval was greater than 90 days were classified as not having an optimal interval.

• Univariable analyses with the use of the chi-square test preceded the multivariable analysis. A generalized linear model was fit using the GENMOD Procedure. A binomial distribution was specified with a log link. Risk ratios (RR), 95% confidence intervals (CI), and P-values were calculated from this log-binomial model.

Results

Figure 1. Adjusted Risk Ratios for an Optimal Interval (≤90 Days) Between the Date of an Abnormal Pap Smear and Date of Colposcopy in 362 Hispanic Women.

Women who were ≥30 years of age were 22% more likely than younger women to have an optimal interval between the time of their abnormal Pap smear and the performance of the colposcopy (RR=1.22, 95%CI: 1.03-1.44, P=0.020).

Particularly noteworthy is the statistically significant result that the least acculturated women, i.e. women who think, read and speak more in Spanish than English, were more likely to receive a colposcopy exam for a diagnosis of an abnormal Pap result within 90 days. Although other studies have also found that older women are less likely to default a colposcopy [4, 5], our known positive association between less acculturation and timeliness of colposcopic evaluation among Hispanic women on the Texas-Mexico border has not been reported in the literature.

The favorable association we observed between the less acculturated patients and timely receipt of colposcopic evaluation will be further studied. In future studies, we will conduct qualitative studies among participants who gave us permission to contact them in the future so that we can learn more about the life experiences of Hispanic women living on the border that would enable some to seek timely care for cervical cancer prevention, while contributing to others’ delay of care, or to not seek it at all.

Cited References


(TUHSRC BRB: Development and Application of a Multiparametric Digital Colposcope and Probe Algorithm for Detection of Cervical Intraepithelial Neoplasia, 11-230)