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Original Research Article

Effectiveness of Swede Score in Detection of Cervical Premalignant Lesions

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Abstract

Background & Methods: The aim of the study is to study the Effectiveness of Swede Score in Detection of Cervical Premalignant Lesions. Participants had to be women who were sexually active, at least 30 years old, had abnormal vaginal discharge, had a positive Pap smear/ VIA /VILI, had postcoital or postmenopausal bleeding, and had postcoital or postmenopausal bleeding. Women who were pregnant, women who had a visible growth on the cervix, women who had cervical intraepithelial neoplasia (CIN) or cervical cancer in the past or after treatment, women older than 30 years or older than 65 years were not allowed to participate.

Results: In our study, a total of 3 286 women were screened for cervical precancerous lesions. Screening VIA yielded a positive result in 201 of the women, and after determination of their Swede score, colposcopically oriented biopsies were performed in these women. The majority of participants were between 30 and 40 years old (34.8%), followed by 40 to 50 years old (29.9%), 21 to 30 years old (21.4%), and 50 to 65 years old (13.9%). Third parity was noted in 30.9% of patients, followed by second parity in 26.4%. Abnormal vaginal discharge was complained by 64 (31.8%) of the women, followed by abdominal pain reported by 57 (28.4%) of the women. eighty-six patients, or 42.8% of the total, had a Swede score in the range of 7-10; 115 of the women had a Swede score of less than six (group A), and 86 of the women had a score of more than six (group B). According to the histologic report, the majority of women in both groups, 72 patients in group A and 31 patients in group B, had coilocytic and inflammatory changes (chronic cervicitis).

Conclusion: It is imperative that immediate attention be paid to the matter of making cervical cancer screening available to all women in India. According to the findings of this research, it is evident that a Swede score of 8 or higher has a specificity of one hundred percent and that it is possible to implement a "see and treat" strategy at this threshold for the treatment of direct excision if one chooses to do so. This strategy can be advised for the treatment of high-grade CIN because it cuts down on the number of clinic visits and the percentage of patients who do not receive therapy.

Keywords: Swede Score, Cervical, Premalignant & Lesions.

Study Design: Observational Study.

Introduction

In India, cervical cancer is the second most common cancer of the genital tract in women after breast cancer. [1] Because the preinvasive stage lasts for a long time, the disease can be diagnosed and prevented using a variety of screening procedures. These include the Pap smear, HPV DNA testing, liquid-based cytology (LBC), visual inspection with acetic acid (VIA), and visual inspection with Lugol's iodine (VILI). Both detecting and preventing cervical cancer can be accomplished with the use of these screening methods. Although the use of routine screening with the Pap smear is unchallenged in the majority of initiatives designed to prevent cervical cancer, multiple studies have demonstrated that the sensitivity of a single Pap smear for cervical intraepithelial neoplasia (CIN) 2/3 is substantially lower than previously believed. This is the case despite the fact that routine screening with a Pap smear is still the test that is considered to be the gold standard. A single Pap smear has a sensitivity that is significantly lower than sixty percent, as determined by the findings of a meta-analysis [2]. [source: missing citation]

The correct selection of women with abnormal cervical smears to undergo cervical biopsy in order to exclude the possibility of invasive cervical cancer is an essential and challenging aspect of clinical practise. The patient will undergo this process in order for a diagnosis to be made regarding whether or not they have cervical cancer. In this particular setting, colposcopy has been demonstrated to be a very helpful instrument in directing the biopsy. In the year 1925, a physician named Hans Hinselmann from Altona, Germany, came up with the concept [3,4]. Because of this, we are able to obtain precise biopsies not only from areas that may be dysplastic or potentially concerning but also from growths that are readily apparent. In contrast, it is not practical to perform a biopsy on each patient in a developing nation due to the restricted availability of medical resources. Colposcopy and guided biopsy are procedures that need to be performed on any woman whose cytologic findings are concerning or signal the existence of preinvasive lesions. When it comes to establishing a diagnosis, the biopsy procedure is regarded as the gold standard. Colposcopy has been made more objective with the implementation of scoring systems, which also help to detect high-risk situations. [5]

