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Original Research Article

Findings from colposcopy and colposcopy directed biopsy in cervical precancerous lesions

Sulekha Bhattacharjee[1]*, Khadiza Begum[1], Priyanka Waddader[1], Supran Biswas[2]

[1]Department of Obstetrics and Gynecology, [2]Department of ENT, Chattagram Medical College Hospital, Chattagram, Bangladesh

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***Correspondence:**
Dr. Sulekha Bhattacharjee,
E-mail: kariul@hotmail.com

ABSTRACT

Background: Pap smear test has been less successful in identifying those women with the highest risk for pre-malignant disease, so the patients with equivocal Pap smear would need further evaluation with colposcopy. Performing the colposcopy with more accuracy would result in better prognosis of pre-malignant lesions. However, performing a comparison with directed biopsy is required to obtain more definite results. The aim of this study was to determine colcoscopic findings in VIA positive cases.
Methods: This observational study was conducted at the Department of Gynaecology and Obstetrics in Chittagong Medical College Hospital, Chittagong from September 2014 to February 2015. A total 72 women of VIA positive cases attended at colposcopy clinic of CMCH were included in this study. These patients were selected nonrandomly according to inclusion criteria. All patients were sign a written informed consent before recruitment into the study. According to colposcopy diagnosis was done by Reid colposcopic index. All patients were undergone directed biopsy followed by histopathology. Data were collected under guidance and advice of the supervisor through a structured questionnaire.
Results: Almost two-thirds of the cases were 30-39 years age group. Among the 72 cases the presentations were mainly excessive vaginal discharge 61.1%, dyspareunia 16.7%, post-coital bleeding 9.7% and abnormal inter-menstrual bleeding 12.5%. Colposcopically 90.3% had CIN and invasive lesions, while 9.7% was normal. Colposcopically directed punch biopsy revealed in 84.7% cases positive lesions and 15.3% had not any CIN or invasive lesions.
Conclusions: This study demonstrated high accuracy. Sensitivity is lower in our studies, probably because biopsies were performed in all cases

Keywords: Colposcopy Findings, Histopathology, Biopsy, Cervical Pre-cancerous Lesions

INTRODUCTION

Cervical cancer is very frequent now a days, being the second commonest cancer at women worldwide. Premalignant lesions are characterized by abnormal cellular or epithelial architecture in the areas surrounding the junction between the squamous and columnar epithelium (transformation zone) of the uterine cervix and are microscopically characterized as a spectrum of events progressing from cellular atypia to various grades of dysplasia or cervical intraepithelial neoplasia (CIN), before progression to invasive carcinoma.[2] Dysplasia designates the cervical epithelial atypia that is intermediate between the normal epithelium and CIN.[3] Dysplasia was further categorized into three groups mild, moderate and severe – depending on the degree of involvement of the epithelial thickness by the atypical cells. The term CIN denotes the whole range of cellular

atypia confined to the epithelium. CIN was divided into grades I, II and III: CIN I corresponded to mild dysplasia, CIN II to moderate dysplasia, and CIN III corresponded to both severe dysplasia and CIS.[4] Thus, in 1990, a histopathological terminology based on two grades of disease was proposed: low-grade CIN comprising the abnormalities consistent with koilocytic atypia and CIN I lesion and high-grade CIN comprising CIN II and III. The high-grade lesions were considered true precursors of invasive cancer.[5] Recent studies clearly substantiate the view that cervical cancer develops from well-defined precursor lesions in a variable period of time and is preventable and curable if detected in early or pre-invasive stages. Symptoms begin when the precancerous lesions become true cancer and invade surrounding tissues.

The common symptoms include abnormal vaginal discharge which may be blood stained and foul smelling, post coital bleeding, postmenopausal bleeding, inter menstrual bleeding, excessive vaginal bleeding etc. Postcoital bleeding is regarded as a cardinal symptom of cervical cancer.[6] So, detection of these pre-cancerous lesions is of utmost importance. According to the World Health Organization (WHO), every year 50,0000 women worldwide get cervical cancer and 23,0000 of them die because of this disease. Standard rates of incidence for this disease are 10-20 in 10,00000 population.[7] Out of all cervical cancer cases seen in the world, 86% occur in the developing countries but only 14% are in the developed regions because of adaptations of different screening programs at national level.[7] In Bangladesh, cervical cancer is the most common reproductive cancer in women, and most women present when it is too late.[8] Cervical cancer is responsible for the highest rate of mortality among Bangladeshi women.[9] More than 80% of patients diagnosed with this eminently preventable cancer presents at clinically advanced and inoperable stages.[10] Pre-invasive changes of the uterine cervix usually appear 10-15 years before the invasive carcinoma. Pre-invasive changes are characterized by abnormal cellular or epithelial architecture in the areas surrounding the junction between the squamous and columner epithelium (transformation zone) of the uterine cervix and are microscopically characterized as a spectrum of events progressing from cellular atypia to various grades of dysplasia or cervical intra-epithelial neoplasia (CIN) before progression to invasive carcinoma. The aim of the study was to observe the correlation between the colposcopic impression and histopathological results from colposcopy directed biopsy. The objective of this observational study was to observe findings from colposcopy directed biopsy.

