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Reid Colposcopic Index versus Swede score for Cervical Cancer Screening - A Comparative Prospective Study

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Abstract

Background & Methods: The aim of the study is to study Reid Colposcopic Index versus Swede score for Cervical Cancer Screening. After exposing the cervix, naked eye examination of the cervix was done to look for polyp,nabothian cyst, atrophy, inflammation/ infection, leukoplakia, condyloma, ulcer, growth and any obvious lesions in the vaginal orifice.

Results: Most common indication for colposcopy was suspicious looking cervix in 38/124 (30.6%) of the participants followed by high risk HPV DNA positive group in 34/124 (27.4%) of the participants, VIA and VILI screen positive in 31/124 (25.0%) and abnormal cytology in 13/124 (10.5%). 08/124 (6.5%) of the participants had both abnormal cytology and high risk HPV DNA positivity. In our population, we are not completely relying on cytological report and High risk HPV DNA report for starting treatment if there is any suspicion of premalignant or malignant lesion in the cervix.

Conclusion: Colposcopic indices, such as the Reid score, performed well in terms of sensitivity and specificity in the evaluation of cervical pathology and had a good correlation with the results of the histological examination. The swede score, on the other hand, had better sensitivity and a better negative predictive value for CIN I lesions, which ultimately improved as the severity of the lesions rose to CIN2+. Thus, swede score just by incorporating an additional parameter of Lesion size has better histopathological correlation which prevents over-diagnosis of cervical pathology.

Keywords: Reid, Colposcopic, Swede, Cervical, Cancer & Screening.

Study Design: Prospective Observational Study.

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Introduction

Despite ranking fourth globally, cervical cancer is India's second most common cancer among women[1]. It has a lengthy precancerous period during which various screening techniques can provide an early diagnosis. In countries without such screening programmes, the risk of developing cervical cancer ranges between 3% and 6.5%, compared to 1% in areas with Pap smear screening[2]. Numerous studies have demonstrated that the sensitivity of a single Pap test for highgrade cervical intraepithelial neoplasia of grade 2 or worse (CIN2+) lesions is poor, despite the fact that the pap smear is still the screening test used in the majority of cervical cancer prevention programmes[3]. For the purpose of identifying premalignant and malignant cervix lesions, high-risk human papillomavirus (HPV) deoxyribonucleic acid testing (HPV-DNA) has lately grown significantly in popularity due to its increased sensitivity of 84% to 97%. However, this testing is expensive[4-5]. As a result, we now routinely perform a triple test in the outpatient department to screen for cervical cancer, which includes pap smear testing, visual inspection with acetic acid (VIA), and visual inspection with lugol's iodine (VILI). Triage and biopsy-based diagnosis confirmation are required for all screening techniques. In this case, colposcopy was extremely useful in determining the best biopsy site. Colposcopy, a simple, non-invasive OPD procedure, remains the gold standard[6-7].

Interobserver differences have been minimized using colposcopic scoring techniques like Reid's colposcopic index (RCI) and Swede scores because they help in determining the location, size, and extent of abnormal cervical lesions. The Reid Colposcopic Index (RCI), created by Reid and Scalzi to lessen subjectivity in colposcopic diagnosis, is currently the most popular scoring method[8-9]. However, when the threshold was raised to include high-grade lesions, RCI's sensitivity increased to 89%, but dropped to 56% when it was set at any lesion. Low-grade lesions had a 57.5% specificity, while high-grade lesions had a 92.9% specificity.In recognition of the correlation between the size of the lesion and its tendency to include high-grade disease, Strander et al. created a new scoring system, the Swede score[10]. It integrates lesion size as a variable in addition to the RCI's different parameters. The specificity for identifying CIN2+ lesions was found to be as high as 95% in Strander's original study. Several Research have employed it[11-12]. Ranga et al.'s study found that both scores performed well, but that the swede score had the benefit of including lesion size,

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which makes it easier for medical professionals to judge the effectiveness of treatment modalities. For screening, a smaller threshold with higher sensitivity can be used.

