Research article

ASSOCIATION OF GYNECOLOGICAL AND OBSTETRIC RISK FACTORS WITH SQUAMOUS INTRAEPITHELIAL LESIONS IN PATIENTS AGED 19 TO 45 YEARS

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ABSTRACT

Cervical cancer is the leading cause of morbidity and mortality in women worldwide, with squamous intraepithelial lesions being its precursors. The objective of this study was to determine the association between gynecological-obstetric risk factors with squamous intraepithelial lesions in patients aged 19 to 45 years from the Instituto del Cáncer de El Salvador (hereinafter Cancer Institute of El Salvador). The applied methodology is a case-control study, analytical, which includes 40 cases and 80 controls; the survey technique was used and a questionnaire was the instrument. The association strength was measured using Odds Ratio, with a 95% confidence interval, admitting a statistical significance level of $p < 0.05$, and X^2 as a statistical test. The data processing and analysis were done in Microsoft Excel and OpenEpi. In the results, an association was found between the following factors and squamous intraepithelial lesions: age 20 to 30 years: OR = 10.09, p = 0.000004, 95% CI 3.5–28.5 Adolescent pregnancy: OR = 6.92, p = 0.000065, 95% CI 2.61–18.3 Multiparity: OR = 14.04, p = 0.00005, 95% CI 3.6–6.22 History of HPV: OR = 4.26, p = 0.0011, 95% CI 1.8–9.9 Sexual intercourse during adolescence: OR = 4.18, p = 0.004, 95% CI 1.5–11.1 Multiple sexual partners: OR = 4.66, p = 0.00059, 95% CI 1.0–11.0 There is no association with the consumption of oral contraceptives for 5 years: OR = 2.42, p = 0.09, 95% CI 0.9–6.05, or with history of cervical cancer: OR = 1.13, p = 0.94, 95% CI 0.4–2.6. It is concluded that more than half of the users have gynecological and obstetric risk factors. Nevertheless, factors such as age 20 to 30 years, first pregnancy during adolescence, multiparity, presence of HPV, sexual intercourse during adolescence, and multiple sexual partners are statistically significant. On the other hand, factors such as the consumption of oral contraceptives and a family history of cervical cancer are not statistically significant.

Keywords: multiple sexual partners, early pregnancy, obstetrics and gynecology, El Salvador.

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ASOCIACIÓN DE FACTORES DE RIESGO GINECOOBSTÉTRICOS CON LESIONES ESCAMOSAS INTRAEPITELIALES EN PACIENTES DE 19 A 45 AÑOS

Resumen

Mundialmente, el cáncer cervicouterino es la primera causa de morbimortalidad en la mujer, siendo precursoras las lesiones escamosas intraepiteliales. El objetivo fue determinar la asociación entre factores de riesgo ginecoobstètricos con lesiones escamosas intraepiteliales en pacientes de 19 a 45 años, del Instituto del Cáncer de El Salvador. La metodología es el estudio de casos y controles, analítico, con 40 casos y 80 controles; se aplicó la encuesta como técnica y un cuestionario como instrumento. La fuerza de asociación se midió con Odd Ratio, con intervalo de confianza del 95 %, admitiendo un nivel de significancia estadística $p < 0.05$, y X^2 como prueba estadística. El proceso y análisis de los datos se realizó en Microsoft Excel y OpenEpi. En los resultados se encontró asociación entre: edad 20 a 30 años, con OR = 10.09, p = 0.000004, IC 95 % 3.5-28.5, embarazo en adolescencia: OR = 6.92, p = 0.000065, IC 95 % 2.61-18.3, multiparidad: OR = 14.04, p = 0.00005, IC 95 % 3.6-6.22, antecedentes de VPH: OR = 4.26, p = 0.0011, IC 95 % 1.8-9.9 %, relaciones sexuales en adolescencia: OR = 4.18, p = 0.004, IC 95 % 1.5–11.1, múltiples parejas: OR = 4.66, p = 0.00059, IC 95 % 1.0-11.0 con las lesiones escamosas intraepiteliales, y no hay asociación con el consumo de anticonceptivos orales por 5 años: OR = 2.42, p = 0.09, IC 95 % 0.9–6.05, antecedentes de cáncer cervicouterino, OR = 1.13, p = 0.94, IC 95 % 04–2.6.Se concluye que más de la mitad de usuarias presentan factores de riesgo ginecoobstétricos, pero factores como: edad de 20 a 30 años, primer embarazo en adolescencia, multiparidad, presencia de VPH, relaciones sexuales en la adolescencia, múltiples parejas, son significativos estadísticamente y, consumo anticonceptivo orales, antecedentes familiares de cáncer cervicouterino, no son estadísticamente significativos.

