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Analysis Of Visual Inspection By Acetic Acid And Lugols Iodine Positive Cervical Biopsies In A Tertiary Care Centre In South India.

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Abstract: *Background: Cervical cancer is the commonest cancer among the females of developing countries. Before evolving into cancer, the cervical epithelium undergoes a series of dysplastic changes. Simple screening techniques done even in low resource setting will detect the lesion thereby facilitating early management. Nevertheless, these screening techniques not only detect the premalignant and malignant lesions but also the non-neoplastic lesions*

Aims and objectives*:To categorize the VIA/VILI (Visual Inspection with Acetic acid / Visual Inspection with Lugols Iodine) positive cervical lesions*

Settings and design:*The cervical biopsies of VIA/VILI positive cases were analyzed in the Department of Pathology in Kanyakumari Government Medical College for a period of one year.*

Materials and methods: *It is a descriptive study*

Results: *The results were tabulated using percentage. The most common histopathological pattern observed was chronic cervicitis followed by Low grade Squamous Intra Epithelial lesion.*

Conclusion:*Screening tests coupled with cervical biopsy remains the gold standard method for detecting the premalignant, malignant and non-neoplastic lesions.*

Key words*: VIA/VILI, CERVICAL BIOPSIES, CHRONIC CERVICITIS, PREMALIGNANT LESION, MALIGNANT LESION*

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I. Introduction

Cervical cancer is the most common cancer among the females of developing countries like India. There were an estimated 266,000 deaths from cervical cancer worldwide in 2012, accounting for 7.5% of all female cancer deaths. Almost nine out of ten (87%) cervical cancer deaths occur in the less developed regions[1]. The morbid cervix before evolving into carcinoma undergoes a series of changes at the cellular level. This is known as dysplasia (Intraepithelial lesions). These lesions if not treated in time may turn into malignancy. Premalignant lesions of cervix take about 5-15 years to progress to invasive cancer[2]. Regular screening using Visual Inspection with Acetic acid (VIA)/ Visual Inspection with Lugols Iodine (VILI) of the cervix and colposcopy directed cervical biopsies helps us to detect the premalignant lesions before getting manifested into carcinoma. The Alliance for Cervical Cancer Prevention (ACCP) has proved that VIA and VILI are as effective as or even more effective than the Pap test in identifying precancerous lesions. These techniques when combined and correlated with colposcopy, their efficacy doubles for screening purposes [3]. VIA/VILI can be done even in the low resource settings. VIA/VILI shows acetowhite and brown discolouration respectively, not only in the premalignant and malignant lesions but also in certain non-neoplastic lesions. Since these premalignant lesions are preventable and curable, Tamilnadu Health Systems Project has included the screening and treatment of cervical cancer under the NCD (Non Communicable Disease) program[4]. As it is stated, cervical cancer is the only cancer that can be detected by proper screening techniques, this study is aimed at analyzing the cervical biopsies and categorizing the various histopathological patterns of these VIA/VILI positive cases.

II. Material And Methods

This is a retrospective descriptive study conducted in the department of Pathology, Kanyakumari Government Medical College (KGMC) over a period of twelve months. The samples were received from the primary, secondary and the tertiary Government hospitals of Kanyakumari district. The samples were received in 10% formalin. After examining the gross specimens, the tissues were submitted for routine tissue processing and embedded in paraffin wax. Thin sections of 5µ were cut using a rotary microtome, the tissue sections were stained with Harris alum haematoxylin, and Eosin stains. The Pathologist reported these slides. These already reported slides were reviewed and categorized based on WHO classification of cervical tumors. All cervical biopsies taken from the VIA/VILI positive areas in the cervix were included in the study. Those slides without ectocervical lining, subepithelial tissue and endocervical glands were considered as inadequate sample and are excluded from the study. Ethical committee clearance was obtained from the institutional committee.