Material and Methods

Women attending outpatient department (OPD) of Obstetrics and Gynecology at All India Institute of Medical Sciences, Raipur between age 25-60 years fulfilling the inclusion and exclusion criteria and giving informed and written consent were enrolled for the study. In the OPD, a comprehensive general, systemic, and pelvic exams were performed after taking a thorough history. Pelvic examination included P/S, P/V, VIA, VILI, PAP smear, HPV-DNA (only in suspicious cases). Patient with abnormal screening result were subjected for colposcopy. The findings were noted for Reid colposcopic index and swede score both and cervical biopsy was taken either from the abnormal site or random based upon the colposcopic findings.

Study population: All patients attending gynecology OPD of age 25 to 60 years with abnormal screening results.

Study Duration: 1 year (2021-2022)

Inclusion criteria:

1) Age 25-60 years with abnormal screening result
    - Pap smear with atypical squamous cells of undetermined significance (ASCUS) or worse
    - Positive high risk HPV deoxyribonucleic acid(hrHPV-DNA)
    - Positive VIA and VILI
2) Suspicious-looking cervix

Exclusion Criteria

1) Inadequate colposcopy
2) Any visible growth on cervix/ vagina
3) Patients who had cervical surgery in the past (e.g., excision biopsy, cryotherapy, conization, LEETZ)
4) History of pelvic irradiation

Result

Table 1: Distribution of participants according to 'Age Group'

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Age Group	N	%
25-30 Years	16	12.9
31-40 Years	49	39.5
41-50 Years	36	29.0
51-60 Years	23	18.5
TOTAL	124	100

Majority of the participants (49/124) belonged to age group between 31-40 years (39.5%) followed by 36/124 of 41-50 years (29.0%) Youngest and eldest participant present studies were of 25 and 60 years of age respectively.

Table 2: Distribution of participants according to 'Parity'

Parity	N	%
Nulligravida	4	3.2
P1	22	17.7
P2	58	46.8
P3	30	24.2
P4	6	4.8
P6	2	1.6
P7	1	0.8
P8	1	0.8
TOTAL	124	100

In our study, 58/124 (46.8%) of the participants had parity of 2 and 01/124 (0.8%) had parity of 8. 4/124 (3.2%) were Nulligravida.

Table 3: Distribution of participants according to 'Chief Complaints'

Chief Complaints	N	%

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Chief Complaints	**N**	**%**
Asymptomatic	32	25.8
White Discharge Per Vaginum	46	37.1
Post Coital Bleeding	2	1.6
Postmenopausal Bleeding	6	4.8
Heavy Menstrual Bleeding	3	2.4
Intermenstrual Bleeding	3	2.4
Irregular Menstrual Cycle	8	6.5
Pain in abdomen	16	12.9
Pain in abdomen, white discharge per vaginum	5	4.0
Pain in abdomen, heavy menstrual bleeding	2	1.6
Pain in abdomen, irregular menstruation	1	0.8
TOTAL	124	100

Majority of our patient 46/124 (37.1%) had chief complaint of white discharge per vaginum followed by which most of the patients were asymptomatic 32/124 (25.8%) on their first visit who found to have screen positive for cervical cancer.

16/124 (12.9%) of the participants came with complaint of pain in abdomen while only 02/124(1.6%) had complaint of postcoital bleeding and many of the participant presented with menstrual complaint and many had multiple complaint.

So, in our population most common symptom of cervical cancer is found to be white discharge per vaginum. Screening for cervical cancer is especially important in our population as 25.8% of the participant were asymptomatic.

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Table 4: Distribution of participants according to 'High Risk HPV DNA'

High Risk HPV DNA	N	%
Positive	42	33.9
Negative	51	41.1
NOT DONE	31	25.0
TOTAL	124	100

In this study, 51/124 (41.1%) of the participants were high risk HPV DNA negative and 42/124 (33.9%) were high risk HPV DNA positive while 31/124 (25%) have not done high risk HPV DNA testing.

Among High risk HPV DNA positive group, 32/124 were HPV 16 positive while only 02/124 were HPV 18 positive and many of the participants were positive for two High risk HPV DNA and majority of them were HPV 16 positive along with the other High risk HPV DNA group.

