

Comportamiento de las alteraciones citológicas en mujeres atendidas en una IPS de la ciudad de Medellín

Cytological alterations behavior in women treated at an IPS in the city of Medellín

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Abstract

Objective: To analyze the characteristics related to the diagnosis of cancer of the patients who consult an IPS in the city of Medellín.

Methodology: Analytical observational study. The population consisted of all the women treated at the IPS Unidad Video Diagnóstica de la Mujer, an institution dedicated to performing diagnostic confirmation of women with altered cytologies. All the records of the institution's database corresponding to the women who consulted during the period 2012-2017 were analyzed, a total of 55,655 women.

Results: The records of 55,655 users were analyzed, the median age was 40 years (RIQ 19) and 66.1% (36,812) belonged to the subsidized regime. The main indication for performing colposcopy was cytological alterations with 89.8% (49984) and the most frequent was LIEBG 35.3% (19649). The main cancer diagnosed was squamous cells with 0.5% (284) and the associated factors were residing in the Valle de Aburrá (OR 0.60 IC 0.42-0.84) and the LIEAG cytology result (OR 3.31 IC 2.22-4.94).

Conclusions: A cervical cancer prevalence of 7.8 was found for every 1000 patients who consulted the IPS.

Keywords: Cervix uteri, uterine cervical neoplasms, precancerous conditions, cytology, squamous intraepithelial lesions of the cervix.

Resumen

Objetivo: Analizar las características relacionadas con el diagnóstico de cáncer de las pacientes que consultan una IPS de la ciudad de Medellín.

Metodología: Estudio observacional analítico. La población fueron todas las mujeres atendidas en la IPS Unidad Video Diagnóstica de la Mujer, institución que se dedica a realizar confirmación diagnóstica de mujeres con citologías alteradas. Se analizaron todos los registros de la base de datos de la institución correspondientes a las mujeres que consultaron durante el período 2012- 2017, un total de 55655 mujeres.

Resultados: Se analizaron los registros de 55655 usuarias, la mediana de edad fue de 40 años (RIQ 19) y el 66.1% (36812) pertenecen al régimen subsidiado. La principal indicación para la realización de la colposcopia fueron las alteraciones citológicas con un 89.8% (49984) y más frecuente fue el LIEBG 35.3% (19649). El principal cáncer diagnosticado fue el escamocelular con 0.5% (284) y los factores asociados fueron residir en el Valle de Aburrá (OR 0.60 IC 0.42-0.84) y el resultado de citología LIEAG (OR 3.31 IC 2.22-4.94).

Conclusiones: Se encontró una prevalencia de cáncer de cérvix de 7.8 por cada 1000 pacientes que consultan en la IPS.

Palabras claves: Cuello del útero; neoplasias del cuello uterino; lesiones precancerosas, citología; Lesiones intraepiteliales escamosas de cuello uterino.

1. Introduction

According to Globocan, in the 2018 report, globally breast cancer remains the first in incidence with 2088849 (11.6%) cases, cervical cancer ranks eighth with 569847 (3.2%) and a mortality of 311365 (3.2%) cases (1). In the world, there are about 500,000 new cases of cervical cancer, the highest prevalence in 5 years has occurred in Asia, Africa, and Europe, followed by Latin American countries with 158392 cases (1); in South America, Brazil occupies the first place (301031) and Colombia the third (52659) with the highest number of cases.

In Colombia, incidence is 12.6%, mortality 14.4% and prevalence 14.9%. According to the estimates set forth in the Ten-Year Plan for cancer control in Colombia 2012-2021, cervical cancer continues to be, together with breast cancer, the two main cancers in terms of prevalence and mortality (2).

For cervical cancer diagnosis, the Papanicolaou test continues to be the test used for prevention and early detection (2). In 2012, the American College of Obstetricians and Gynecologists (ACOG), the American Cancer Society (ACS) and the U.S. Preventive Services Task Force (USPSTF) issued new guidelines for its use, such as not performing it on women under 21 years of age, regardless of the onset of sexual activity and maintaining a screening interval of 3 years for women aged 21-30 years (3). In Colombia, Papanicolaou screening programs seek early detection of possible pre-neoplastic or neoplastic alterations from 25 to 69 years of age with the 1-1-3 scheme (4) and, depending on the results, diagnosis is completed by colposcopy (5). In spite of the programs and their diffusion, the CDC analyzed data from the Behavioral Risk Factor Surveillance System (BRFSS) (2000-2010) and among women aged 22-30 years, 9.0% reported that they had never had a Pap smear test (3); in Colombia it is reported that 66.5% have had a Pap smear once a year, 6.4% every 3 years and 7.7% once in their lifetime (6).

