RETROSPECTIVE ANALYSIS OF CERVICAL CYTOPATHOLOGICAL EXAMS PERFORMEDAT AT THE LABORATORY OF PATHOLOGICAL ANATOMY AND CYTOPATHOLOGY OF THE HOSPITAL ESCOLA ÁLVARO ALVIM

ANÁLISE RETROSPECTIVA DE EXAMES CITOPATOLÓGICOS DO COLO UTERINO REALIZADOS NO LABORATÓRIO DE ANATOMIA PATOLÓGICA E CITOPATOLOGIA DO HOSPITAL ESCOLA ÁLVARO ALVIM

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ABSTRACT

Each year about 272,610 new cases of cancer are diagnosed in Brazil, being cervical cancer the third most incident among women. Our country is among those that have made the most progress in consolidating the integrated cancer tracking and surveillance system. This article aims to collect sociodemographic and clinicopathological data from patients who underwent cervical cytopathological examinations at the Laboratory of Pathological Anatomy and Cytopathology at the Hospital Escola Álvaro Alvim (HEAA) from 2014 to 2018, considering a retrospective and longitudinal observation of the data. Sociodemographic and clinicopathological data were collected from 121,044 patients, and it was observed that women from Campos dos Goytacazes (84.7%) over 40 years old (56.8%) were the most prevalent at the service. The following cytological characteristics that predominated in these patients were: absence of atrophy (83.6%) or metaplasia (92.6%) of the uterine epithelium, presence of microorganisms (96.4%) and inflammation (97.2%). The presence of cell

RESUMO

A cada ano cerca de 272.610 novos casos de câncer são diagnosticados no Brasil, sendo o câncer de colo do útero o terceiro mais incidente entre as mulheres. Nosso país se situa entre os que mais têm avançado na consolidação do sistema integrado de rastreamento e vigilância em câncer. Esse trabalho visa coletar dados sociodemográficos e clinicopatológicos dos pacientes, que foram submetidos a exames citológicos dentro do Laboratório de Anatomia Patológica e Citopatologia do Hospital Escola Álvaro Alvim (HEAA), de 2014 a 2018, considerando uma observação retrospectiva e longitudinal dos dados. Foram coletados os dados sociodemográficos e clínico-patológicos de 121.044 pacientes, e observou-se que mulheres, procedentes de Campos dos Goytacazes (84,7%) com idade maior que 40 anos (56,8%) foram as mais atendidas pelo serviço. Predominaram as seguintes características citológicas: ausência de atrofia (83,6%) ou metaplasia (92,6%) do epitélio uterino, presença de microrganismos (96,4%) e de inflamação (97,2%). A presença de atipias celulares (6,5%), de lesão

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atypia (6.5%), squamous intraepithelial lesion (2%) and malignant neoplasm (0.1%) was also observed. Therefore, it becomes possible to highlight the importance of cytological examination in the process of diagnosis of malignant neoplasms of the uterine cervix, being essential for a better control and adequate screening, implementing an effective early diagnosis. It also demonstrates the profile of the patients examined at the Pathological Anatomy and Cytopathology Laboratory of HEAA, as well as the scope of this service for early diagnosis of cervical cancer in the North and Northwest Fluminense.

Keywords: Data collection; Cytology; Pathology.

intraepitelial escamosa (2%) e de neoplasia maligna (0,1%) foram observados. Assim, se torna possível evidenciar a importância do exame citológico no processo de diagnóstico de neoplasias malignas do colo uterino, sendo essencial para que haja um melhor controle e um rastreamento adequado, vislumbrando um diagnóstico precoce eficaz. Demonstra também o perfil dos indivíduos atendidos pelo Laboratório de Anatomia Patológica e Citopatologia do HEAA, bem como a abrangência deste serviço para diagnóstico precoce do câncer de colo de útero na região Norte e Noroeste Fluminense.

Palavras-chave: Coleta de dados; Citologia; Patologia.