Palabras clave: múltiples parejas sexuales, embarazo precoz, ginecoobstetricia, El Salvador

INTRODUCTION

This article is the result of the research titled "Association of gynecological and obstetric risk factors with squamous intraepithelial lesions in patients aged 19 to 45 years", which was conducted at the Cancer Institute of El Salvador from February to July 2021.

Squamous intraepithelial lesions (hereinafter SIL) are characterized by the abnormal and precancerous growth of cells, which when developing uncontrollably, invade and destroy normal tissues. These lesions and cervical cancer show an increasing trend, with approximately 10 million new cases occurring annually and an expected 15 million

cases by 2021. As a result, cervical cancer has become the fourth most common cancer in women worldwide (1).

Therefore, the question arises: Is there an association between gynecological and obstetric risk factors and squamous intraepithelial lesions in patients aged 19 to 45 years at the Cancer Institute of El Salvador? And the general objective is to determine the association between gynecological and obstetric risk factors and squamous intraepithelial lesions in patients aged 19 to 45 years at the Cancer Institute of El Salvador, during the period from February to July 2021. On the other hand, the specific objectives are: to identify gynecological and obstetric risk factors in women aged 19 to 45 years who sought consultation at the Cancer Institute of El Salvador; to determine the prevalence of squamous intraepithelial lesions in women aged 19 to 45 years at the Cancer Institute of El Salvador; to analyze the association between gynecological and obstetric risk factors and squamous intraepithelial lesions in women aged 19 to 45 years.

In general, the natural evolution of SIL involves a gradual progression in stages, ranging from preinvasive intraepithelial lesions, known as intraepithelial neoplasias-SIL I, II and III to carcinoma in situ (CIS), depending on the thickness of the compromised cervical epithelium. The overall prevalence of these pre-invasive lesions is 10 to 15%. The age groups with the highest prevalence are 15 to 30 years for SIL grade I, 30 to 34 years for SIL grade II, and 35 to 49 years for SIL grade III. The progression rate of cervical intraepithelial neoplasia ranges from 6% to 34%. The wide range is explained by varying conditions in different countries, early detection strategies in different populations, diverse sociocultural contexts, and respective healthcare standards (2).

The Bethesda system introduced new terms for cytological diagnostic reporting in 1991 (3), which are: a) Low-grade SIL: indicates that only the lower third of the total thickness of the epithelium is affected, cellular alterations associated with the Human Papillomavirus and presence of slightly abnormal cells on the surface of the cervix; b) High-grade SIL: the alterations affect from two-thirds to the entire thickness of the epithelium, and a Papanicolaou test or vaginal cytology reveal moderate to severe changes in cervical cells; c) Cervical cancer: there are various definitions for this type of cancer, but the MINSAL defines it as: "a malignant tumor that develops in the cells of the cervix, with the ability to invade healthy peripheral tissues, spread to distant organs and implant itself there. There are two main types of cervical cancer: squamous cell carcinoma, which accounts for approximately 80% to 90% of cases, and adenocarcinoma, which is the second most common type of cervical cancer (10% to 15%) and originates in the glandular cells of the endocervix" (4).

There are multiple gynecological and obstetric risk factors that constitute genetic and biological conditions or alterations, which increase the likelihood of women developing abnormal changes or diseases in the uterus and cervix, leading to tissue lesions the most frequent ones are (4):

- Age, because young girls under the age of 15 rarely develop cervical cancer, since the prevalence of intraepithelial lesions occurs in the age group between 20 to 40 years, with a peak incidence at the age of 30.

- First pregnancy at an early age, apparently due to the immaturity of the cervical cells during obstetric trauma. Some studies have indicated that hormonal changes during pregnancy could make women more susceptible to HPV infection or tumor growth.

