



A DETECÇÃO DO PAPILOMAVÍRUS HUMANO (HPV) EM COLPOCITOLOGIAS ONCÓTICAS

DETECTION OF HUMAN PAPILLOMA VIRUS (HPV) IN ONCOTIC COLPOCYTOLOGIES

DETECCIÓN DEL VIRUS DEL PAPILOMA HUMANO (VPH) EN COLPOCITOLOGÍAS ONCÓTICAS

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RESUMO

Objetivo: avaliar a detecção de HPV em Colpocitologias Oncóticas (COs) no município de Arapiraca (AL) na perspectiva da saúde pública. **Método:** realizou-se um estudo de abordagem quantitativa, por meio de pesquisa no Sistema de Informações do Câncer (SISCAN), no período de 2015 a 2019, verificando-se, como variáveis independentes, o município que prestou o serviço no Estado de Alagoas, a faixa etária de mulheres que realizaram a colpocitologia oncótica e a quantidade de exames que detectaram o HPV; já como variáveis dependentes destacam-se os exames por células atípicas escamosas.

Resultados: nos últimos cinco anos, 63.451 mulheres realizaram a colpocitologia oncótica no município estudado. Observaram-se uma maior frequência na faixa etária de 40 a 44 anos (12,08 %) e um declínio a partir da faixa etária entre 45 e 49 anos, passando de 11,16 % a 0,28 % em mulheres acima de 79 anos. Com relação à investigação por células escamosas atípicas, a displasia de lesões de baixo grau (HPV e NIC I) foi identificada em 202 exames (0,32 %), sendo grande o percentual de exames com resultado ignorado (99,60%). Percebeu-se uma pequena variação anual na detecção do HPV entre os anos estudados, sendo distribuída em uma frequência similar (variando de 20,3% a 23,76%), com uma taxa ainda menor no ano de 2017 (13,37 %).

Conclusão: o estudo contribui para ressaltar, no âmbito da saúde pública, a importância de orientar as mulheres quanto à realização do exame na triagem das lesões do colo uterino, sensibilizando-as frente ao combate à infecção pelo HPV.

Palavras-Chave: Papilomavírus Humano; Diagnóstico; Saúde Pública; Saúde da Mulher; Colo Uterino.

ABSTRACT

Objective: to evaluate the detection of HPV in Oncotic Colpocytologies (OCs) in the municipality of Arapiraca (AL) from a public health perspective. **Method:** a study of quantitative approach was conducted, through research in the Cancer Information System (SISCAN), in the period from 2015 to 2019, verifying, as independent variables, the municipality that provided the service in the State of Alagoas, the age range of women who performed oncotic colpocytology and the amount of tests that detected HPV; already as dependent variables we highlight the tests for atypical squamous cells.

Results: in the last five years, 63,451 women underwent oncotic colpocytology in the studied municipality. A higher frequency was observed in the age group 40 to 44 years (12.08 %) and a decline from the age group 45 to 49 years, going from 11.16 % to 0.28 % in women over 79 years. Regarding the investigation for atypical squamous cells, dysplasia of low-grade lesions (HPV and CIN I) was identified in 202 exams (0.32%), and the percentage of exams with ignored results was high (99.60%). A small annual

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variation was noticed in the detection of HPV among the years studied, being distributed in a similar frequency (ranging from 20.3% to 23.76%), with an even lower rate in 2017 (13.37 %). **Conclusion:** the study contributes to highlighting, in the public health field, the importance of orienting women on how to perform the exam for screening cervical lesions, making them aware of the fight against HPV infection.

Keywords: Human Papilloma Virus; Diagnosis; Public Health; Women's Health; Cervix.

RESUMEN

Objetivo: evaluar la detección de VPH en Colpocitologías Oncóticas (CO) en la ciudad de Arapiraca (AL) desde la perspectiva de la salud pública. **Método:** se realizó un estudio con enfoque cuantitativo, mediante investigación en el Sistema de Información del Cáncer (SISCAN), en el período de 2015 a 2019, verificando, como variables independientes, el municipio que prestó el servicio en el Estado de Alagoas, el grupo de edad de las mujeres que se sometieron a colpocitología oncológica y número de pruebas que detectaron el VPH; como variables dependientes se destacan las pruebas de células escamosas atípicas. **Resultados:** en los últimos cinco años, 63.451 mujeres se sometieron a colpocitología oncológica en el municipio estudiado. Hubo una mayor frecuencia en el grupo de edad de 40 a 44 años (12,08%) y un descenso en el grupo de edad de 45 a 49 años, pasando de 11,16% a 0,28% en mujeres mayores de 79 años. En cuanto a la investigación de células escamosas atípicas, se identificó displasia de lesiones de bajo grado (VPH y NIC I) en 202 pruebas (0,32%), con un gran porcentaje de pruebas con resultados desconocidos (99,60%). Hubo una pequeña variación anual en la detección de VPH entre los años estudiados, distribuyéndose con una frecuencia similar (que van del 20,3% al 23,76%), con una tasa aún menor en el año 2017 (13,37%). **Conclusión:** el estudio contribuye para resaltar, en el contexto de la salud pública, la importancia de orientar a las mujeres en la realización del examen en el cribado de lesiones cervicales, sensibilizándolas en la lucha contra la infección por VPH.