INTRODUCTION

Cervical cancer occurs in the cells of cervix, located in the lower part of the uterus that connects to the vagina (FRITZ et al., 2000). With approximately 570 thousand new cases per year in the world, cervical cancer is the fourth most common cancer among women. It is responsible for 311 thousand deaths per year, being the fourth most frequent cause of cancer death in women (BRAY et al., 2018). In Brazil, in 2020, 16,710 new cases were expected, with an estimated risk of 15.38 cases per 100,000 women. It is the third most common primary location of incidence and the fourth of cancer mortality in women in the country, without considering non-melanoma skin cancer (INCA, 2020).

Cytology is a type of medical examination that allows analysis under the microscope of cells collected from a specific tissue or organ in the body. It evaluates the appearance of cells, their growth and their function. In general, cytology is used to search for malignant or potentially malignant changes. The examination methodology will depend on the organ under study (MURAD & KATZ, 1996; LEITÃO et al., 2008). Preventive cytology is the cervical oncotic colpocytological exam or Pap Smear. Among the detection methods, it is considered the most effective and efficient to be applied collectively in cervical cancer screening programs, being a widely investigated and widespread technique for more than 40 years (INCA 2012; INCA 2006).

In Brazil, cytopathological examination is the screening strategy recommended by the Ministry of Health, primarily for women between 25 and 59 years old. It is estimated that Pap Test can reduce about 80% in mortality of cervical cancer in women aged between 25 to 65 years old and detect precursor lesions with a high potential for malignancy or in situ carcinoma. Therefore, it is necessary to guarantee the organization, completeness and quality of the screening program, as well as the monitoring of patients (LEITÃO et al., 2008).

The colpocytopathological reports of the public services bring a uniform terminology based on the Bethesda System of the National Institute of Health of the United States, according to the following aspects: suitability of the collected material, descriptive diagnosis of cellular changes and analysis of existing microbiology. These reports are stored in the Cervical Cancer Information System (SISCOLO), developed by the Informatics Department of the Unified Health System (DATASUS) and by the Brazilian National Cancer Institute (INCA), which makes it possible to identify women with positive exams for precursor lesions (cervical intraepithelial neoplasia) and cervical cancer, as well as their follow-up until effective treatment. Therefore, it is the result of the cytopathological and histopathological reports that define whether the woman will be followed up by the primary, secondary or tertiary level of care (INCA 2012; INCA 2006).

Thus, preventive cytology is applied as a strategy for early diagnosis (approaching people with signs and/or symptoms of the disease) and

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screening (application of a test or examination in an asymptomatic, apparently healthy population, to identify suggestive cancer lesions and refer it for investigation and treatment). The test used in screening must be safe, relatively inexpensive and easily accepted by the population. It also needs to have proven sensitivity and specificity, in addition to a favorable cost-effectiveness ratio (FONTHAM et al., 2020).

Therefore, due to the growing demand for cytopathological exams at the Laboratory of Pathological Anatomy and Cytopathology at HEAA, the present study aims to carry out a systematic assessment of gynecological preventive cytopathological exams, analyzing the profile of the population using the service and the most incident pathologies, in addition to its impact on the North and Northwest Fluminense region.

OBJECTIVE

To collect sociodemographic and clinicopathological data from patients, who underwent cervical cytopathological examinations at the Laboratory of Pathological Anatomy and Cytopathology at the Hospital Escola Álvaro Alvim, for a period of five years, considering a retrospective and longitudinal observation of the data.

METHODS
Study design

An epidemiological, observational, descriptive and retrospective study, composed of 121,044 patients who underwent gynecological preventive cytopathology exam at the Laboratory of Pathological Anatomy and Cytopathology of Hospital Escola Álvaro Alvim (HEAA), in Campos dos Goytacazes, from January 2014 to December 2018. It is a non-interventionist study since this research used sociodemographic and clinicopathological data collected from electronic records.

Patients over 18 years old, who underwent cytopathological examinations at the Laboratory of Pathological Anatomy and Cytopathology at HEAA and that contained electronic records in the system were included in the study. Those who had incomplete cytopathological exam requisition data, who did not have the electronic record or those who underwent cytopathology with insufficient or incompatible reports were excluded from the study.

The approval for the study was obtained from the institutional Research Ethics Committee

(ref: 34937320.8.0000.5244).

Data analysis

The variables were handled and analyzed anonymously and the results resulting from the study were presented in an aggregated way, not allowing the individual identification of the participants.