In our population, most of the participant are at risk of HPV 16 group as among high risk HPV DNA positive group and not all women coming for cervical cancer screening are doing High risk HPV DNA testing as it is an expensive test and also not a mandatory test to rule out cervical cancer as other cheap and feasible screening options are also available.

Table 5: Distribution of participants according to 'Indication for Colposcopy'

Indication For Colposcopy	N	%
Abnormal Cytology	13	10.5
High Risk HPV DNA Positive	34	27.4
Suspicious Looking Cervix	38	30.6
VIA and VILI screen positive	31	25.0
Abnormal cytology, high risk HPV DNA positive	8	6.5
TOTAL	124	100.0

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In our study, most common indication for colposcopy was suspicious looking cervix in 38/124 (30.6%) of the participants followed by high risk HPV DNA positive group in 34/124 (27.4%) of the participants, VIA and VILI screen positive in 31/124 (25.0%) and abnormal cytology in 13/124 (10.5%).

08/124 (6.5%) of the participants had both abnormal cytology and high risk HPV DNA positivity.

In our population, we are not completely relying on cytological report and High risk HPV DNA report for starting treatment if there is any suspicion of premalignant or malignant lesion in the cervix.

Discussion

This study was done in the department of Obstetrics and Gynecology, AIIMS Raipur from May 2021 to December 2022 which included all patients between 25-60 years fulfilling any one of the inclusion criteria that included abnormal cytology, high risk HPV DNA positive, suspiscious looking cervix, VIA and VILI screen positive. All the patients were then subjected to colposcopy and based on the colposcopic findings, both RCI and swede score were calculated after which cervical biopsy (either from the abnormal site or random biopsy) was taken and sample sent for histopathological examination.

Based on the histopathological report of cervical biopsy which is the goldstandard in diagnosing cervical premalignant or malignant lesions, RCI and swede score were compared to know which score is better for early detection of premalignant or malignant lesions of the cervix[13].

In a study by Renu Ranga et al., with a mean age of 40.03 8.1 (range, 30-59) (n = 45, 30%), they discovered that the bulk of their patients were between the ages of 30 and 3444[14].

According to Urmila Karya et al research, Ages 31 to 40 made up the largest age category for women (41.6%), followed by ages 41 to 50 (27.6%) 45 parallel to our study where majority of them belonged to age group between 31-40 years (39.5%)[15].

According to a study by Zakia Rahman et al., the majority of their patients (56.2%) were between the ages of 30 and 40, with a mean age of 37.63±6.71 46 parallel to our study.

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In this study, 29.0% women completed high school, 26.6% had only completed elementary school, 4% had an intermediate level of education, 19.4% were graduate, 16.9% were illiterate and 4.0% were postgraduate which shows more prevalence of cervical cancer among women who are less educated[16].

A study conducted by Ramadevi et al. where 65% (11/17) of women with CIN were found to be illiterate50while majority of the patients in our study have completed their education upto high school(29.0%). 49.6% belonged to class III and 24.4% to class IV in our study.

Urmila Karya et al. found that the majority of women had low socioeconomic level (121, 48.4%) or middle status (125, 50%) parallel to our study. Olayinka Babafemi Olaniyan showed in their study that the emergence of dyskaryosis was definitely influenced by low socioeconomic standing 51 similar to our study. In our study, 38.7% had rural Residence and 61.3% had urban Residence.

Urmila Karya et al. study indicated a slight rural preponderance (53.2% versus 46.8%) between rural and urban areas while in our study majority of the women had urban residence which showed that women living in rural area have less feasibility to hospital. Women living in rural area have been associated with increased risk for cervical cancer so they need even more screening.

In Urmila Karya et al. study, most women (237, 94.80%) got married between the ages of 18 and 25 but 5 women (2.0%) got married before they turned 18 years old45while in our study, age at marriage ranged from 13-30 years with the mean (SD) Age at Marriage (Years) of 19.50 (3.28) and the median(IQR) age at marriage(years) of 19.00 (17-22) which tells that early age at marriage increases the risk of early exposure to HPV infection.