- Multiparity: there is a positive association between HPV persistence and high levels of estrogens observed during pregnancies, which can lead to an increased development of SIL due to multiple childbirths. It has been established that women with two or more children have an 80% higher risk compared to nulliparous women. After four children, the risk triples, after seven it quadruples, and with twelve children, it increases fivefold.

- Sexually transmitted infections are "a heterogeneous group of communicable diseases that share a common element, which is genital sexual intercourse or vaginal, anal, and oral sex practices, both receptive and insertive, as a transmission mechanism. HPV is considered a sexually transmitted infection".

- Oral contraceptive use: the risk is higher in women who take oral contraceptives for more than five years, since the exogenous hormonal stimulation from these contraceptives can promote HPV persistence and progression to neoplasia.

- Family history of cervical cancer, since it can occur more frequently in some families. If the mother or sister has had this disease, the chances of developing it increase two to three times compared to women from families without a history of cervical cancer.

- Early onset of sexual activity: currently, the initiation of sexual activity in adolescents is accepted as a high-risk factor for developing premalignant lesions and cervical cancer, due to the susceptibility of the immature squamous metaplastic epithelium, which is thinner and more fragile. It has been demonstrated that cervical tissues are more susceptible to the action of carcinogens during adolescence, and if there is a related infectious agent, the exposure time to it will be much longer. The risk of intraepithelial lesions when sexual intercourse occurs for the first time at age 17 or younger is 2.4 times higher than when it occurs at age 21 (5).

Therefore, the following null hypothesis is proposed: there is no association between gynecological and obstetric risk factors and squamous intraepithelial lesions in women aged 19 to 45 years who sought consultation at the Cancer Institute of El Salvador from February to September 2021, and as an alternative hypothesis: gynecological and obstetric risk factors are associated with squamous intraepithelial lesions in women aged 19 to 45 years who who seek consultation at the Cancer Institute of El Salvador from February to September 2021.

RESEARCH METHODOLOGY

This research was conducted at the Cancer Institute of El Salvador, using a quantitative approach, since descriptive statistics were applied, presenting the results in tables and graphs, while inferential statistics were used to find the association of gynecological and obstetric factors with SIL in women aged 19 to 45 years who participated in the study.

It was observational in nature as no intervention was applied to modify the variables; analytical because it analyzed the cause and effect relationship, in this case the results of having a history of gynecological and obstetric risk factors and SIL were observed. It was also a case-control study since it involved working with two groups: the case group, consisting of all women aged 19 to 45 years who were diagnosed with SIL in their vaginal cytology report, and the control group, consisting of users of the same age who underwent vaginal cytology during the same period and at the same location, but whose results were negative. The chronology of the research was retrospective, as it investigated the exposure to risk factors in the past lives of the participants, and the diagnosis was made prior to the research, that is, it started from the effect and sought to find the cause. As for the data collection timeframe, it was cross-sectional since it was conducted at a specific point in time, there was no follow-up.

The study population consisted of 1049 women who underwent vaginal cytology from January to May 2021, the sample size was calculated using OpenEpi 3.01, resulting in 40 women for the cases and 80 for the controls, establishing a ratio of 1 case to 2 controls. The data collection period took place during the month of June of the current year and since it was a finite population, a probability sampling of simple random type was applied, since all women aged 19 to 45 years who underwent vaginal cytology during the aforementioned period had an equal chance to participate.

To guarantee randomness, the selection process was conducted based on the acquired sampling frame from the institution, which consisted of a list with the names of all users, numbering them from 1 to 1049, and then the selection procedure was done using Excel.

It was also verified that the selected participants met the inclusion criteria, which were: being between the age of 19 and 45 years, and having a vaginal cytology report that was positive for SIL, having undergone vaginal cytology from January to May 2021 and that they agreed to participate in the study; for the controls, the inclusion criteria were: having undergone vaginal cytology from January to May 2021, that the vaginal cytology report was negative, that they agreed to participate in the study, and that they were between the age of 19 and 45 years; exclusion criteria for both groups were: users with mental health problems that hindered their ability to respond to the questionnaire, users who belonged to antisocial groups, users who did not agree to participate in the study.