The modified RCI, which is also referred to as the Reid Colposcopic Index, is the scoring system that is used for colposcopy the most frequently, and it is comprised of four different parts. In an effort to standardise the practise of colposcopy, Strander and his colleagues have established a new scoring system that they call the Swede score. This method was named after the country of Sweden. (6,7) This score took into consideration the size of the lesion as a variable to be rated in addition to the four parameters that comprised the modified Reids colposcopy index. The utilisation of this one-of-a-kind grading system can unquestionably lead to improved colposcopy findings as a consequence of the increased accuracy it possesses. In particular, it has the ability to detect or rule out high-grade lesions, lessen the requirement for a biopsy, and contribute to early improved diagnosis and treatment of patients. By evaluating the diagnostic accuracy of colposcopy utilising the Swede score and finding the degree of association between the Swede colposcopy score and biopsy results, the purpose of this study is to evaluate the diagnostic accuracy of colposcopy using Swede score and to determine the degree of correlation between Swede colposcopy score and biopsy results to improve efficacy of prevention of cervical cancer and decrease the number of unnecessary biopsies.

Material & Method

The study was conducted in the Department of Obstetrics and Gynaecology, MGM Medical University and Maharaja Yashwantrao Holkar Hospital, Indore, Madhya Pradesh. It was a prospective cross-sectional study. The women who visited the outpatient clinic, were between 30 and 65 years of age, met the inclusion criteria and gave their consent to participate in the study formed the study population. The study will be conducted over a one-year period beginning on October 1, 2020, and ending on September 30, 2021. Participants had to be women who were sexually active, at least 30 years old, had abnormal vaginal discharge, had a positive Pap smear/ VIA /VILI, had postcoital or postmenopausal bleeding, and had postcoital or postmenopausal bleeding. Women who were pregnant, women who had a visible growth on the cervix, women who had cervical intraepithelial neoplasia (CIN) or cervical cancer in the past or after treatment, women older than 30 years or older than 65 years were not allowed to participate.

After participants were selected based on inclusion criteria, a discussion of the study procedure, an explanation of the risks, and informed consent were obtained before the VIA was performed. Participants were asked to assume the lithotomy position, the perineal area was disinfected with betadine solution, a Cusco speculum was inserted, and the cervix was visualised. The cervix was first irrigated with normal saline. Then, the cervix was treated with acetic acid at a concentration of 5% for 60 seconds. The cervix was then viewed with a Borze 3500 colposcope at six times magnification, and the findings were recorded. (Figure 1 shows a typical cervix with no acetowhite area, while Figure 2 shows a dense acetowhite area.) Lugo's iodine, also known as VILI, was then applied to the cervix (iodine uptake is normal in Figure 3, while it is negative in Figure 4).

During the period covered by the study, a total of 3286 women were screened for premalignant lesions of the cervix. Of these women, 201 tested positive for the presence of VIA. Subsequently, a colposcopic examination was performed in each of them, in which the Swede score (Table 1) was determined based on five criteria. These parameters were the pattern of acetowhite uptake, the surface or borders of the acetowhite region, the size of the lesion, the vascular pattern, and the pattern of iodine staining. A colposcopy-assisted biopsy was then performed. The cervix was cleaned again with normal saline, and then the patient was treated according to the procedure established in our department.

After that, the tissue obtained from the biopsy was sent for histological examination. The values obtained were tabulated and then compared with the histological diagnosis, which corresponded to the respective value. They were divided into two groups: Group A with a score of less than six and Group B with a score between six and twelve on the Swedish scale. Specificity and sensitivity of the two groups were evaluated, and statistical analysis was

performed using the Statistical Package for Social Sciences (SPSS) version 20 computer programme.