Palabras clave: Virus del papiloma humano; Diagnóstico; Salud pública; Salud de la mujer; Cuello uterino.

INTRODUCTION

The Human Papillomavirus (HPV) manifests itself clinically by means of microlesions in the basal cells of the squamous epithelium in the cervix and plays a central role in the carcinogenesis of cervical cancer, indicating a primary factor in its evolution. There are about one hundred types of HPV described, forty of which predominate in the anogenital region. The subtypes 16 and 18, oncogenic or high-risk, are the most present, responsible for 70% of cervical cancers.¹

For the biennium 2018-2019, the National Cancer Institute (INCA) estimated 16,370 cases of cervical cancer for each year, determining a risk of 15.43 cases per 100,000 women and reaching the third position among the most frequent neoplasms in Brazil.²

Under the circumstances in which the HPV virus presents clinical manifestations, it is common to see warts or exophytic lesions, known as condylomata acuminata or "cockscomb", with various dimensions, cauliflower-like appearance and that appear in both sexes. In women, they can be found in the cervix, vagina, vulva, pubic and perianal regions and in the anus; in men, they attack the penis, the scrotum, the pubic and perianal regions and the anus.

In addition, lesions can also appear in the mouth and throat. In the same regions where these lesions occur, subclinical infections may go undetected.¹

According to the Brazilian nomenclature for cytology reports, cervical lesions are divided as follows: low-grade squamous intraepithelial lesion (LSIL or CIN I), in which cytological changes are limited to the third of the lining epithelium of the cervix; high-grade squamous intraepithelial lesion (HSIL, CIN II or CIN III), which affects above 50% of the lining sidewalk epithelium of the cervix; carcinoma in situ (CIN III), which involves the whole epithelial thickness; adenocarcinoma in situ (AIS), which are the changes similar to CIN III, only in glandular cells of the cervix, and invasive carcinoma, comprising squamous cells with great variation in shape, nucleus and size. in shape, nucleus and size.³

Early atypical changes in cervical epithelia are reflected by the persistence of the high-risk Human Papilloma Virus (HR HPV) genotypes 16 and 18. However, this condition is not sufficient for the development of a colouterine carcinoma, since most HPV infections regress spontaneously, as well as the early onset of sexual life, the viral type, the host immune response, the use of oral contraceptives, hormone levels, smoking, alcohol consumption and the presence of Sexually Transmitted Infections (STI) are determinant risk factors for viral carcinogenesis.²

It is known that HPV infection happens mainly through unsuspecting sexual contact, which allows damage to the deep layer of epithelial tissue because of the penetration of the virus through microabrasions. However, as lesions can also manifest in other parts of the body, direct or indirect contact can be considered, as well as vertical transmission during pregnancy or at delivery.⁴

In the context of the practice of care for the detection of these lesions, the Oncotic Colpocytology (OC) exam is fundamentally important, which is painless, free, simple, and effective for cervical cancer screening. The study of exfoliated squamous cells from the external (ectocervix) and internal (endocervix) parts of the cervix is widely used in the primary health care network, and can be performed by trained professionals. This reduces the morbidity and mortality from cancer and its physical, psychological, and social repercussions on Brazilian women.⁵

A study conducted with women attending for routine gynecological consultation in the cities of São José do Rio Preto (SP) and Olímpia (SP), to determine the prevalence of HPV infection, showed that of the 3,937

colpocytological exams analyzed, 36 (0.91%) presented HPV infection and low-grade squamous intraepithelial lesion (LSIL) and the age group with the highest rate of contamination was between 21 and 26 years.⁶ Moreover, another study indicated that the population prevalence of HPV infection among women worldwide ranges from 2% to 44%.⁷ Thus, OC is an important mass screening method with the ability to detect epithelial and mucosal lesions.

According to the Ministry of Health (MH), it is recommended that every sexually active woman undergoes the exam annually and, after two consecutive negative exams, this regimen becomes triennial, since the early detection of the precursor lesions of invasive cancer can provide 100% cure of the cases.

