

# The prevalence of intraepithelial lesions in preventive examinations carried out in the “legal amazon” region

## A prevalência da lesão intraepitelial em exames preventivos realizados na região da amazônia legal

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### Abstract

**Introduction:** Cervical cancer is a public health problem, and tracking of the disease must follow a set of organized programmed actions, with populations and periodicity defined. **Objective:** Identifying the prevalence of intraepithelial lesions in preventive examinations performed in the municipality of Sinop-MT between 2010 and 2013. **Methods:** Statistical data obtained using the DATASUS/SISCOLO system were used. **Results:** When considering the descriptive diagnosis for cellular alterations, 412 and 167 altered exams with low- and high-grade intraepithelial lesions (respectively) were found. The prevalence of both low-grade (25.45%) and high-grade (10.32%) intraepithelial lesions were higher outside of the recommended age range (25-64 years). **Conclusions:** Studies on the prevention of cervical cancer are extremely relevant in order to analyze the coverage of screening in areas served by basic health units and to understand the factors associated with non-adherence of women to preventive examination. It is noteworthy that during the time period analyzed, women in the municipality of Sinop did not fulfill the municipal goal.

**Keywords:** Disease prevention. Cervical Neoplasia. Cervix Diseases.

### Resumo

**Introdução:** O câncer do colo do útero é um problema de saúde pública e o rastreamento dessa doença deve seguir um conjunto de ações programadas, organizadas com populações e periodicidade definidas. **Objetivo:** este estudo teve como objetivo identificar a prevalência da lesão intraepitelial em exames preventivos coletados no município de Sinop-MT, entre 2010 e 2013. **Métodos:** Estudo retrospectivo realizado no Município de Sinop. Os dados utilizados foram obtidos por meio do sistema DATASUS/SISCOLO, entre 2010 e 2013. As variáveis analisadas foram: número de exames citopatológicos dentro dos limites de normalidade, lesão intraepitelial de baixo grau (LIBG) e lesão intraepitelial de alto grau (LIAG) e faixa etária de 25 a 64 anos. **Resultados:** ao considerar o diagnóstico descritivo para alterações celulares, foram constatados 412 e 167 exames alterados com lesão intraepitelial de baixo e alto grau, respectivamente. Tanto a prevalência de lesão intraepitelial de baixo grau (25,45%), quanto de alto grau (10,32%), foram maiores fora da faixa etária preconizada (25 a 64 anos). Portanto, estudos sobre a prevenção do câncer do colo do útero são de extrema relevância, a fim de analisar a cobertura do rastreamento em áreas atendidas pelas unidades básicas de saúde e compreender os fatores associados à não adesão das mulheres à realização do exame preventivo. **Conclusão:** Ressalta-se que o município de Sinop nos quatro anos analisados não cumpriu a meta municipal.

**Palavras-chave:** Prevenção de doenças. Neoplasia cervical. Doenças do colo do útero.

### INTRODUCTION

Cervical cancer is the second most frequent tumor occurring in the female population, second only to breast cancer, and it is the fourth largest cause of cancer deaths in Brazil<sup>1</sup>. Women's freedom and independence, which have been associated with the use of oral contraceptives, have allowed an increase in the number of sexual partners and contributed to a higher rate of sexually transmitted infections (STIs) associated with cervical intraepithelial neoplasia<sup>2</sup>.

Cancer is a neoplasia that presents a high rate of incidence and mortality; however, it can be curable when diagnosed in its early stages<sup>3</sup>. In countries where uterine cancer mortality remains high, most women who develop such cancer either did not perform exams or did so at inadequate intervals<sup>4</sup>.

Human papillomavirus (HPV) infection is an important causal

factor for intraepithelial neoplasms of the lower genital tract, and its distribution is associated with the early onset of sexual activity with multiple partners<sup>5,6</sup>. Lesions of the cervical epithelium undergo several stages before becoming an invasive carcinoma<sup>7</sup>.

It is believed that almost all deaths from cervical cancer could be avoided if women and their health professionals adhered to the recommendations of screening and follow-up for the disease<sup>8</sup>. In view of this, the Ministry of Health recommends, as a priority strategy, prevention among women between the ages of 25 and 64 years by performing the Papanicolaou test<sup>9</sup>.

In Bethesda, Maryland, USA in 1988, a cervical cytology classification system with uniform terminology was created to facilitate the clinical management of cervical intraepithelial

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**Conflict of interest:** There is no conflict of interest on the part of any of the authors.