As for the technique used to collect the information, a survey was used, and the instrument was a 16-item questionnaire. A private booth was requested for the privacy of each user, and they were explained the nature of the research, its objectives, and the benefits for the female population. All the information was read and explained to them and they were asked to sign the informed consent form if they agreed to participate in the research. After collecting the information, the instrument was encoded and entered into an Excel database, and descriptive statistics were applied, specifically the percentage method to present the results in simple tables. To perform inferential analysis, the following statistical tests were applied: X^2, OR, p-value, 95% CI, establishing statistical significance if the p-value is equal to or less than 0.05

Analysis and discussion of results

The scientific research methods employed allow the presentation of the following descriptive analysis of each variable:

55% of the participating users were in the range of 31 to 45 years, while 45% were in the range of 20 to 30 years. The data showed a mean of 35, a median of 40 years, and a mode of 45 years, indicating an asymmetric distribution. The standard deviation from the mean was 8.

In the case of the control group, 92.50% of individuals were also in the age range of 31 to 45 years, while only 7.50% were in the range of 20 to 30 years. The mean age was 38, the median was 40, and the mode was 45 years, indicating that it is also an asymmetric distribution. The standard deviation from the mean was 5. In both groups, the most repeated age is 45 years (Figure 1).

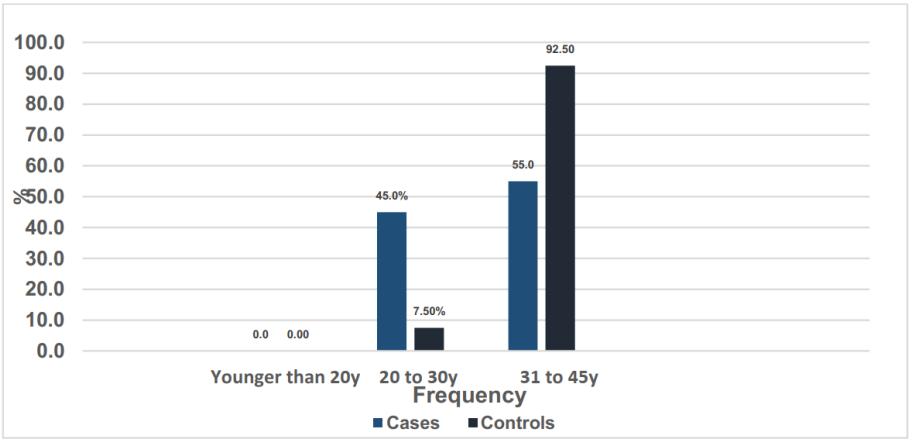

Figure 1. Age of users. Source: Own elaboration.

When inquiring about the age of their first pregnancy, 85% of the case users responded that it was before the age of 20, and 15% was after the age of 20, with an average of 18.3, a median of 18, a mode of 18, presenting symmetry, and a standard deviation of 2.3; in contrast, among the control group of users, 55% reported having their first pregnancy after the age of 20, while 45% had it before the age of 20. The data showed a mean age of 20, a median of 20, and a mode of 20, indicating symmetry, with a standard deviation of 4.9. It is noteworthy that in the case group, the majority of users had their first pregnancy during adolescence (Figure 2).

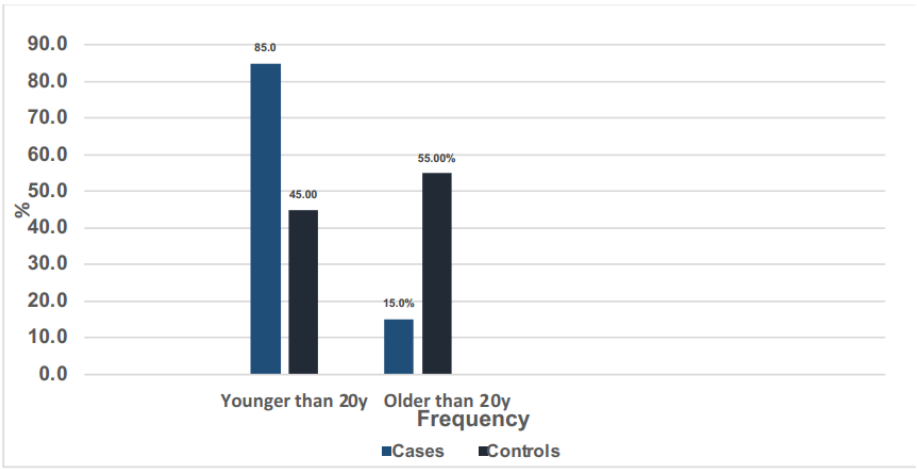

Figure 2. Age of first pregnancy. Source: Own elaboration.