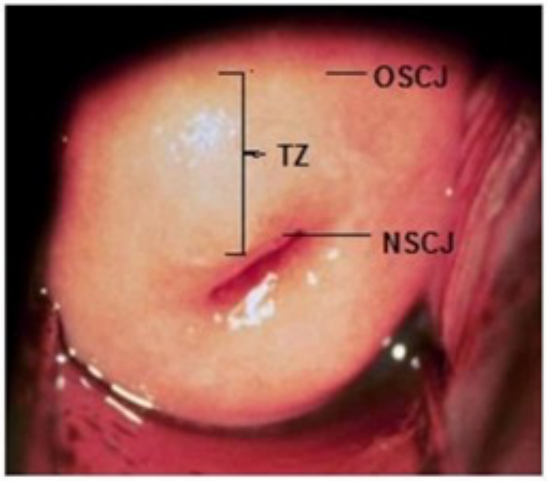

Figure 1: Normal cervix, original squamocolumnar junction (OSCJ), new squamocolumnar junction (NSCJ), transformation zone (TZ)

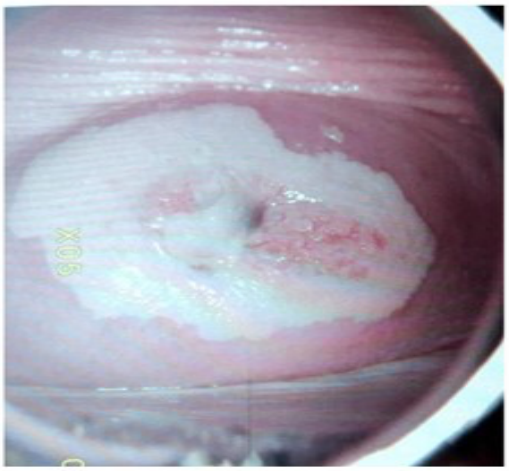

Figure 2: Distinctly opaque acetowhite area with sharp margins

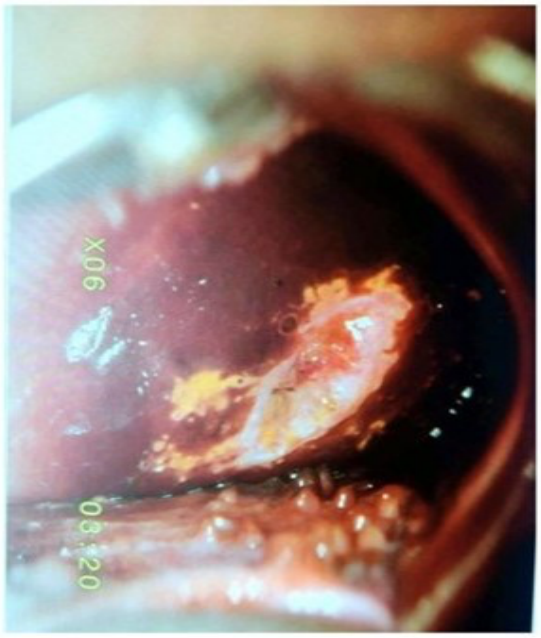

Figure 3: Normal or positive iodine uptake after application of Lugol's iodine

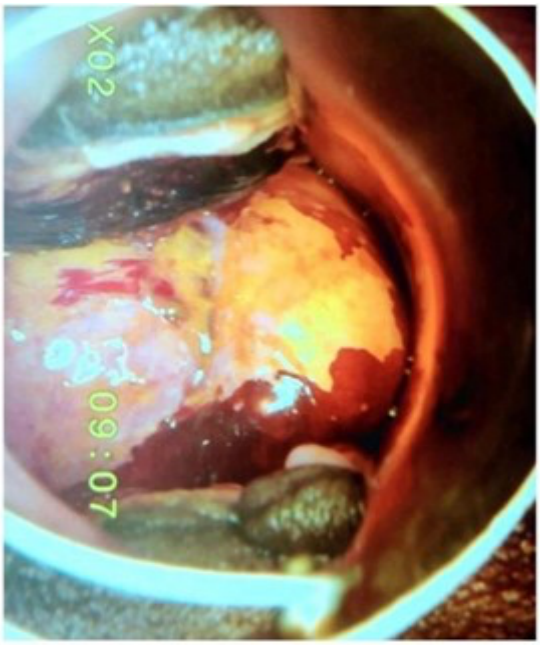

Figure 4: Iodine negative area which do not stain after application of Lugol's iodine and appear as mustard yellow area