Received: 2018 Feb 19; Revised: 2018 Sep 26; 2018 Oct 26; Accepted: 2018 Oct 30

neoplasia (CIN). This same system was reviewed in 2001, resulting in a new classification, in which NIC I would be low-grade squamous intraepithelial lesions (LSIL) associated with HPV infection, and II and III CINs would include high-grade squamous intraepithelial lesions (HSIL)<sup>10</sup>.

Despite advances in primary health care and in the entire Unified Health System (SUS), as well as greater coverage of the Pap smear, indicators of the presence of cervical cancer have not diminished in Brazil; as a result, the reduction of incidence and mortality from this neoplasm are yet to be fulfilled<sup>11</sup>. In view of this information, this study aimed to identify the prevalence of intraepithelial lesions in preventive examinations performed in the municipality of Sinop-MT between 2010 and 2013.

## METHODS

A retrospective study was conducted in the city of Sinop. The data used were obtained by using and information was gathered between 2010 and 2013. The variables analyzed were the number of exams and smears within the bounds of normality, low-grade intraepithelial lesions (LIBG) and high-grade intraepithelial lesions (LIAG), and the age group of 25 to 64 years. Preventive examinations with unsatisfactory results and women with squamous cell diagnoses, atypical squamous cells of undetermined significance (ASCUS), carcinoma invasive results altered epidermis, and changes relating to microbiology were excluded.

In the presentation and analysis of results, cervical changes were defined as cervical intraepithelial lesions of the following types: reports of low-grade squamous metaplasia, immature, high-grade intraepithelial lesion, and atypical squamous cells of indeterminate meaning (possibly not neoplastic). The database was organized in the Microsoft application Worksheet.

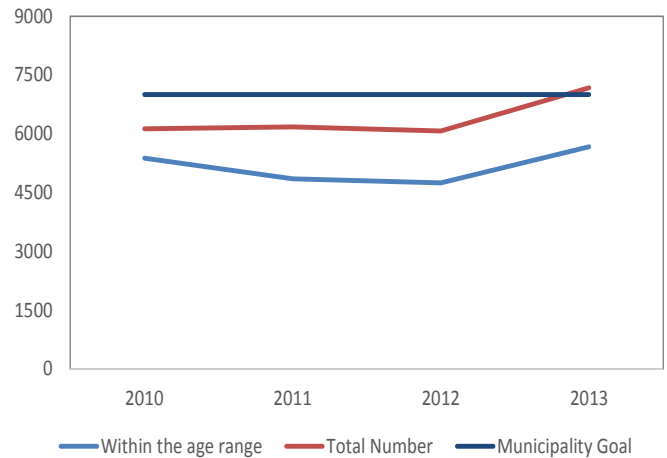
## RESULTS

Figure 1 shows the number of preventive exams performed in the municipality of Sinop-MT between 2010 and 2013, both in total and within the recommended age range (25 to 64 years), as well as the proposed goal.

During the study period, 25,543 tests were carried out in the municipality of Sinop, as the target set by the Ministry of Health (7,000 samples) was not reached for the age group of 25 to 64 years. In 2010, the municipality reached only 76.83% of the target, with 5,378 preventive tests collected from individuals in the age group of 25 to 64 years, representing a deficit of 23.17%. In 2011, there was a decrease of 7.54% in the number of samples collected (4,850), a number which fell even more in 2012 (9.07% in relation to 2010), representing a total of 4,743 tests in the age group in question. It was also verified that in 2013, there was a significant increase in the number of tests in relation to previous years (5,669) within the recommended age range, and, considering the total number of preventive cases collected in the municipality (7,172), this exceeded the target; however, this was not relevant because it was outside of the

recommended age range.

**Figure 1.** Preventive examinations performed in the municipality, total examinations, and examinations within the recommended age range (25 to 64 years). Sinop, MT, Brazil, 2010 to 2013 (Source: BRASIL, 2014<sup>(12)</sup>).



In order to evaluate the prevalence of intraepithelial lesions, the preventive tests collected within normal parameters (based on LSIL and HSIL, according to the Bethesda Classification) for the recommended ages - 25 to 64 years - were analyzed (Table 1). In 2010, only 58.40% of the exams collected were within the limits of normality, which requires microbiological findings that are part of the vaginal flora and do not characterize infections that require treatment<sup>9</sup>. As shown, among the disorders, 15.67% were LSIL and 5.98% were HSIL. In 2011, 67.06% of the exams were considered within normal limits, with 12.75% classified as LSIL and 7.45% as HSIL. In 2012, 64.49% of the exams were considered within normal limits. Among the changes, 14.95% were LSIL and 8.10% were HSIL. In 2013, 55.15% of the exams collected were considered within the limits of normality; 13.96% were LSIL and 10.98% were HSIL. When considering the period of this study, Table 1 also shows that 2011 had the highest number of LSILs (118), with an increase of 18.18% in relation to 2010 and 27.08% less than in the 2012 to 2013 time period. In relation to the HSIL numbers, 2013 was the highlight year, with an increase of 72.72% in relation to 2010.