As for the number of births, 85% of the case users responded that they had given birth three to five times, 10% more than five times, and 5% one to two times. When subjecting the variable to statistical analysis, it resulted in a mean of 3.7, a median of 3, and a mode of 3, indicating a symmetric distribution, with a standard deviation of 1.5, presenting a range of 9, the minimum was 1 and the maximum 10. From the control group users, 52.5% reported giving birth three to five times, 42.5% one to two times, and 5% more than five times. The data showed a mean of 2.9, a median of 3, and a mode of 3, indicating a symmetric distribution, with a standard deviation of 1.5; the range was 8, the minimum was 1 and the maximum 9, showing that multiparity has been higher in the case group (Figure 3).

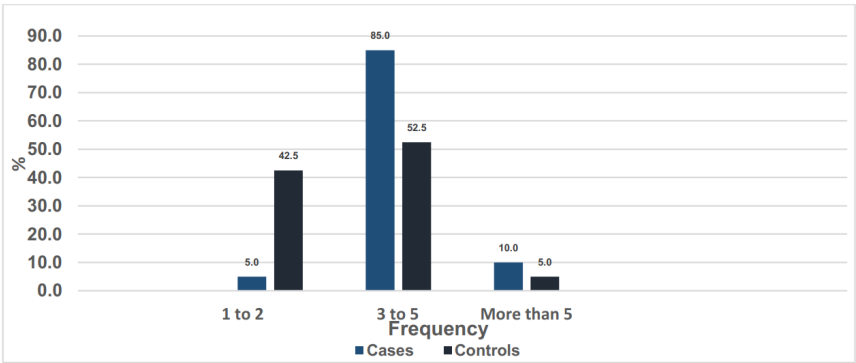

Figure 3. Number of births. Source: Own elaboration.

Regarding the age at which users had sexual intercourse for the first time, in the case group, 72.5% responded that it occurred between the ages of 15 and 19, 15% between 20 and 24, and 12.3% between 10 and 14, the mean vas 17.2 years, the median 17, and the mode 17, presenting symmetry, with a standard deviation of 2.7, and a variance of 7.2, indicating that there are women who had sexual intercourse at a very early age. In the control group, 42.50% had it between the ages of 15 and 19, 36.25% between 20 and 24, 15% between 10 and 14, 3.75% between 30 and 35, and 2.50% between 25 and 29, the mean was 18.2 years, the median 17.5, the mode 20, indicating an asymmetric distribution, the standard deviation was 3.9, and a variance of 15.29 with respect to the mean, therefore, it is in the case group where it is observed that users had sexual intercourse for the first time prematurely (Figure 4).

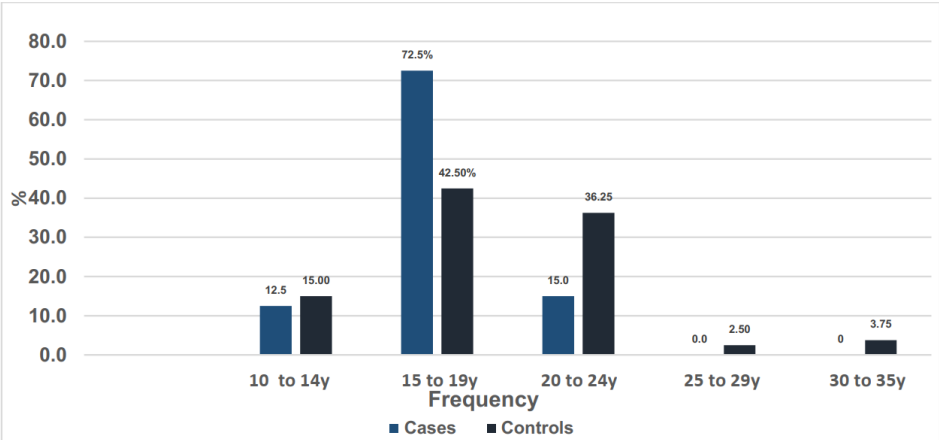

Figure 4. Age at first sexual intercourse. Source: Own elaboration.