Among the risk factors for this cancer are family cancer pathologies, sexual relations before the age of 17, number of sexual partners, cigarette smoking, among others (7), age is another risk factor, studies report that the highest percentage of patients for squamous cell carcinoma were between 40-49 years old and adenocarcinoma between 60-69 years old (8).

In a study carried out in the city of Tuluá, they identified the prevalence of Pap smear alterations in 12.5%, with LGIEL (low grade intraepithelial lesions) being the most frequent alteration with 8.2% (9). Doris B (7) reports ASC-US (Atypical Squamous Cells of Undetermined Significance) and LIEBG as the most frequent alterations (3.5% and 4.5%).

Difficulties are still observed in the follow-up, diagnosis, and treatment of precancerous and cancerous lesions (5). In one study, 33% of the women with altered cytology had not had an appropriate follow-up, especially the younger ones (10). In Colombia, a study showed that 27% of women with HGIEL had not had a definitive diagnosis or had not received treatment for several reasons (administrative and cultural) (11).

The knowledge of the associated factors and the behavior of cytological and histological alterations in women that do their Pap smears, and their follow-up are very important, because they allow guiding actions that make possible a better management, improving the opportunity to confirm the diagnoses and helping to reduce morbimortality.

It is expected that the results of this research will provide knowledge about the characteristics of patients who consult an IPS in the city of Medellín and how the diagnosis of cancer behaves in these patients. The objective was to analyze the characteristics related to the diagnosis of cancer in patients who consult an IPS in the city of Medellín.

2. Materials and methods

Analytical observational quantitative study. The population consisted of the total number of women attended at the IPS Unidad Video Diagnóstica de la Mujer during the period 2012- 2017, an institution dedicated to performing diagnostic confirmation of women with altered cytology affiliated to the contributive and subsidized health regimes. For the collection of the information, the research ethics committee of the Health Sciences School of the UPB was approved, as stated in minute No. 5 of April 24, 2017.

The information was obtained from the institution's database; all the patients who consulted during this period were taken, a total of 55,655 women. Variables such as: age, residence, cytology results, date, indication and results of colposcopy, biopsy and biopsy results were analyzed, and to calculate the timeliness of diagnosis, the time between cytology and colposcopy was calculated. The analysis of the information was performed in SPSS 24.0 (Inc. Chicago, IL).

A frequency distribution was made for qualitative variables (residence, age groups, cytology result, colposcopy result, biopsy result, type of cancer), expressed as absolute and relative frequencies, and for quantitative variables (age, time), after testing for normality, summary and dispersion measures were calculated, expressed as mean and standard deviation, or median and interquartile range. For the bivariate analysis, cancer diagnosis was explored with age groups, area of residence, opportunity of diagnosis, cytological alterations, colposcopy result (3); through the chi-square test, the OR was calculated with its confidence interval (95% CI) and significance level (p-value). A multivariate logistic regression model was performed for the cancer type variable (squamous cell and adenocarcinoma). The variables that met the Hosmer Lemeshow criterion ($p < 0.25$) were included in the model, and the adjusted ORs were estimated with the model coefficients and their respective CI and p-value.

3. Results

The records of 55655 users who consulted in the institution between the years 2011 and 2017 were analyzed. The Me (median) age was 40 years (RIQ 19), 66.1% (36812) belong to the subsidized regime, 68.3% (38000) reside in the Valle de Aburrá (See Table 1).

Table 1. Demographic characteristics of women consulting in an IPS in Medellín

	N=55655	
	n	(%)
Age (Me P25-75)	40	31-50
Age groups		
< 40	28166	50.6
41-50	13873	24.9
51-60	9697	17.4
61-70	3237	5.8
>71	682	1.2
Health system		
Subsidized	36812	66.1
Contributed	18694	33.6
Private	149	0.3
Area of residence		
Valle de Aburrá	38000	68.3
Oriente	3768	6.8
Urabá	3449	6.2
Southwest	3008	5.4
North	2516	4.5
West	1520	2.7
Northeast	1458	2.6
Bajo Cauca	1240	2.2
Magdalena medio	590	1.1
Another department	106	0.2

The main indication for colposcopy was cytological alterations with 89.8% (49984), the most frequent cytological alteration was LGIEL 35.3% (19649), the main cancer diagnosed was squamous cell cancer with 0.5% (284). The opportunity for access to colposcopy had a mean of 40 days (RIQ 23 - 75); the greatest opportunity was observed between 0 and 60 days, in 67.6% (37601) of the users (See Table 2).

Table 2. Histological and clinical characteristics of the women who consulted the IPS in Medellín.

