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Original Article

VISUAL INSPECTION IN CERVICAL CANCER SCREENING: AN INTEGRATIVE REVIEW

INSPEÇÃO VISUAL NO RASTREAMENTO DO CÂNCER DE COLO UTERINO: UMA REVISÃO INTEGRATIVA

INSPECCIÓN VISUAL EN EL CRIBADO DEL CÁNCER DE CUELLO UTERINO: UNA REVISIÓN INTEGRADORA

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RESUMO

Objetivo: descrever a eficiência dos testes de inspeção visual com ácido acético (IVA) e Schiller no rastreio do câncer de colo uterino. **Método:** revisão integrativa, realizada nos meses de janeiro a março de 2020, nas bases de dados PubMed, BIREME, MEDLINE (EBSCO), BDENF – Enfermagem e SciELO, buscando responder à pergunta de pesquisa: "Os testes de inspeção visual IVA e Schiller têm mostrado-se eficientes no rastreio do câncer de colo uterino?". **Resultados**: surgiram 96 artigos resultantes da busca, 15 duplicatas e, ao final, após a leitura na íntegra, seis estudos foram selecionados conforme o objetivo. Evidenciaram-se a necessidade de métodos alternativos no rastreamento do câncer de colo uterino e que os testes de inspeção visual tiveram destaque entre os métodos. **Conclusão:** esta revisão identificou a importância de testes alternativos no rastreamento do câncer de colo uterino, todavia, descarta a exclusão da Colpocitologia Oncótica (CO) e indica a necessidade de mais estudos.

Palavras-chave: Exames Ginecológicos; Saúde da Mulher; Lesões Intraepiteliais Escamosas Cervicais.

ABSTRACT

Objective: to describe the efficiency of the acetic acid visual inspection (AVI) and Schiller tests in screening for cervical cancer. **Method:** an integrative review, conducted from January to March 2020, in the PubMed, BIREME, MEDLINE (EBSCO), BDENF - Nursing and SciELO databases, seeking to answer the research question: "Have the AVI and Schiller visual inspection tests been shown to be efficient in screening for cervical cancer?" **Results:** There were 96 articles resulting from the search, 15 duplicates and, in the end, after reading the full text, six studies were selected according to the objective. Evidenciaram-se a necessidade de métodos alternativos no rastreamento do câncer de colo uterino e que os testes de inspeção visual tiveram destaque entre os métodos. **Conclusion:** this review identified the importance of alternative tests in cervical cancer screening, however, it rules out the exclusion of oncotic colpocytology (OC) and indicates the need for further studies.

Keywords: Gynecological Exams; Women's Health; Squamous Cervical Intraepithelial Lesions.

RESUMEN

Objetivo: describir la eficacia de las pruebas de inspección visual con ácido acético (IVA) y Schiller en el rastreo de cáncer de cuello uterino. **Método**: revisión integrativa, realizada de enero a marzo de 2020, en las bases de datos PubMed, BIREME, MEDLINE (EBSCO), BDENF - Enfermería y SciELO, buscando dar respuesta a la pregunta de investigación: "Las pruebas de inspección visual IVA y Schiller han demostrado ser eficaz

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en la detección del cáncer de cuello uterino?". **Resultados:** de la búsqueda surgieron 96 artículos, 15 duplicados y, al final, luego de leerlos íntegramente, se seleccionaron seis estudios según el objetivo. Se evidenció la necesidad de métodos alternativos para el rastreo del cáncer de cuello uterino y entre los métodos se destacaron las pruebas de inspección visual. **Conclusión**: esta revisión identificó la importancia de las pruebas alternativas en el rastreo del cáncer de cuello uterino, sin embargo, descarta la exclusión de la Colpocitología Oncótica (CO) e indica la necesidad de realizar más estudios.
Palabras clave: Exámenes Ginecológicos; Salud de la Mujer; Lesiones Intraepiteliales Escamosas Cervicales.