All the information collected in the registration form from the analysis of medical records and from the database of the Laboratory of Pathological Anatomy and Cytopathology at HEAA was gathered in a spreadsheet prepared using the Excel software (Microsoft Office). The sociodemographic and clinicopathological variables were presented as proportions and averages, using graphs and tables, with the aid of the SPSS program (Statistic Package for Social Sciences) version 20.0 for Windows.

RESULTS

This retrospective study evaluated 121,044 patients who underwent gynecological preventive cytopathology exam between 2014 and 2018 at the HEAA (Figure 1).
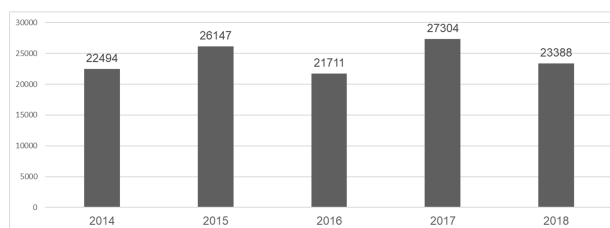

Figure 1: Number of preventive gynecological cytopathology exams surveyed per year by the Laboratory of Pathological Anatomy and Cytopathology at HEAA, from January 2014 to December 2018 (No. = 121,044)

Sociodemographic and clinicopathological data were collected and it was observed that women, coming from Campos dos Goytacazes (84.7%), over 40 years old (56.8%) were the most prevalent at the service. The median age was 48 years and ranged from 18 to 99 years old (Table 1).
The most prevalent cytological characteristics were absence of atrophy (83.6%) or metaplasia (92.6%) of the uterine epithelium, presence of microorganisms – mainly bacilli and cocci, Candida spp., Trichomonas vaginalis, Lactobacillus spp. (96.4%) and inflammation (97.2%) (Table 1).

Atypical cells were present without evidence of malignancy in only 6.5% of patients. The types of atypical cells found were squamous cells of

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undetermined significance, possibly non-neoplastic (ASC-US), in 65.4% of cases, followed by atypical squamous or glandular cells of undetermined significance. It could not be excluded high-grade lesions (ASC-H or AG-H) in 33.3% of patients, and atypical glandular cells of undetermined significance, possibly non-neoplastic (AG-US), in only 1.3% of patients (Table 1).

In relation to squamous intraepithelial lesions, they were diagnosed in 2% of patients, where low grade squamous intraepithelial lesions (LSIL – CIN-1) predominated in 51.9% of cases, followed by high-grade squamous intraepithelial lesions (HSIL – CIN-2 or CIN-3) in 44.4%. There were 3.7% cases of squamous cell carcinoma or adenocarcinoma (in situ or invasive) that were diagnosed through cytopathological examination (Table 1).

Thus, 91.5% of the results concluded the negative diagnosis for cervical cancer, followed by suggestive or inconclusive for this neoplasm (8.4%), and positive for uterine cervix cancer in only 89 cases (0.1%) (Table 1).

Table 1 : Sociodemographic and clinic   opathological   characteristics of the patients (No. = 121,044).

VARIABLE	CATEGORY	No.	%
AGE	<40 years	52291	43.2%
	≥40 years	68753	56.8%
CITY	Campos dos Goytacazes	102524	84.7%
	Others	18520	15.3%
EPITHELIAL ATROPHY	Absent	101193	83.6%
	Present	19851	16.4%
EPITHELIAL METAPLASIA	Absent	112086	92.6%
	Present	8958	7.4%
MICROBIOLOGY	Absent	4358	3.6%
	Present	116686	96.4%
INFLAMMATION	Absent	3389	2.8%
	Present	117655	97.2%
ATYPICAL CELLS	Absent	113237	93.5%
	Present	7807	6.5%
TYPE OF ATYPICAL CELLS	ASC -H or AG -H	2600	33.3%
	ASC -US	5106	65.4%
	AG-US	101	1.3%
INTRAEPITHELIAL LESION	Absent	118640	98%
	Present	2404	2%
INTRAEPITHELIAL LESION GRADE	LSIL (CIN -1)	1247	51.9%
	HSIL (CIN -2 or CIN -3)	1068	44.4%
	Squamous Cell Carcinoma or Adenocarcinoma	89	3.7%
CERVICAL CANCER	Absent	110833	91.5%
	Suggestive or Inconclusive	10122	8.4%
	Present	89	0.1%