	N=55655	
	n	%
Indication		
Cytological alteration	49984	89.8
Clinical	2228	4
Control	3443	6.2
Cytology result		
LGIEL	19649	35.3
ASC-US	19578	35.2
Negative	5730	10.3
HGIEL	3745	6.7
ASC-H	3201	5.8
Mixed	989	1.8
Carcinoma	102	0.2
Adenocarcinoma	29	0.1
Colposcopy 1 result		
Adequate	49313	88,6
Inadequate	6330	11.4
Complete	12	0
Colposcopy 2 result		
Satisfactory	47618	85.6
Unsatisfactory	8037	14.4
Colposcopy 3 result		
Negative	41851	75.2
Grade I	11016	19.8
Grade II	2788	5
Type of cancer		
Negative	26318	47.3
Not applicable	20004	35.9
CIN I	6470	11.6
CIN II	1485	2.7
CIN III	944	1.7
Squamous cell	284	0.5
Adenocarcinoma	150	0.3
Opportunity (Me P25-75)	40	23-75
Colposcopy opportunity		
0-60	37601	67.6
61-120	11570	11.7
>120	6484	11.7

Source: own

LGIEL: low grade intraepithelial lesions, HGIEL: high grade intraepithelial lesion, ASC-US: Atypical Squamous Cells of Undetermined Significance, ASC-H: Atypical Squamous Cells of High significance

In the analysis performed, the most strongly associated factors with squamous cell cancer were: residing in the Aburrá Valley with P: 0.003 (OR 0.60 CI 0.42-0.84), the HGIEL (high grade intraepithelial lesions) cytology result with P: 0.000 (OR 3.31 CI 2.22-4.94), the opportunity between 0 and 60 days with P: 0.008 (OR 0.55 CI 0.37-0.8) and the result of colposcopy 3 of colposcopy with a P: 0.000 (OR 3.79 CI 2.66-4.38) (See Table 3).

Table 3. Associated factors with the diagnosis of cancer among women who consulted an IPS in Medellín

	OR (CI95%) *	value p	OR adjusted (CI95%) †	value p
Age < 40 years old	4.37 (3.44 - 5.56)	<0.000		
Age 41 - 50 years old	2.52 (2.91 - 4.25)	< 0.000	3.09 (2.30-4.16)	0.000
Age 51 - 60 years old	4.41 (3.5 - 5.5)	<0.000	4.99 (3.69-6.75)	0.000
Age 61 - 70 years old	8.63 (6.17-12.05)	<0.000	7.03 (4.88-10.12)	0.000
Age > 71 years old	0.81 (0.65 - 1.00)	< 0.005	13.5 (8.44-21.6)	0.000
Zone	1.63 (1.35 - 1.98)	<0.000		
Adenocarcinoma	252.7(116.8-546.9)	<0.000	14.9 (4.9-45.4)	0.000
AGCNOS	3.15 (2.38-4.17)	<0.000	3.08 (1.8-5.1)	0.000
ACSH	1.86 (1.35-2.54)	<0.000		
ASCUS	0.13 (0.09-0.19)	<0,000	0.35 (0.2-0.61)	0.000
Carcinoma	46.23(29.31-72.94)	<0.000	5.21 (2.38-11.4)	0.000
HGIEL	5.96 (4.84-7.35)	<0.000	0.478 (0.29-0.78)	0.003
LGIEL	0.23 (0.17-0.31)	<0.000	0.427 (0.25-0.71)	0.001
Mixed	8.23 (6.5-11.05)	<0.000		
Negatives	0.55 (0.37-0.82)	<0.000		
Colposcopy result Grade I	0.52 (0.39-0.70)	<0.000	4.24 (2.91-6.17)	0.000
Colposcopy result Grade II	54.47 (44.02-67.41)	<0.000	75.69 (54.6-104.8)	0.000
Colposcopy result Negative	0.06 (0.04-0.8)	<0.000		
* Bivariate analysis,				
† Multivariate analysis				

Discussion

The prevalence of cervical cancer is 7.8 per 1000 patients consulting at the IPS Unidad Video Diagnóstica de la Mujer; worldwide, for the year 2018, according to Globocan it was 385540 cases and in Latin America 504241 cases; the country where more cases occur is in China with 78136 cases (1). The cases of uterine cancer in the world have not decreased significantly, in the study of Arzuaga (12) for the year 2008 the occurrence was 529828 cases, but they were higher in African countries.

Cytological programs seek to detect lesions that are precursors of neoplasia in order to achieve timely treatment, thus reducing morbidity and mortality from this cause (13). These cytological alterations occur at various ages

and this is seen in what is reported in the literature: in the present study a Me of 40 years was found in patients who consulted for a colposcopy when presenting an altered result in their cytology; in other studies the ages are varied, Yanez (14) reported that 52.8% of women in Quito who had alterations of the cervix were older than 50 years (41.6%), followed by the group of 41 to 50 years (25.5%); In Peru, a study reported a Me of 36 years, the age group that presented more cytological alterations was 25 to 33 years old with 31.7% (15); in a study where a group of women with positive Papanicolaou was compared to a group without it, the users between 25 and 35 years old represented 83.1% and 62.7% respectively (16); and Cardona (10) the prevalence of low grade IEL and ASC-US was higher in adolescents, high grade IEL in those older than 64 years old.