INTRODUCTION

Cervical cancer is among the diseases that most affect women worldwide, standing out in the number of cases among underdeveloped countries, where access to prevention and to programs that detect cancer are insufficient.[1]

This type of cancer evolves more slowly, with a high incidence in women in their 40s and 50s. Etymologically, this cancer is related to infection by the Human Papilloma Virus (HPV - Human Papillomavirus), comprising 99.7% of cases.[2] Studies have shown that there are lesions on the cervix that precede cancer and show that these dysplasias can occur a decade before cancer sets in and that they can be detected by cytological examination, with biopsy confirmatory of the result.[3]

Cervical cancer can be reduced if there is quality screening and good coverage of the female population, with the incidence reduced by about 90% of cases.[4] Since the 1940s, oncotic cytology (Pap smear) has been a reference for the prevention and screening of this disease, and is considered the gold standard for this category.[5]

The Pap test has reduced the rates of new cases of cervical cancer, however, some aspects have limited its efficiency, such as insufficient sample collection, low sensitivity and misinterpretation of the diagnosis.[6] New research has been conducted around the world with the intention of seeking alternatives that can remedy these shortcomings and improve cervical cancer screening.[7]

The method of cervical evaluation by visual inspection has relevant and positive aspects in the screening of cancer precursor lesions, as well as the visual inspection of the cervix after the application of acetic acid (AVI) has shown promise in this sense, since it is a test of simple manipulation in which the training of professionals becomes less complex. It is a rapid, sensitive, low-cost test, and the reading occurs immediately after the application of acetic acid, which contributes to minimize the limitations of Oncotic Colpocytology (OC), including loss to follow-up and treatment abandonment.[8]

Visual inspection tests have a positive highlight for lower income and less educated populations, since the application of acetic acid can be performed by trained non-medical health professionals, reducing personnel costs and allowing coverage to be expanded.[9]

Another visual inspection test that has proven to be efficient is Schiller's test, described in 1928 by Walter Schiller, in which iodine is used in the evaluation of the cervix, applied to the cervix and vagina with Lugol's solution and modified Gram.[10-11]

The way these tests are performed and factors such as cost of materials, labor, turnaround time, instantaneous reading, and rapidity of diagnosis make these tests important and relevant within cervical cancer screening programs,[12] therefore, proof of the efficacy of these tests is fundamental for their use as an effective and satisfactory practice in Uterine Cervical Cancer (UCC) screening.

In search of alternative methods for cervical cancer screening, the Schiller and AVI tests have been adopted in some countries. In view of the above, we aimed to describe the efficiency of the IVA and Schiller visual inspection tests in cervical cancer screening based on the research question: "Have the AVI and Schiller visual inspection tests proved efficient in cervical cancer screening?".

METHOD

This is a study with data collection from secondary sources, from the synthesis of knowledge, with the incorporation of the applicability of the results of significant studies in practice, called an integrative review.[13] This study was financed by the authors themselves.

After delimiting the subject and formulating the research question, which questions the efficiency of alternative cervical cancer screening methods, specifically the AVI and Schiller tests, the objective, keywords and descriptors were defined.

The search was conducted through the databases: CAPES periodicals; PubMed; BIREME; MEDLINE (EBSCO); BDENF - Nursing and SciELO. The descriptors used were: gynecological exams; cervical squamous intraepithelial lesions; colposcopy; acetic acid and lugol, using the Boolean operator AND.