It is noteworthy, considering that HPV has wide worldwide dissemination and universal distribution, and can cause serious diseases such as cancer, the contribution of preventive strategies for public health against cervical cancer, among them, the early diagnosis of cervical lesions through OC, essential to ensure effective treatment.⁸

Thus, the overall objective of this study is to evaluate the detection of HPV in oncotoc colpocytology (OCs) in the municipality of Arapiraca (AL) from the perspective of public health. For this, the research question is: "What is the prevalence of HPV detection in oncotoc colpocytology?".

METHOD

This is a study of quantitative approach, of descriptive type, conducted in January 2020, and presents, as delineation of technical-methodological procedures, data of secondary nature regarding the colpocytological exams performed in the municipality of Arapiraca (AL). The municipality in question is the main inland city, considered the capital of the agreste of Alagoas, with an estimated population, in 2019, of 231,747 inhabitants.⁹ It is the second largest municipality in the state, with a Human Development Index (HDI) of 0.649, a dynamic city with varied scales of spatial interactions. According to DATASUS, it has 238 health establishments, both public and private, with 882 beds.

For the development of the research, the study makes use of materials provided by the platforms of the Department of Informatics of the Unified Health System (DATASUS), with data from the Cancer Information System (SISCAN). This set of web platforms encompasses the Cervical Cancer (SISCOLO) and Breast Cancer (SISMAMA) Information Systems.

The period delimitation resumed the data from the last five years (2015-2019), among women aged from nine years to 79 years or older, verifying, as

independent variables, the municipality that provided the service in the State of Alagoas, the age range of women who performed OC and the amount of exams that detected HPV; already as dependent variables the exams for atypical squamous cells stand out. The evaluation of the statistical results of categorical variables was given by Microsoft Excel 2016, soon after the selection and analysis by descriptive statistics, with the scope of exams collected in the exposed period.

It is noteworthy that the study was conducted with the authors' own funding.

RESULTS

A total of 63,451 cytology tests were evaluated. Thus, the most frequent age group was between 40 and 44 years (12.08%). The performance of tests showed a decline from the age range between 45 and 49 years, going from 11.16% to 0.28% in women over 79 years, as shown in table 1.

Table 1 – Distribution by age group of women regarding the number of cervical cytologies. Arapiraca (AL), Brazil, 2020.

Variables	No.	%
Up to 9 years	17	0.03 %
Between 10 and 14 years old	125	0.20 %
Between 15 and 19 years old	2,673	4.21 %
Between 20 and 24 years old	5,453	8.59 %
Between 25 and 29 years old	6,182	9.74 %
Between 30 and 34 years old	7,081	11.16 %
Between 35 and 39 years old	7,529	11.87 %
Between 40 and 44 years old	7,664	12.08 %
Between 45 and 49 years old	7,084	11.16 %
Between 50 and 54 years old	6,602	10.40 %
Between 55 and 59 years old	5,096	8.03 %
Between 60 and 64 years old	3,748	5.91 %
Between 65 and 69 years old	2,380	3.75 %
Between 70 and 74 years old	1,142	1.80 %
Between 75 and 79 years old	495	0.78 %
Over 79 years old	179	0.28 %
Ignored	1	0.01 %
TOTAL	63,451	100 %

Source:¹⁰

It was observed, knowing that the cases with more common cytological diagnosis are those with atypical squamous cells and that the presence of these cells expresses itself as a great risk factor for HPV infection, that, of the follow-ups evidenced, most presented ignored result, with a rate of 99.60%, and the invasive squamous cell carcinoma reveals the lowest rate (0.01%), as can be seen in table 2.

Table 2 – Results of cervical cytology tests for atypical squamous cells in relation to the number of tests. Arapiraca (AL), Brazil, 2020.

Variables	No.	%
Low-grade lesion (HPV and CIN I)	202	0.32 %
High grade lesion (CIN II and CIN III)	39	0.06 %
High grade lesion, may not include microinvasion.	8	0.01 %
Invasive squamous cell carcinoma	5	0.01 %
Ignored	63,197	99.60 %
TOTAL	63,451	100 %

Source:¹⁰

It is verified, thinking about the importance of early detection of HPV infection, that, of the total number of exams performed in the municipality of Arapiraca (AL), in the period studied, 202 analyses showed low-grade lesion (HPV and NIC I), with the highest rate in the year 2018 (23.76 %).

Table 3 – Absolute and relative frequencies of cervical cytologies that detected HPV and CIN I per year. Arapiraca (AL), Brazil, 2020.