METHODS

This observational study was carried out at colposcopy clinic in the Department of Gynaecology and Obstetrics, of Chittagong Medical College Hospital, Chittagong from September 2014 to February 2015. During this study period all women of VIA positive cases were included who attended at colposcopy clinic of gynaecology and obstetrics department of Chittagong medical college hospital. Purposive sampling technique were taken to identify the study people. About a total 72 study patients were selected to the purpose of the study. The selected patients were VIA positive attended at colposcopy clinic. All patients signed a written informed consent before recruitment into the study. After maintaining proper asepsis colposcopy was done by expert colposcopist. Colposcopic result was enlisted in the data. Then colposcopy directed punch biopsy was taken and sent for histopathology. All participants were requested to come with histopathology reports and the results are also documented. Statistical analyses were carried out by using the Statistical Package for Social Sciences version 20.0 for Windows (SPSS Inc., Chicago, Illinois, USA).

Inclusion criteria

The patients with VIA positive cases were included in the current study.

Exclusion criteria

The patients with following characteristics will be excluded, patients of carcinoma cervix, patients with post coital bleeding, patients with unhealthy cervix, patients with excessive per vaginal discharge, patients with leukoplakia in cervix, vagina, vulva, patients with post-menopausal bleeding.

RESULTS

The present study was carried out to determine the role of VIA and colposcopy in the diagnosis of Cervical Intraepithelial Neoplasia among women 20-59 years ago with VIA positive cases attending the “colposcopy clinic” at CMCH during the 6th month period from September 2014 to February 2015. A total 72 study subjects were selected for this study. The age frequency of the study people is shown in (Figure 1). The age of the included patients was in between 20-59 years. The highest number was 31 (43.1%) in the age group of 30-39 years. Then 22 (30.6%) in 40-49 years, 11 (15.2%) was in 20-29 years and 8 (11.1%) was followed in the age group 50-59 years respectively. Excessive vaginal discharge was the main complaints in more than half 44 (61.1%) of the cases (Table 1). Dyspareunia was the second highest 12 (16.7%) complaint. Then abnormal inter-menstrual bleeding and post coital bleeding were 12.5% and 9.7% respectively. The VIA test was positive in all cases. But in colposcopic findings and high-power examination the findings were not positive in all cases. Apparently healthy cervix was in 7 cases (9.7%). CIN I, CIN II, CIN III and CIS noted in 54.2%, 29.2%, 5.5% and 1.4% cases respectively. In a word, colposcopically 90.3% study people had CIN and invasive lesion.

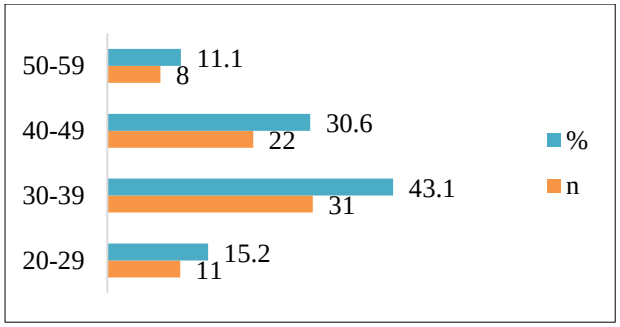

Figure 1: Age group of subjects (n=72).

Table 1: Distribution of sign symptoms (n=72).

Sign-symptoms	N	%
Abnormal inter-menstrual bleeding	9	12.5
Post-coital bleeding	7	9.7
Excessive vaginal discharge	44	61.1
Dyspareunia	12	16.7

Table 2: Colposcopic findings in percentage (n=72).

Clinical parameters		N	%
Colposcopic findings	Normal	7	9.7
	CIN I	39	54.2
	CIN II	21	29.2
	CIN III	4	5.5
	CIS	1	1.4
Total		72	100

Table 3: Distribution of colposcopically directed biopsy (n=72).

Colposcopically directed biopsy	N	%
Normal	4	5.6
Inflammation	7	7.7
CIN I	33	45.8
CIN II	22	30.6
CIN III	6	8.3
Total	72	100

Among total, 72 patients show histology results of colposcopy directed biopsy (Table 3). The correlation was 71.8% (28 out of 39) in the CIN I category, 76.2% (16 out of 21) in the CIN II category, 75% (3 out of 4) in the CIN III category.