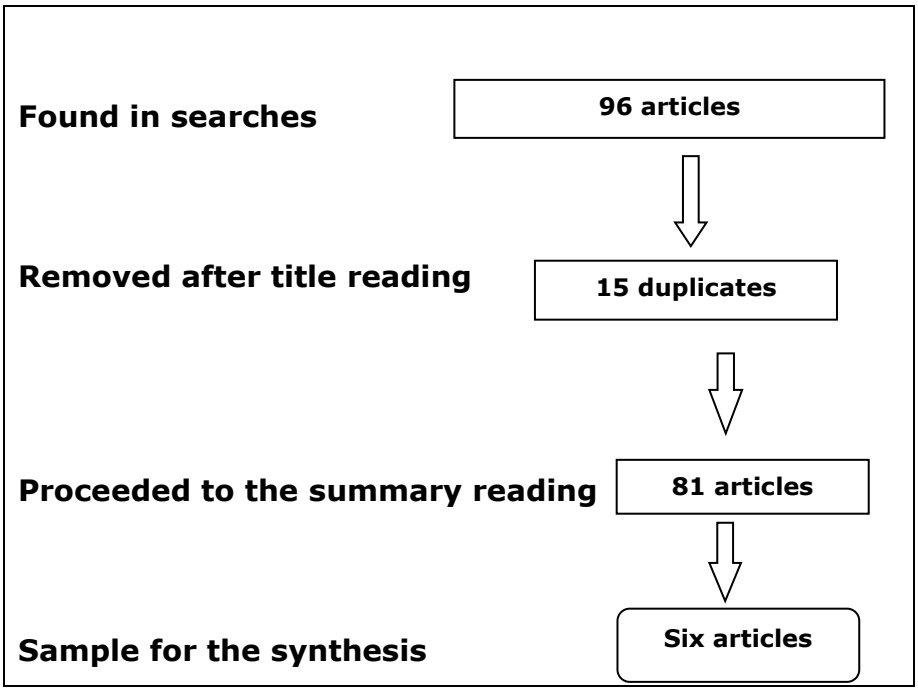
The sample was selected after reading the titles, which should contain information about the research topic. Next, duplicates were removed and then the abstract was read for the inclusion or exclusion of the study in the research. The inclusion criteria were: complete studies, without language restriction, that answered the research question, excluding only duplicates.

After collecting the data, the results of the articles included in the research were summarized, evaluated and critically analyzed, comparing them to the existing literature on the subject.

RESULTS

Considering the order of the integrative review steps, the results of the database searches are arranged as follows: PubMed - two articles; LILACS - 25 articles; MEDLINE - 57 articles; BDENF - Nursing - six articles; SciELO - six articles, resulting in 96 productions. Of these, 15 duplicates were removed, leaving a total of 81 articles. In the reading phase of the titles, following the research question of the integrative review, a total of six studies were selected.

Figure 1 - Flowchart of the search process



When the search was performed using the descriptors cited, 96 articles were found, which proceeded to the relevance analysis phase. The studies went on to the abstract reading phase, which resulted in the results shown in figure 1. 75 articles were excluded, since they did not clearly contemplate the methodology and contained insufficient results to answer the research question of this study.

The included articles were read in full and the results analyzed in order to find answers to the research question posed in this study. These results are described in chart 1, with data on publication, authors, year, and type of study.

Chart 1 - Description of the results obtained in the articles included in the review

Title of the article and authors, year	Database and Journal	Type of study	The AVI and Schiller tests have proven to be efficient in screening for cervical cancer?
Sarian et al. 2005. Evaluation of AVI, Lugol's iodine, cervical cytology and HPZ test as cervical screening tools in Latin America	LILACS Public Health Notebooks	Descriptive	The study showed that IVA tests indicate better efficacy associated with OCC.[15]
Cordeiro, Costa, Andrade, Brandão VRA, Santana, 2005. Visual inspection of the uterine cervix after application of acetic acid in the screening for intraepithelial neoplasias and HPV-induced lesions	SciELO Rev Braz Obstet Ginecol	Descriptive and qualitative	AVI was much more sensitive than colpocytology in screening for CIN and HPV-induced lesions and performed as well as colposcopy. Its low specificity was responsible for a high number of false-positive results.[9]
Russo, 2008. Diagnostic Performance of the Schiller Test in the Program for Prevention and Early Detection of Cervical Cancer in São José-SC	SciELO Repository- UFSC	Descriptive	The association (OC and ST) may be useful as a screening method for cervical cancer, not in isolation, and further studies are needed to better assess its validity.[16]
Gontijo et al., 2004. Evaluation of Alternative Methods to Cytology in the Screening of Cervical Lesions: Detection of DNA-HPV and Visual Inspection	SciELO RBGO	Descriptive	The performance of the AVI-associated OC was better than that of the CH II-associated OC and then that of the isolated OC.[17]
Galvane et al., 2002 AVI findings for cervical cancer screening	LILACS STD, Brazilian J	Descriptive and qualitative	Visual inspection with acetic acid can help in identifying precursor lesions of cervical cancer by increasing the sensitivity of the colpocytology.[18]
Gontijo et al., 2005 Oncology Cytology, Hybrid Capture II hybridization II and visual inspection in screening for cervical lesions	PubMed Public Health N., Rio de Janeiro	Descriptive and qualitative	The use of alternative techniques, such as AVI, associated with cytology could result in improved detection of cervical lesions.[19]