Variables	No.	%
2015	41	20.30 %
2016	43	21.29 %
2017	27	13.37 %
2018	48	23.76 %
2019	43	21.29 %
TOTAL	202	100%

Source:¹⁰

DISCUSSION

It was found that, when it comes to the age group, adolescents and adult women were the ones who performed the exams the most. It is noteworthy that, among the atypical squamous cells in the results of OCs, low-grade lesions (HPV and CIN I) were the most identified (0.32%) in the period studied, especially in 2018. However, the percentage of these exams with ignored results is striking (99.60%).

About the prevalence of HPV detection in OC, in the period from 2015 to 2019, there was a small annual variation in HPV detection among the years studied, being distributed in a similar frequency among these years (ranging from 20.3% to 23.76%), except in 2017, when there was an even lower frequency (13.37%). This fact may be related to the difficulty of women to access the service or the inappropriate supply to the demand.

An individual infected by HPV contemplates epithelial cells with evolved maturation and multiplication, stimulated by the virus oncoproteins (E1 to E7, L1, L2 and LCR), generating a benign neoplastic process that, if untreated, can evolve to a malignant neoplastic process. Such progression can vary from ten to

twenty years, facilitating the early detection of preneoplastic lesions in the Papanicolaou cytological exam, the OC. Thus, it is essential to routinely perform this test, because it promotes the identification of lesions that can evolve to cervical cancer.¹

Taking into consideration that invasive squamous cell neoplasms of the cervix are preceded by a long phase of pre-invasive disease, cervical neoplasia (CIN) is categorized into grades, depending on the proportion of the epithelium thickness that has differentiated cells. In this sense, persistent infection, caused by one or more of the oncogenic HPV subtypes, presents itself as a necessary cause of cervical neoplasia.¹⁰

Visualizing the extent of testing in localities is important, since it allows, via the results obtained, an evaluation and selection of strategies for promoting the health of women residents through early diagnosis of changes caused by HPV. According to a descriptive study of patients with precervical cancer conducted in Kenya, the identification of cilocytes in cervical smears is an important indicator of pre-cancer diagnosis of low-grade squamous intraepithelial lesion (L-SIL).¹¹

It can be seen that, of most cytological tests performed in Arapiraca (AL) that showed changes, the low-grade lesion (HPV and CIN I) was more present. In this perspective, according to the study conducted with women living in the city of Cascavel (PR), HPV stands out as a major risk factor for the development of cervical cancer, since the benign change with the presence of HPV was revealed in most of the exams.¹²

In a study conducted in the city of São Paulo, 50 women, who participated in a campaign for the prevention of cervical cancer, were investigated for the presence of HPV genetic material in cervicovaginal samples. From the total, the overall prevalence of positive samples for HPV DNA was 44%. Thus, it is evident the relevance of early diagnosis of subclinical changes, since it contributes to a more appropriate and effective treatment of lesions.¹³

According to a research conducted in the city of Paulo Afonso (BA), with the analysis of 2,153 medical records of women's cytopathological exam requisitions in 2015, the results showed that the prevalence of cytopathic effects compatible with HPV infection was 3%. According to this study, knowing the prevalence of positive cytology for HPV is of utmost importance for the development of actions aimed at improving the health of the population, providing guidance on risk

factors that contribute to the appearance of cervical lesions that can progress to cancer.¹⁴

It is also evident that, in the adolescent age group, the number of cytological exams performed increases, demonstrating the increasingly earlier onset of sexual life and the susceptibility to acquire STIs, including HPV infection. At this stage, the presence of multiple partners and the neglect of barrier methods for contraception and prevention of infections are key factors for the increased frequency of cervical cancer precursor lesions.¹⁵

CONCLUSION

The prevalence of HPV in OCs in the municipality of Arapiraca (AL) was lower than expected. In this sense, the colposcycological examination is essential for the detection of HPV infection. The observed data exposed important information for this analysis, making it clear that, in public health care, through health education, women should be guided about the importance of screening for cervical lesions. Consequently, by highlighting this form of secondary prevention, patients are sensitized to the fight against HPV infection. Therefore, any discussion to be held in the field of public health, in order to intervene in the issue described, must first consider, analyze and understand the social and local aspects involved, since they are the ones that strongly interfere in women's health policies.

It is important to point out that this study has limitations, since it uses secondary data. In addition, there was no analysis of the results of the exams according to age groups. Thus, further research is indicated to emphasize the rights of women in relation to their health and to encourage routine screening campaigns that verify the dimension of performing OCs and their notability in mitigating cervical cancer.

The study contributes to the local health services in the sense of guiding the actions of prevention and health promotion, highlighting the importance of the quality of the OC collection, as well as the adequate storage, transport and reading of the collected material and also the due registration in the information system of the Unified Health System.

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