For inferential analysis, the observed frequencies of each variable were obtained from the Excel database using the "COUNTIF" option and tetrachoric tables were created, OpenEpi was then used to calculate X^2, OR, p-value, using a 95% CI. The analysis revealed that the following gynecological and obstetric factors showed statistical significance: age between 20 and 30 years, first pregnancy before the age of 20, giving birth 3 or more times, and having suffered an HPV infection, having had sexual intercourse for the first time before the age of 20 and having had more than one sexual partner; therefore, the null hypothesis is rejected. The factors that represent risk according to the OR, but do not have statistical significance, unless due to randomness, are: the use of OCP for five years, having a family history of cervical cancer, specifically the mother; therefore, the null hypothesis is accepted for both risk factors (Table 1).

Table 1. Gynecological and obstetric risk factors in users of the Cancer Institute of El Salvador. June 2021

Gynecological and obstetric risk factors	OR	X^2	P	95% CI	Significance
Age between 20 to 30 years	10.09	21.15	0.000004	3.5 – 28.5	Yes
First pregnancy at an age younger than 20 years	6.92	15.95	0.000065	2.61-18.33	Yes
Giving birth 3 or more times	14.04	16.12	0.00005	3.16 - 62.2	Yes
HPV presence	4.26	10.58	0.0011	1.8 – 9.9	Yes

Use of OCP for more than 5 years	2.42	2.87	0.09	0.9 – 6.05	No
Sexual intercourse for the first time at an age younger than 20 years	4.18	7.88	0.004	1.58 – 11.1	Yes
More than 1 sexual partner	4.66	11.79	0.00059	1.9 – 11.0	Yes
Family has history of cervical cancer	1.13	0,005	0,94	04 – 2.6	No
Maternal history of cervical cancer	1.76	0.31	0.57	0.5-6.1	No

Source: own elaboration.

Discussion of results

Regarding age, in the case group the highest percentage was in the range of 31 to 45 years, followed by 20 to 30 years, with a mean of 35.6, a median of 40 years, and a mode of 45 years, the standard deviation from the mean was 8; in the control group, the highest percentage was also in the age range of 31 to 45 years, with a mean of 38, a median of 40 years, and a mode of 45 years, in both groups, the age that was repeated more times was 45 years, however, studies have shown that the prevalence of intraepithelial lesions occurs in women aged 20 to 40 years, with a peak incidence at 30 years, therefore, the age factor as a risk for suffering from SIL was subjected to inferential analysis, taking the total number of women between 20 and 30 years old, finding statistical significance, with OR values of 10.09, X^2 of 21.15, p = 0.000004 and 95% CI: 3.5 to 28.5. When comparing this result with a study conducted by May-González, Rut Yolanda, Romero-Vásquez, Argeo (6) in the City of Tabasco, Mexico, in 2010, which was a case-control study, in which they confirmed the age range of 35 to 39 years and the risk of SIL with an Odds Ratio (OR) = 2.52, a 95% confidence interval (CI) 1.15–5.51, p = 0.0190, it can be observed that the risk found in women aged 20 to 30 years is higher than that reported in this study.

Another factor is first pregnancy at an early age. In this study, it was found that the majority from the case group had their first pregnancy before the age of 20, with a mean of 18.3, a median of 18, a mode of 18 years and a standard deviation of 2.3; in the control group, less than half reported having their first pregnancy before the age of 20. In the case of control users, a smaller percentage than half reported having their first pregnancy before the age of 20, while more than half reported it occurred after turning 20, with a mean of 20 years, median 20, mode 20, a standard deviation of 4.9; it was observed that in the case group, the majority of users had their first pregnancy during adolescence. When subjecting this variable to inferential analysis, statistical significance was found with an OR of 6.92, X^2 of 15.95, p = 0.000065, and a 95% CI = 2.61–18.3.

