

## Cervical Cancer Screening in Patients with Total Hysterectomy in a Diagnostic Center at Mexico City

### Abstract

**Background:** The aim of this study was to outline the Pap smears rate done in women with total hysterectomy, sent to an urban diagnostic center that attends Mexican Government workers in the *Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado* (ISSSTE: State's Employees' Social Security and Social Services Institute) at Mexico City. **Methods:** It was a retrospective study on Pap smear reports taken in 2017. The reports came from users of four family medicine clinics and a general hospital's gynecology service. Demographic facts, instruments for collection, kind of insurance (ISSSTE-insurance or non-insurance), and total hysterectomy history were evaluated. **Results:** From 4989 reports, 600 (12%) had a total hysterectomy history. In the patients with ISSSTE-insurance, 586 of 4618 (12.68%) had a Pap smear whereas in the patients with non-insurance, only 14 of 371 (3.7%) had it, and this difference was significant ( $P < 0.00001$ ; OR 3.7, 95% IC 2.15-6.36). **Conclusions:** Although Pap smear is not indicated in women with total hysterectomy, this study is still carried out frequently.

**Keywords:** Cancer, cervical cancer, hysterectomy, pap smear, screening

### Introduction

Cervical cancer is still a major cause of morbidity and mortality in Mexico.<sup>[1]</sup> Because it is a disease with identifiable pre-invasive lesions,<sup>[2,3]</sup> its timely detection through diverse screening studies is feasible.<sup>[2,3]</sup> The use of these different screening methods depends on the organization of the local health system and the resources available.<sup>[2,3]</sup> Because the material resources to identify cervical preinvasive lesions can consume large amounts of the institutional budget,<sup>[4,5]</sup> it is essential to make screening more effective and efficient.

In Mexico, there are specific Government guidelines for cervical cancer screening.<sup>[6]</sup> However, our empirical impression is that these guidelines are not followed truly; and, there are patients with total hysterectomy who undergo regular Pap smears screening. Because there are no studies on this regard, we decided to outline the Pap smears rate done in women with total hysterectomy.

### Materials and Methods

The department of Pathology at the "Hospital General Tacuba" is a diagnostic

reference center for Pap smears taken in the units of the *Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado* (ISSSTE: State's Employees' Social Security and Social Services Institute; medical facilities of the Mexican government to their workers) in the Western part of Mexico City. The Pap reports analyzed were those safeguarded in the department of Pathology. It was a descriptive research, with a case-control analysis, on the Pap reports taken during 2017 in four family medicine clinics and in a general hospital gynecology service. The study's protocol was approved by the institutional research and ethics committees (# 659.2018).

### Population

The Pap smears were taken opportunistically from the insured (ISSSTE workers, pensioners, or beneficiaries) and in non-insured patients (because this is a priority service in Mexico). In the units where cervical cytology was done, identity and demographic data were recorded. In addition, reproductive history, collection instrument used, study regularity, and total hysterectomy history were documented. The cytology and their report were received in

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the pathology service, registered, processed, and diagnosed. Those reports with a history of supra-cervical hysterectomy, illegible, and incomplete data were excluded.

### Analysis

With the information reached, we assessed Pap smears rate done in women with total hysterectomy, and whether the Pap smears regularity was related to their medical insurance (ISSSTE-insurance or non-insurance). Data were analyzed with the Pearson's  $\chi^2$ ; the statistic program OpenEpi version 3 (Dean AG, Sullivan KM, Soe MM. OpenEpi: Open Source Epidemiologic Statistics for Public Health, USA, [www.openepi.com](http://www.openepi.com)) was used. All *P* values <0.05 were considered statistically significant.

### Results

Of 5,617 Pap smear reports evaluated, we obtained complete information from 4,989 reports. From these 4,989 reports, there were 600 cases with a history of total hysterectomy (12%). Active workers were the most frequent group in which the Pap smear was taken (*n* = 391, 65.1%), aged between 50 and 59 years (*n* = 259, 43.1%) [Table 1].

The instrument most frequently used was the Cervex-Brush® (*n* = 374, 62.3%), and the study was done most often with a regularity of ≤1 year (*n* = 238, 39.6%); Table 1. In the ISSSTE-insurance patients, the Pap smear history was more frequent (586 of 4,618 = 12.68%) than in the non-insurance patients (14 of 371 = 3.7%), with significance: *P* <0.00001; OR 3.7, 95% CI 2.15–6.36.

### Discussion

Our study recognized that women with hysterectomy underwent the Pap smear frequently. However, this situation is not exclusive to Mexico; thus, in Korea and USA it was found that screening for cervical cancer is also frequent in women without a uterine cervix.<sup>[7,8]</sup>

We notice in the sample assessed, the instruments most used to collect the Pap smear are those designed for the cervix anfractuous characteristics. It is important to remember that material resources used to identify cervical pre-invasive lesions can consume huge amounts of the institutional budget.<sup>[4,5]</sup>

Similar to other studies this one has limitations. It was a retrospective study in an urban area and there is no information about personal cervical cancer history. However, our research is valued since it assessed a large number of patients. And finally, there are no previous similar studies in Mexican women with total hysterectomy.

Concluding, although Pap smear is not indicated in women with total hysterectomy, this study is still carried out frequently.

**Table 1. Features of patients with hysterectomy (*n*=600)**

Features	<i>n</i>	%
Age (years)		
<30	3	0.5
30-39	14	2.33
40-49	112	18.66
50-59	259	43.16
60-69	156	26
>69	56	9.33
Patient status		
Active workers	391	65.16
Beneficiaries	182	30.33
Pensioners	13	2.16
Non-insured	14	2.33
Collecting instrument		
Cervex-Brush®	374	62.3
Endocervical brush	201	33.5
Cervex + Endocervical brush	17	2.83
Wooden Ayres spatula	8	0.33
PCR for high-grade HPV	183	30.5
Pap-smear use regularity		
≤1 year	241	40.16
2-3-years	151	25.16
>3-yeras	66	11
First time	142	23.66
Pap-smear results		
Negative	68	11.34
Inflammatory	530	88.34
VIN1	1	0.16
ASCUS	1	0.16

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### Conflicts of interest

There are no conflicts of interest.

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