DISCUSSION

In view of the comparison of the results obtained, from the present work, and according to the most current literature, some considerations are necessary. The Pap Smear is considered the most appropriate, practical and low-cost instrument for the screening of cervical cancer. However, even though it is a simple, fast and inexpensive procedure, there are still women without access to this exam. Consequently, this fact contributed to a late diagnosis, preventing the detection of precursor malignant lesions (MATÃO et al., 2011; MENEZES et al., 2014).

The frequency of exams should be every three years, after two negative results with an annual interval. The collection should start at 25 years old for women who have already had sexual activity. The exams must continue until the age of 64 and be interrupted when, after that age, women have had at least two consecutive negative exams in the last five years (INCA, 2011; NASCIMENTO, et al., 2012). In contrast, according to the present study carried out at the Laboratory of Pathological Anatomy and Cytopathology at HEAA, Campos dos Goytacazes, it was observed that most women were over 40 years old, which directly reflects the finding of injuries. These findings emphasize the importance of performing periodic Pap Smears in women in perimenopause, due to the significant proportion of precursor lesions developed in this age group (CALAZAN et al., 2008; GUPTA et al., 2008; YAMAMOTO et al., 2009; CARVALHO et al., 2014).

According to the findings of this study for cytological atypia, ASC-US (65.4%) were the most prevalent in this population, followed by ASC-H or AG-H (33.3%), corroborating data from other studies (CARVALHO et al., 2014; FREDRICH & RENNER, 2019; RODRIGUES & MORAES, 2020). It is believed that the highest occurrence of ASC-US may be associated with HPV infection and the presence of CIN-1 (ROSENDO et al., 2018). However, ASC-H is more dangerous, it is usually related to the appearance of HSIL in about 12% to 68% of cases and cervical cancer in approximately 1.3% to 3% of cases (INCA, 2016; RODRIGUES & MORAES, 2020).

Regarding intraepithelial lesions, LSIL predominated, followed by HSIL (51.9% and 44.4% respectively) and only 89 women had cervical cancer (3.7%) in our study. This greater prevalence of LSIL among intraepithelial lesions, which normally affects younger women (≥30 years), was also observed by BUFFON et al., 2006; CARVALHO et al., 2014; RODRIGUES & MORAES, 2020. Older women who do not perform the screening with adequate frequency and need more invasive tests, such as colposcopy, to establish their definitive diagnosis, are the most affected by more severe lesions, such as HSIL or

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cervical cancer (Squamous Cell Carcinoma or Adenocarcinoma) (BUFFON et al., 2006; CARVALHO et al., 2014; RODRIGUES & MORAES, 2020).

The preventive cytology is an important method for the detection of cervical cancer, especially when performed under strict internal and external quality control. The set of diagnostic findings considered to be precursors of cervical cancer in early stages, plays an important role in the disease evolution process (GUPTA et al., 2008; YAMAMOTO et al., 2009). Corroborating several studies, our data also reinforce the need for guidance campaigns, follow-up of patients and planning of future actions for the improvement and effectiveness of sexually transmitted diseases preventive programs (BUFFON et al., 2006; GUPTA et al., 2008; YAMAMOTO et al., 2009; FIGUEREDO et al., 2014; RODRIGUES & MORAES, 2020).

CONCLUSION

Based on our results, we concluded that women from Campos dos Goytacazes over 40 years old were the most prevalent at the Laboratory of Pathological Anatomy and Cytopathology at HEAA. The presence of atypical cells (ASC-US, AG-US, ASC-H/ AG-H), intraepithelial lesions (low and high-grade) and cervical cancer were observed through cytopathological examination, showing the importance of preventive gynecological examination in the diagnostic process of malignant neoplasms of the cervix.

This survey helps to draw a profile of the patients treated by the Laboratory of Pathological Anatomy and Cytopathology at HEAA and, above all, it contributes to prevention, screening and early diagnosis programs of cervical cancer, covering not only Campos dos Goytacazes, but also the entire North and Northwest Fluminense region.

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