When comparing the percentage of women who reported having their first pregnancy before the age of 20, combining the case and control groups, it is more than half, indicating a higher percentage than the findings in a study from 2016 which included 150 women in Colombia, conducted by Barrios García, Lía, Lecompte Osorio, Paola Andrea, Leones Castillo, Rodolfo Alberto, López Custode, Francisco Rafael (7). In that study, only 44.1% of women stated having their first pregnancy before the age of 20.

Regarding multiparity, it was found that in the case group, the majority had given birth three to five times, with a mean of 3.7, a median of 3, and a mode of 3, indicating symmetric distribution, with a standard deviation of 1.5, a range of 9, with a minimum of 1 and a maximum of 10. In the control group, only half reported giving birth three to five times, with a mean of 2.9, a median of 3, a mode of 3, also presenting symmetry in the distribution, with a standard deviation of 1.5. The range was 8, with a minimum of 1 and a maximum of 9, indicating that multiparity has been higher in the case group. When subjecting the risk of having more than 3 births to inferential analysis, statistical significance was found with an OR = 14.04, X^2 = 16.12, p = 0.00005, 95% CI = 3.16–6.22. The finding reflects that the majority of users are multiparous, which is consistent with the results of the study conducted in Colombia in 2016, in which 64% had given birth two or more times.

In the case of the history of STIs, specifically HPV for being considered sexually transmitted, it was found that nearly half of the case group reported having suffered an HPV infection at some point in their lives, while in the control group a low percentage had suffered from an HPV infection, a lower percentage from herpes and another lower percentage from other types of infections, indicating that in the case group, nearly half of the women have had a history of HPV infection. When subjecting this variable to inferential analysis, statistical significance was found: OR = 4.26, X^2 = 10.58, p = 0.0011, 95% CI = 1.8–9.9. This finding is consistent with the study conducted in Tabasco, Mexico, in 2010, which confirmed the association between a history of HPV and the risk of cervical intraepithelial lesions with an OR = 9.79, 95% CI = 3.35–28.62, p = 0.0000.

The risk factor of ingesting oral contraceptives, specifically for more than five years, was found to be present in the case group; one-third of the surveyed reported using OCP for more than five years, while, in the control group, this was not the case, showing that this factor had a higher incidence in the case group. When subjecting the variable to inferential analysis, no statistical significance was found with an OR = 2.42, X^2 = 2.87, p = 0.09, 95% CI = 0.9–6.05, therefore, there is no association with SIL; the risk identified with OR in patients of the Cancer Institute of El Salvador who participated in the study is due to randomness. In terms of the percentage of OCP use, it is similar to the findings of the study conducted in Colombia in 2016, where 22% of the participants used hormonal contraceptives, and 38% did not use any family planning methods.

The initiation of genital sexual intercourse at an early age is accepted as a high-risk factor for developing premalignant lesions and cervical cancer, as mentioned by the MINSAL in the *Lineamientos técnicos para el control de las infecciones de transmisión sexual* (Technical Guidelines for the Control of Sexually Transmitted Infections).

It was determined that in the case group, the majority reported having sexual intercourse for the first time between the ages of 15 and 19 years, and a low percentage between the age of 10 and 14 years, the mean was 17.2 years, the median 17, and the mode 17, with a standard deviation of 2.7, a variance of 7.2 with respect to the mean, which indicates that there are women who had sexual intercourse for the first time at a very young age; however, in the control group, less than half of the users reported being between the ages of 15 and 19 years and a low percentage between 10 and 14 years, the mean was 18.2 years, the median was 17.5, the mode was 20 years, indicating an asymmetric distribution, the standard deviation was 3.9 and a variance of 15.29 with respect to the mean.

When subjecting the variable to inferential analysis, statistical significance was found: OR = 4.18, X^2 = 7.8, p = 0.004, 95% CI = 1.5–11.1.

When assessing the risk of multiple sexual partners, it was found that in the case group, nearly half of the interviewees reported having had between 3 to 5 partners, the mean was 3.05, the median 3, the mode 3, the standard deviation 1.4, with a minimum range of 1 and a maximum of 10 partners; in the control group, a little over half responded that they had only had one partner, showing a mean of 2.5, a median of 1, and a mode of 1, the standard deviation was 2.5, the minimum range was 1 and the maximum 15; however, it is observed that the case group of users reported the highest number of sexual partners, when subjected to inferential analysis, statistical significance was found: OR = 4.66, X^2 = 11.79, p = 0.00059, 95% CI = 1.9–11.0. This finding is similar to a study conducted in Medellín, Colombia, in 2006, where statistical significance was also found when having more than 3 sexual partners (OR = 3.72, 95% CI = 0.92–13.45, X^2 = 3.89, p = 0.0339).