Conclusion

Colposcopic indices, such as the Reid score, performed well in terms of sensitivity and specificity in the evaluation of cervical pathology and had a good correlation with the results of the histological examination. The swede score, on the other hand, had better sensitivity and a better negative predictive value for CIN I lesions, which ultimately improved as the severity of the lesions rose to CIN2+. Thus, swede score just by incorporating an additional parameter of Lesion size has better histopathological correlation which prevents over-diagnosis of cervical pathology.

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References

1. Ferlay J, Soerjomataram I, Dikshit R, et al. Cancer incidence and mortality worldwide: Sources, methods and major patterns in GLOBOCAN 2012. Int J Cancer 2015;136:E359–

2. Sasieni P, Adams J. Effect of screening on cervical cancer mortality in England and Wales: analysis of trends with an age period cohort model. BMJ 1999;318:1244–5.

3. Lăără E, Day NE, Hakama M. Trends in mortality from cervical cancer in the Nordic countries: association with organised screening programmes. Lancet 1987;1:1247–9.

4. Christopherson WM, Lundin FE, Mendez WM, et al. Cervical cancer control: a study of morbidity and mortality trends over a twenty-one-year period. Cancer 1976;38:1357–66.

5. Arbyn M, Sankaranarayanan R, Muwonge R, et al. Pooled analysis of the accuracy of five cervical cancer screening tests assessed in eleven studies in Africa and India. Int J Cancer 2008;123:153–60.

6. Miller AB, Lindsay J, Hill GB. Mortality from cancer of the uterus in Canada and its relationship to screening for cancer of the cervix. Int J Cancer 1976;17:602–12.

7. JohannessonG, Geirsson G, Day N. The effect of mass screening in Iceland, 1965–74, on the incidence and mortality of cervical carcinoma. Int J Cancer 1978;21:418–25.

8. Reid R, Stanhope CR, Herschman BR, et al. Genital warts and cervical cancer. IV. A colposcopic index for differentiating subclinical papillomaviral infection from cervical intraepithelial neoplasia. Am J Obstet Gynecol 1984;149:815–23.

9. Reid R, Scalzi P. Genital warts and cervical cancer. VII. An improved colposcopic index for differentiating benign papillomaviral infections from high-grade cervical intraepithelial neoplasia. Am J Obstet Gynecol 1985; 153:611–8.

10. Strander B, Ellström-Andersson A, Franzén S, et al. The performance of a new scoring system for colposcopy in detecting high-grade dysplasia in the uterine cervix. Acta Obstet Gynecol Scand 2005;84:1013–7.

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11. Kärrberg C, Ryd W, Strander B, et al. Histological diagnosis and evaluation of the Swede score colposcopic system in a large cohort of pregnant women with atypical cervical cytology or cervical malignancy signs. Acta Obstet Gynecol Scand 2012;91:952–8.

12. Bowring J, Strander B, Young M, et al. The Swede score: evaluation of a scoring system designed to improve the predictive value of colposcopy. J Low Genit Tract Dis 2010;14:301–5.

13. Underwood M, Arbyn M, Parry-Smith W, De Bellis-Ayres S, Todd R, Redman C, et al. Accuracy of colposcopy-directed punch biopsies: a systematic review and meta-analysis: Systematic review of the accuracy of punch biopsies. BJOG: An International Journal of Obstetrics & Gynaecology. 2012 Oct;119(11):1293–301.

14. Ranga R, Rai S, Kumari A, Mathur S, Kriplani A, Mahey R, et al. A Comparison of the Strength of Association of Reid Colposcopic Index and Swede Score With Cervical Histology. J Low Genit Tract Dis. 2017 Jan;21(1):55–8.

15. Karya U, Zehra A, Rani A. Evaluation of swede score and reid score to improve the predictive value of colposcopy and its correlation with histology. Int J Reprod Contracept Obstet Gynecol. 2020 Apr 28;9(5):2059.

16. Rahman Z, Yadav G, Tripathi U. The Diagnostic Efficacy of Swede Score for Prediction of Pre-invasive Cervical Lesions: A Prospective Hospital-Based Study. J Obstet Gynecol India. 2020 Dec;70(6):497–502.