Results

In our study, a total of 3 286 women were screened for cervical precancerous lesions. Screening VIA yielded a positive result in 201 of the women, and after determination of their Swede score, colposcopically oriented biopsies were performed in these women. The majority of participants were between 30 and 40 years old (34.8%), followed by 40 to 50 years old (29.9%), 21 to 30 years old (21.4%), and 50 to 65 years old (13.9%). Third parity was noted in 30.9% of patients, followed by second parity in 26.4%. Abnormal vaginal discharge was complained by 64 (31.8%) of the women, followed by abdominal pain reported by 57 (28.4%) of the women. eighty-six patients, or 42.8% of the total, had a Swede score in the range of 7-10; 115 of the women had a Swede score of less than six (group A), and 86 of the women had a score of more than six (group B). According to the histologic report, the majority of women in both groups, 72 patients in

group A and 31 patients in group B, had coilocytic and inflammatory changes (chronic cervicitis).
Histopathology revealed that only benign disease was present in group A, whereas histopathology findings in group B showed both benign and malignant pathologies.
In group A, 72 patients were diagnosed with chronic cervicitis, but only 11 of them had CIN 1. In group B, 31 patients were diagnosed with chronic cervicitis, and 29 of them had CIN 1.
In group B, nine had CIN 2, 12 had CIN 3, and only five had invasive cancer. Therefore, it was concluded that biopsy is not necessary when the Swede score is low (below 6), but biopsy is necessary when the Swede score is above 6 to rule out high-grade lesions and invasive malignancy.
1. The sensitivity and specificity for the diagnosis of CIN1 with a Swede total score greater than or equal to 6 were 33.7% and 90.4%, respectively.
2. The sensitivity and specificity of the test for the diagnosis of CIN2 with a Swede total score of greater than or equal to 6 were 10.4% and 100%, respectively.
3. The sensitivity and specificity for the diagnosis of CIN3 with a Swede total score greater than or equal to 6 were 13.9% and 100%, respectively.
4. The sensitivity and specificity for the diagnosis of invasive cancer with a Swede total score greater than or equal to 6 were 5.8% and 100%, respectively.

Discussion

In India, a significant public health issue is cervical cancer, which primarily affects women who are in the perimenopausal stage of their lives. Unfortunately, this issue is frequently disregarded by people. The sociodemographic information of the people who participated in our study was strikingly similar to that of subjects who participated in earlier investigations. The age range of the people who participated in our research was between 26 and 65 years old, and the mean age of the population was 39.8 years old. The standard deviation was 9.95 years. The participants in the study that was carried out by Kushwah B et al [8] had a mean age of 40.05 7.84 years, and 56.25 percent of the women were between the ages of 30 and 39 at the time of the research. The participants in the study that Ibrahim Shifa and colleagues carried out in Tamilnadu in 2005 ranged in age from 21 to 90 years old, and the average age of the people who took part in the research was 41.46 years [9]. According to the results of our research, the two are related. In a different study that R. Ranga and colleagues carried out, all of the participants were female and ranged in age from 30 to 59, with a mean age that was the same for both groups. Our age profile was similarly similar to that of earlier research, which found an increasing risk for cervical cancer in women who were approaching the age of 40.

The majority of women were perpetual (parity 3: 30.9% and parity 2: 26.4%), which was consistent with the findings of another study by Rahman Zakia et al., in which 93.3% of patients had parity 2 (perennial) and 34.2% had parity 3 [11]. The majority of women were perennial (parity 3: 30.9% and parity 2: 26.4%). It should also be mentioned that our research was in line with the findings of R. Sankaranarayan et al., who found that 45.4% of patients were perennial, having had parity 3 or 4 [12].