Another factor related to cervical cancer are cytological alterations, of which in the participants of the present study, the most frequent were LGIEL 35.3%, ASCUS 35.2 % and HGIEL 6.7%, contrary to the following studies that the main alteration was ASCUS followed by LGIEL: the study of Cardona (10) found an overall prevalence of 8.5%, the main one was ASCUS 3.2%, then LGIEL 1.9% and HGIEL 0.9%; in the study of Ossa (11) the prevalence of preneoplastic lesions was 4.8% and they were presented as follows: ASC-US, 3.0% was LGIEL and 0.5% HGIEL; for Arango (15) the main alterations were ASCUS 33.1%, LGIEL 28.7% and HGIEL 14%; for Grisales (17) the Main alteration ASCUS 10%, LGIEL 3.9% and HGIEL 1.9%. These alterations should be monitored due to the risk of progression added to other risk factors to cervical dysplasia if the adequate follow-up is not done.

The treatment of the pre-invasive lesions presented depends on the age, the desire for future pregnancies, the location and extension of the lesion, the surgical risk and the ease of follow-up of the user, with controls every 6 months during the first two years (18), to evaluate the progression. In the present study, CIN II presented 2.7% and CIN III 1.7%; in another investigation with children under 25 years of age, CIN II/III presented between 15 to 20 years 18/20, and from 21 to 25 years 40/47 (19), and in the study of Sotomayor (14) CIN III presented in 33.6% and in a higher percentage in women under 49 years of age (32.9%). The main cancer diagnosed in this study was squamous cell cancer 0.5%, being the one with the highest incidence in Benítez's studies with women from Manizales (20).

Yanez reported that in women over 50 years of age there is more invasive squamous cancer CIN I and III (14), similar to the present study where it is

observed that with increasing age, the risk of developing cancer increases. In a study carried out in Peru, cervical carcinoma occurred in women over 65 years of age (15), contrary to another study, where age between 25 and 55 was a protective factor for cervical lesions (OR 0.3432 CI 0.1451 - 0.8117] (16).

The related factors for cervical cancer are varied, some of them are: having vaginal intercourse during menstruation (RR=2.96) or anal intercourse (RR 3.03) (21), having 2 or more sexual partners, first pregnancy at age 18 or before, cigarette smoking, initiation of sexual intercourse before age 17 (22), and use of oral contraceptives (23). The above sexual behaviors are frequent in the current culture of adolescents and young adults (24), and added to the reported insufficient knowledge that young women have about cervical cancer prevention (25), imply higher risks for cervical cancer and undetected early detection. However, it is worth clarifying that only a good level of knowledge regarding cervical cancer screening does not fully guarantee preventive behaviors/practices, as evidenced in Luna's study (26), where 80% of a group of Peruvian women had a high-intermediate level of knowledge, but only 44% reported correct practices regarding cervical cytology; This evidences what Baezconde and collaborators (27) stated, that to impact cervical cancer in Latin America requires an understanding of the systemic, personal and cultural barriers in each country.

A significant association was found between squamous cell cancer and residing in the Aburrá Valley, an association that would have to be analyzed in greater depth to determine if it is attributed to sociodemographic characteristics of the population, as in the study of Augusto de Melo where an association was found between altered cytology and a low educational level and belonging to the Afro-descendant ethnic group(28); or if there is a higher proportion of other risk factors such as oncogenic HPV (human papillomavirus), taking as an example the study of Melo and collaborators (29), where of the total number of university women with altered cytology, 24.3% presented high-risk HPV.

«The main cancer diagnosed in this study was squamous cell cancer 0.5%, being the one with the highest incidence in Benítez's studies with women from Manizales.»



This study evaluated the timeliness of diagnosis, finding that 67.6% of the diagnoses were made within the time stipulated for the cervical cancer screening program in Colombia (<60 days) (30); and although a statistically significant association was found between squamous cell cancer and having had the diagnosis between 0-60 days (p: 0.008, OR 0.55 CI 0.37-0.8), this only demonstrates the timeliness in establishing a diagnosis of cancer by colposcopy after an altered cytology result, in the IPS that participated in the study.

To conclude, we found a prevalence of cervical cancer of 7.8 per 1000 patients consulting at the IPS and pap smear as a cytology program for the detection of lesions precursors of neoplasia was the main indication for colposcopy, which together with living in the Aburrá Valley and the opportunity behave as protective factors for timely treatment, reducing morbidity and mortality.

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