DISCUSSION

In Brazil, the test for detection and screening of cervical cancer is systematized and offered free of charge by the Unified Health System (UHS) in which, on demand, women seek care at the Basic Health Unit (BHU). The OC is the exam recommended by the Ministry of Health and aims to track changes in the cervix. Several studies have shown that the earlier precursor lesions of

cervical cancer are detected, the better the chances of treatment and cure. Errors in reading the exam, samples with unsatisfactory collection and abandonment in the follow-up are the main obstacles to the success of this type of screening.[20]

Characterization of the studies

The six studies included in the research were conducted from the year 2002, and the most recent was published in 2008, i.e., more than ten years ago, evidencing the need for new studies. Three studies were descriptive, two descriptive-qualitative, and one descriptive-quantitative. The studies included women from the South, Southeast and Northeast regions of Brazil, mostly in the state of São Paulo.

Applicability of the tests

It was noted that visual inspection tests, in particular the AVI acetic acid visual inspection and the Schiller Test, were used for study purposes only, and there is no evidence that they are used routinely in cervical cancer screening in Brazil.

Still on the applicability of the tests, only in some cases of alteration in the cytological exam are these tests indicated, despite the low cost, the simplicity in interpreting the result, and the immediate response. However, it was a consensus among the authors that failures in the interpretation and misreading of the results may decrease the effectiveness of the results.

Sensitivity

When it comes to the sensitivity of a test, there is greater sensitivity when there are fewer tests with false-negative results, so that if the patient receives a negative result, he or she has a greater chance of not having the disease in question.[19]

According to the selected studies, the visual inspection tests were more sensitive in screening for lesions and abnormal findings when compared to OC, with colposcopy being used as counterevidence for these findings. The sensitivity of the AVI and Schiller tests were high. In one study, for example, about 79% of women with abnormal results on the visual inspection test had abnormal epithelial cells confirmed by biopsy. Thus, the author advocates the use of this method as an alternative for accuracy in the detection of premalignant lesions.[18]

Specificity

The more specific a test is, the greater the safety of the patient who has tested positive, that is, the one who receives a positive diagnosis has a greater chance of actually having the disease.[19]

The low specificity revealed in the studies on these tests showed high numbers of false-positives, which could generate unnecessary early treatment of healthy women, thus increasing the excessive number of cauterizations in these women.

However, it was observed in one study that 172 out of 671 women with at least one of the abnormal tests did not return for colposcopy, which could justify immediate treatment, even if excessive, highlighting the importance of visual inspection tests as alternative methods in screening, given the importance of follow-up treatment at the first visit. Thus, the large losses in follow-up would justify this action.[17]

Visual inspection x OC x histopathological tests

Visual inspection tests are usually performed together with another procedure in the gynecological evaluation. In these respects, the findings indicate that there is great affinity between the results of the visual inspection tests compared with the histopathological study.

However, all the studies in this review demonstrated the importance of OC in cervical cancer screening and that alternative tests do not exclude the need for this gynecological examination, inferring that visual inspection tests alone do not guarantee satisfactory screening and are only effective when associated with the recommended tests.

CONCLUSION

In this review, it was possible to identify the importance of alternative tests for cervical cancer screening, highlighting the Schiller and IVA tests as efficient, low-cost, and quick-to-read methods, which allow decision making from the first visit. However, it is stated that these methods are complementary and, therefore, OC is not ruled out in cervical cancer screening.

The findings also indicate that the efficient use of Schiller's and AVI tests depends on the training of the professionals responsible for practicing this procedure in order to follow the reading standards and reduce interpretation errors.

This study has limitations, since the articles found were conducted more than ten years ago, indicating the need for new clinical studies on the use of Schiller's and AVI tests for cervical cancer screening.

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