The current study included the participation of a total of 3,286 female participants. The existence of VILI was confirmed in 201 (6.11%) of these women, and among these 201 women, 10.44% had high-grade lesions (CIN2+). According to the findings of the research project that was carried out by Gupta at the medical facility located in Kolkata, screening for VILI produced a positive result in 17.83% of the patients, and according to Soni et al., 2.68% of the patients had CIN2+. [Another study by Ibrahim Shifa and colleagues in Tamilnadu found that 75% of all cases were categorised as "chronic cervicitis." This diagnosis was made for 51.2% of the participants in our study after analysing the 472 samples that were provided. 1.69 percent of cases were found to have LSIL (low-grade squamous intraepithelial lesion), 5.08 percent of cases were found to have HSIL (high-grade squamous intraepithelial lesion), and 6.44 percent of cases were found to have squamous cell carcinoma grade II [9]. According to the findings of our research, these percentages were, respectively, 19.9%, 10.4%, and 2.48%. Eighty-seven percent of the lesions were categorised as noncoilocytic, nondysplastic, inflammatory, or CIN-I lesions, whereas thirteen percent of the lesions were categorised as malignant (CIN-II, CIN-III, or malignant). This is comparable to the findings of a study that was carried out by Usmani K. and colleagues, in which 77.2% of the lesions were categorised as being benign and 22.8% of the lesions were categorised as being malignant [14]. In a different study [8] was out by Kushwah B. and Kushwah S., it was discovered that 70.7% of lesions were of a benign nature.

The Swede score is broken down in Table A based on the different kinds of pathology that were discovered on the HPE. A benign condition was most usually related with a Swede score of less than 6, and this was true in more than 90% of the instances. According to the evidence presented, the Swede score and certain cut-off values would have eliminated the requirement for biopsies in the situations at hand. To our knowledge, the Swede score has only ever been applied in a total of two separate research projects. The score separated low-grade lymphoma and normal outcomes from high-grade lymphoma and malignancy in the first trial, which included 297 Swedish women with atypical

cytologic findings. The study looked at malignancy and high-grade lymphoma. Additionally, HGL was found with a detection score of at least eight and a specificity of at least ninety percent. [15] The second study, which included a total of 200 women who were either colposcopied as outpatients or hospitalised for CIN in London, demonstrated that a Swede score of 8 or lower had a specificity of at least 95% when it came to detecting HGL [16]. The participants in this study were either treated for CIN as outpatients or admitted to the hospital for the condition.Information that is therapeutically beneficial includes the fact that we were able to consistently detect that a biopsy was not necessary based on a low Swede score (less than six). A Swede score of less than 6 was proposed as a suitable threshold for deciding whether or not a biopsy was necessary. This was because the specificity for diagnosing CIN1 was 90.4%, while the specificity for detecting CIN2 and CIN3 and invasive cancer was close to 100%. Despite this, the sensitivity was not particularly high. Research were out in the United Kingdom revealed a specificity that was comparable to that of other studies but a sensitivity that was marginally lower [10]. Therefore, a cut-off value of 6 would dramatically lower the proportion of persons who require extensive biopsy to rule out the chance of having a malignant condition. Additionally, we looked at how well the Swede score performed for CIN1 and CIN2+ patients on their own and compared the results. Cases of CIN1 can be treated in the usual manner, while patients with CIN2+ are the only ones who need a biopsy to rule out the presence of invasive cancer.

Conclusion

It is imperative that immediate attention be paid to the matter of making cervical cancer screening available to all women in India. According to the findings of this research, it is evident that a Swede score of 8 or higher has a specificity of one hundred percent and that it is possible to implement a "see and treat" strategy at this threshold for the treatment of direct excision if one chooses to do so. This strategy can be advised for the treatment of high-grade CIN because it cuts down on the number of clinic visits and the percentage of patients who do not receive therapy. If a lady has unusual cytology and a trained colposcopist does a colposcopy on her and finds that she has a low Swede score (less than six), this indicates that a biopsy is not required to detect the condition. If your Swede score is greater than or equal to six, your physician ought to suggest a guided biopsy in order to exclude CIN1 and other high-grade lesions from the differential diagnosis. It is suggested that additional biopsies or LEEP resection/conization be conducted if the Swede score is less than 8. This is done in order to rule out the possibility of an early invasive form of cancer being present.

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