For better understanding, Table 2 shows the number of preventive exams collected in the municipality of Sinop-MT from 2010 to 2013 considering the recommended and non-recommended age groups, as well as the numbers of LSIL and HSIL within the normal range. Considering the descriptive diagnosis for cellular alterations, there were 412 exams altered for LSIL and 167 for HSIL. These numbers are concerning when analyzing only those tests that showed signs of intraepithelial lesions, as they are not the only tests that characterize this problem. It is enough to see that in 2010, only 21 cases were diagnosed with HSIL, and 55 with LSIL; 205 presented within normality. Analyzing this way, HSIL is a concern, as LSIL are lesions that, in more than half of cases, regress spontaneously within 6 to 18 months.

In 2010, there were 27.40% positive cases, with 19.57% LSIL and 9.8% HSIL. Following the same line of reasoning, on average, the incidence of probable patients who are within the recommended age group and show changes are 16.88% LSIL

and 9.80% HSIL. In this study, it was found that prevalence of both LSIL (25.45%) and HSIL (10.32%) are higher outside the recommended age range (Figures 2 and 3).

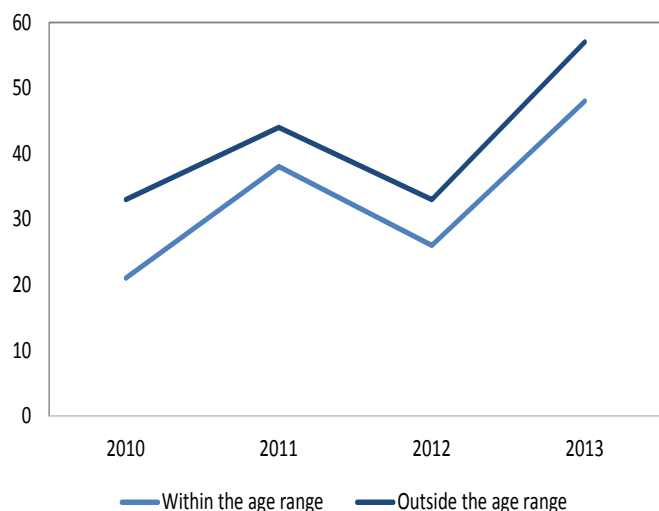
**Table 1.** Number of preventive examinations within the parameters of normality, number of LIBG and LIAG, according to Bethesda classification according to the recommended age (25 to 64 years). Sinop, MT, Brazil, 2010 to 2013.

Anos	Dentro da normalidade	Lesão Intraepitelial de Baixo Grau	Lesão Intraepitelial de Alto Grau
2010	208	110	33
2011	348	118	44
2012	212	76	33
2013	272	108	57
Total	1.040	412	167

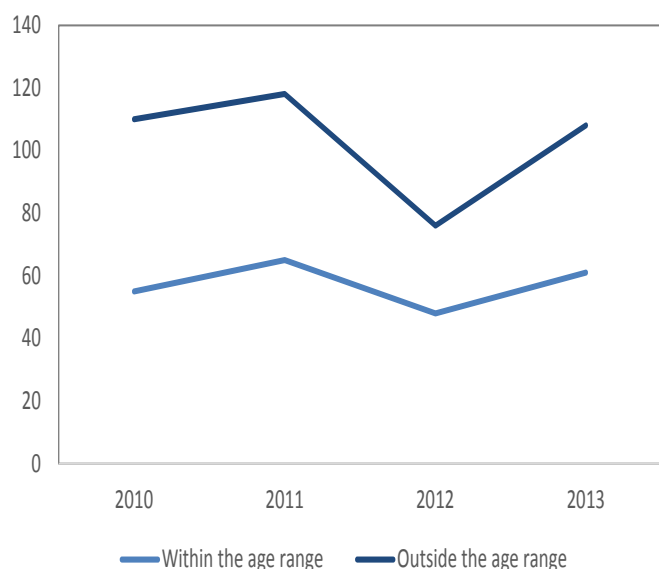
**Table 2.** Number of preventive exams collected considering the recommended age range and not recommended, and the results: within normal limits, LIBG and LIAG. Sinop, MT, Brazil, 2010 to 2013

Resultado	nº de Exames Preventivos Realizados fora da Faixa Etária	nº de Exames Preventivos de Acordo com a Faixa Etária Preconizada
2010		
Dentro da Normalidade	208	205
LIBG	110	55
LIAG	33	21
Total	351	281
2011	348	342
Dentro da Normalidade		
LIBG	118	65
LIAG	44	38
Total	510	445
2012	212	207
Dentro da Normalidade		
LIBG	76	48
LIAG	33	26
Total	321	281
2013	272	241
Dentro da Normalidade		
LIBG	108	61
LIAG	57	48
Total	437	350

**Figure 2.** Distribution of the number of preventive exams collected with HSIL results, within and outside of the recommended age group (25 to 64 years). Sinop, MT, Brazil, 2010 to 2013 Source: BRASIL, 2014<sup>12</sup>.