DISCUSSION

The present study was carried out to determine the role of VIA and Colposcopy in the diagnosis of Cervical Intraepithelial Neoplasia among women 20-59 years ago with VIA positive cases attending the "colposcopy clinic" at CMCH. There included 72 study people to conduct this study. The age of the included patients was in between 20-59 years. The highest number was 31 (43.1%) in the age group of 30-39 years. Then 22 (30.6%) in 40-49 years, 11 (15.2%) was in 20-29 years and 8 (11.1%) was followed in the age group 50-59 years respectively. Almost two-thirds of the cases were 30-39 years age group. Similar observation followed in the study of Ancuţa Boicea, Dorji et al.[11,12] From the 72 cases, the presentation was mainly by excessive vaginal discharge post-coital bleeding and abnormal intermenstrual bleeding. Excessive vaginal discharge was the main complaints in more than half 44 (61.1%) of the cases. Dyspareunia was the second highest 12 (16.7%) complaint. Then abnormal inter-menstrual bleeding and post coital bleeding were 12.5% and 9.7% respectively. In a study conducted by Rosenthal et al 2001 in 314 women presenting with postcoital bleeding, 3% (n=9) had cervical cancer, 5% (n=17) had CIN I, 12% (n=37) had CIN II-III and rest of them having others disease.[6] In the same study, the authors reported cervical cancer in 0.6% of women with postcoital bleeding who had normal looking cervices and normal smear. All these were nonspecific, which remember the need of screening tests for CIN. All patients had VIA positive acetowhite punctuation. But colposcopically 90.3% had CIN and invasive lesions, while 9.7% was normal. Colposcopically directed punch biopsy revealed 84.7% cases showed positive lesions and 15.3% had not any CIN or invasive lesion.

Ancuta Boicea, in 2012 examined 245 patients who present malignant findings at colposcopy and biopsy.[11] In colposcopy 28 (11.4%) cases were CIN I, 50 (20.4%) cases were CIN II, 150 (61.2%) cases were CIN III, 13 (5.3%) cases were micro-invasive carcinoma and 4 (1.6%) cases were CIS. Histologically, 4 (1.6%) cases were normal, 26 (10.6%) cases CIN I, 55 (22.4%) cases CIN II, 138 (56.3%) cases CIN III, 15 (6.1%) cases microinvasive carcinoma and 7 (2.8%) cases of CIS. So, the correlation was 78.5% in the CIN I category, 84% in the CIN II category, 88.6% in the CIN III category, 46.1% for micro-invasive carcinoma and 50% for CIS. The colposcopy method incurred fewer false negatives, giving a general accuracy rate of 98.3%. Sensitivity of colposcopic examination was 83.6%.

Boonlikit, in 2011, in a 100 patients study correlation between Reid`s colposcopic index and histologic results from biopsy.[13] Overall, predictive accuracy was 89% and had good correlation with histology. Maziah et al in a comparative study of cytologic and colposcopic findings in preclinical cervical cancer, obtained an accuracy rate of 94% for colposcopy.[14] The colposcopic findings rates were: 10% for CIN I, 34% for CIN II, 34% for CIN III and 12% for invasive carcinoma. Histology findings were: 10% were CIN I, 20% were CIN II, 60% were CIN III and 10% were micro-invasive carcinoma.

Pimpla et al in 2010, made an evaluation of colposcopy vs. cytology as secondary test to triage women found positive on visual inspection test.[15] The colposcopic impression was CIN I change in 33.8% of cases, CIN II-III in 8.6% of cases, and invasive carcinoma in 2.7% of cases. Histopathology findings were reported as benign in 81.6%, CIN I in 5.8% of cases, CIN II in 2.9% of cases, CIN III in 2.6% of cases, and invasive carcinoma in 2.9% of cases. Eight longitudinal studies were selected, which compared correlation of colposcopic impression with colposcopically directed biopsy results. The prevalence of cervical disease in these studies ranged from 40% to 89%. Colposcopic accuracy was 89%, which agreed exactly histology in 61% cases. Stafl et al prospectively evaluated the colposcopic impression in 282 patients and compared them to the histology.[16] They subsequently recommended a minimal proficiency level of 80% for colposcopic accuracy to show proof of colposcopic competency.

Limitations

The study population was selected from one selected hospital in Chittagong, so that the results of the study may not reflect the exact picture of the country. The present study was conducted in a very short period of time. Small sample size was also a limitation of the study. As colposcopy requires skilled colposcopist, inter-observer variation is obvious which may have impact on findings.

CONCLUSION

This study demonstrated high accuracy. Sensitivity is lower in our study probably because biopsies were performed in all cases during diagnostic work-up. We also demonstrated the usefulness of these two diagnostic procedures as screening as screening tests in preclinical cervical cancer. The main goal of cervical cancer screening is to identify women with high grade intra-epithelial lesion, which were considered to be the true precursors of invasive cancer and require treatment. In

our study there were cases of under or over diagnosed, the benefit of colposcopy and directed biopsy is to avoid over treatment of low-grade lesion and under treatment of high of high-grade lesion.

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