According to related literature, a family history of cervical cancer can occur more frequently in some families. If a mother or sister of a woman has had cervical cancer, the chances of the woman developing the disease increase two to three times compared to nonexistent family history of cervical cancer.

It was found that in the case group, a low percentage reported a family history of maternal cervical cancer, and in the control group, a similarly low percentage reported it; when subjecting this variable to inferential analysis, no statistical significance was found: OR = 1.76, X^2 = 0.31, p = 0.57, 95% CI = 0.5–6.1, therefore, the risk found with OR is likely due to randomness in the case of users from the Cancer Institute of El Salvador who participated in the study, this finding differs from the one of a study conducted in Tabasco, Mexico, in 2010, where a family history of cervi-

cal cancer in the maternal lineage was statistically significant (OR = 4.57, 95% CI = 1.30–16.02, p = 0.0106).

Regarding the prevalence of SIL, it was found that it was 3.6% for low-grade SIL, 0.6% for high-grade SIL, and 0.3% for cervical cancer, the sum of all the lesions is 4.4%, and when comparing these results to those of the research conducted in the city of Medellín, Colombia, in 2006, in which a prevalence of SIL of 3.2% (13 cases) was found, it is observed that the prevalence found in the users who participated in the study at the Cancer Institute of El Salvador is higher.

Finally, the null hypothesis that says "there is no association between gynecological and obstetric risk factors and intraepithelial squamous lesions in women aged 19 to 45 who attend the Cancer Institute of El Salvador, from February to September 2021", is rejected according to the results and these factors: age 20 to 30 years, first pregnancy before the age of 20, having had 3 or more births, presence of HPV, had sexual intercourse for the first time before the age of 20, having had more than one sexual partner; and it is accepted in the case of gynecological and obstetric risk: use of OCP for more than 5 years, family history of cervical cancer and maternal history of cervical cancer.

Conclusions

1. More than half of the research participants exhibit gynecological and obstetric risks such as: first pregnancy before the age of 20, giving birth more than 3 times, presence of HPV, use of OCP for more than 5 years, having had sexual intercourse for the first time before the age of 20, having had more than one sexual partner, family history of cervical cancer, and maternal history of cervical cancer.
2. The prevalence of squamous intraepithelial lesions in women participating in the research at the Cancer Institute of El Salvador is 4.4%, with low-grade lesions occurring more frequently.
3. These gynecological and obstetric risks: age between 20 and 30 years, first pregnancy before the age of 20, giving birth more than 3 times, presence of HPV, having had sexual intercourse for the first time before the age of 20, and having had more than one sexual partner, confirm a statistically significant association with squamous intraepithelial lesions in women aged 19 to 45 who participated in the research at the Cancer Institute of El Salvador, therefore, they are at risk of developing cervical cancer in the future.
4. These gynecological and obstetric risks: the use of oral contraceptives for more than 5 years, family history of cervical cancer, maternal history of cervical cancer, do not have a statistically significant association with squamous intraepithelial lesions in women aged 19 to 45 who participated in the research at the Cancer Institute of El Salvador, therefore, the risk found is due to randomness.

Recommendations

1. Addressed to the Ministry of Health and the Ministry of Education: an inter-institutional intervention should be urgently developed, aimed at promoting and educating on healthy lifestyles with a focus on teaching sexual and reproductive health since childhood in El Salvador. This intervention should begin as early as possible to promote the prevention of risk factors for squamous intraepithelial lesions and cervical cancer.
2. Conduct a nationwide multicenter study using a case-control methodology that can be applied in the National Health System, to establish a parameter at the national level on the association of gynecological and obstetric risk factors with squamous intraepithelial lesions in women.
3. Addressed to the Ministry of Health and the Cancer Institute of El Salvador: integrate the promotion and education on risk-free lifestyles in women who request PAP testing services, aimed at preventing squamous intraepithelial squamous lesions and cancer.

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