**Figure 3.** Distribution of the number of preventive exams collected with LSIL results, within and outside the recommended age range (25 to 64 years). Sinop, MT, Brazil, 2010 to 2013 Source: BRASIL, 2014<sup>12</sup>.



In a study carried out in the city of Rio Branco-AC<sup>13</sup> in 2007 and 2008, it was found that women belonging to other age groups with active sexual lives were targeted by the prevention program; however, there was less adherence to the exam, among those both younger and older than the target age range (25 to 64 years); this was also observed in the current study.

The treatment of women with LSIL prevents the development of more serious injuries. This also occurs with HSIL, as a decrease in incidence from 2011 to 2012 was observed, probably due to treatment. The initial lesions showed a higher incidence in

younger women, as they did not undergo previous intervention; however, more advanced lesions arose from precursor lesions that could have been treated. The literature indicates that the highest incidence of cervical cancer is among women between the ages of 40 and 60 years, while it is not common among women under 20 years of age. However, 90% of cases of cervical cancer are related to HPV, with the highest contamination prevalence seen in young women between the ages of 15 and 25 years, the period of sexual onset<sup>14,15</sup>.

The association between age at onset of sexual activity and invasive cancer cannot be ignored; it helps to know the history of HPV infection when preventing the precursor lesions of invasive disease. Each country defines the initial age of screening according to the prevalence of HPV infection, invasive carcinoma, and precursor lesions by age group. Among younger women, although the percentage of invasive neoplasia is negligible, there is a high percentage of cervical intraepithelial lesions, with a high percentage of high-grade lesions. Additionally, it is possible that these women present a latency time between HPV infection and the development of cervical lesions<sup>16,17</sup>.

Cervical cancer takes approximately 10 years to develop from the onset of sexual activity; the occurrence of invasive carcinoma in very young women is rare and does not constitute sufficient evidence to alter current recommendations and public health policy of the Ministry of Health, which recommends that women aged 25 years and over be screened<sup>15</sup>.

However, as shown in Table 2, it is noted that alterations related to HSIL also reach, in greater numbers, women outside the recommended age range, calling the attention of the Ministry of Health to focus campaigns on women who are beginning to engage in sexual activity in order to prevent LSIL from progressing to HSIL via early screening.

## CONCLUSIONS

This study shows the total number of preventive exams performed among the women in the municipality of Sinop in the extreme north of Mato Grosso from January 2010 to December 2013. This way, it was possible to quantify the number of preventive exams collected and the prevalence of low-and high-grade intraepithelial lesions.

Data were obtained using the DATASUS/SISCOLO system, as in the municipality there is no control or record of the quantity or results of exams performed in the basic health units. Thus, a need to create a registry book of these exams was identified, which could facilitate control and quantification with the objective of implementing health education.

The objectives of this study were achieved, given that the prevalence of intraepithelial lesions was identified in the

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registries evaluated; this is of concern, especially outside of the recommended age range, because this part of the population is not the focus of preventive actions against cervical cancer. It is important to highlight that the municipality did not meet the goals regarding cervical cancer screening during the study period, which makes it possible to state that the numbers could be even higher.

Because the prevalence of cervical cancer precursor lesions vary with age, natural history, and outcome of preventive intervention, this study found that low-grade intraepithelial

lesions have a higher incidence in younger women due to the onset of sexual activity and promiscuity, and resulting contact with the HPV virus.

Thus, the analyses of the preventive tests carried out suggest some proposals for improving women’s health care in the municipality of Sinop-MT. These include the planning of actions that encourage adolescent women to perform, on a regular basis, the Papanicolaou test, as the female population outside of the recommended age range was the group with the highest number of both low-and high-grade lesions.

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### How to cite this article/Como citar este artigo:

Jezus SV, Masochini RG, Cunha AN, Oliveira V. The prevalence of intraepithelial lesions in preventive examinations carried out in the “legal amazon” region. J Health Biol Sci. 2019 Jan-Mar; 7(1):9-13.