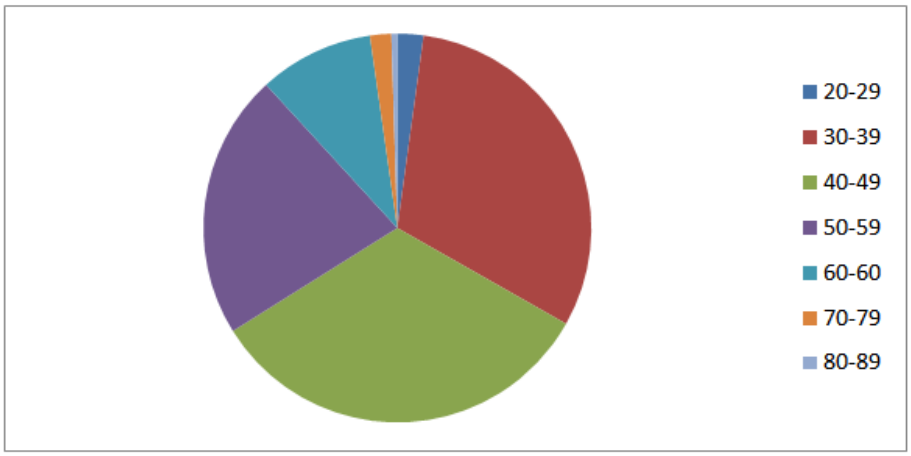
III. Result

We received 1015 VIA/VILI positive biopsies over a period of one year in KGMC. Average age of women with VIA/VILI positivity was 45.52±10.5 years. The maximum VIA/VILI positivite cases were between the age group 40-49 years followed by 30- 39 years.

Table no 1: VIA/VILI positivity percentage in each age group

Age	Number	Percentage
20-29	22	2.2%
30-39	315	31%
40-49	334	33%
50-59	224	22%
60-69	97	9.6%
70-79	18	1.8%
80-89	5	0.5%

Figure no 1: Distribution of VIA/VILI positivity in each age group



Among these, 91 specimens were inadequate and excluded from the study. Most of the non-neoplastic lesions occurred below 50 yrs. Among the various histological patterns observed, chronic cervicitis carries the highest score followed by the Squamous Intraepithelial Lesions. Squamous cell carcinoma was only 3.4%.

Table no 2: Histological patterns of cervical biopsy in VIA/VILI positive cases

Squamous intraepithelial lesions	
LSIL	12.3%
HSIL	0.3%
Squamous cell carcinoma	
Non keratinizing	3.4%
Benign squamous cell lesions	
Squamous metaplasia	1.1%
Benign glandular tumours and tumour like lesions	
Endocervical polyp	6%

Endometriosis	0.1%
Mesenchymal tumours and tumour like lesions	
Leiomyomatous polyp	0.8%
INFLAMMATION:	
CHRONIC NON SPECIFIC CERVICITIS-	75.9%
ACUTE CERVICITIS	0.2%

Most premalignant lesions occurred between the age group of 30-50 yrs.Squamous cell carcinoma is higher in the age group of 60-69 yrs followed by 50-59 yrs and 70-79 yrs respectively. The mean age for the prevalence of squamous cell carcinoma was 62.3 ± 12. Prevalence of SCC is highest among the age group 60-69 years and lowest among the age group 40-49 years.

Table no 3: Distribution of SCC in each age group

Age Group	SCC- PERCENTAGE
20-29	0
30-39	6.6%
40-49	3.2%
50-59	26%
60-69	29%
70-79	23%
80-89	13%

LSIL was more common among the age group 30-39 years closely followed by 40-49 years

Table no 4: Distribution of LSIL in each age group

Age Group	LSIL- PERCENTAGE
20-29	0.9%
30-39	35%
40-49	32%
50-59	24%
60-69	7.9%
70-79	0
80-89	0

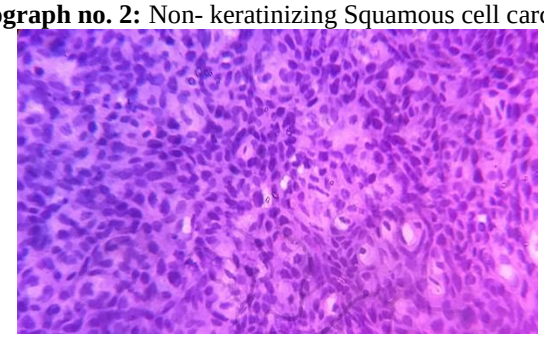
Chronic cervicitis was more prevalent among the age group 30-50 yrs.

Table no 5: Distribution of chronic cervicitis in each age group

Age Group	CHRONIC CERVICITIS- Percentage
20-29	2.6%
30-39	35%
40-49	34.8%
50-59	18.4%
60-69	8%
70-79	1%
80-89	0.1%

Photomicrograph no. 1: Cervical Intraepithelial Neoplasia - 1 (10X)

Photomicrograph no. 2: Non- keratinizing Squamous cell carcionma(10X)



Photomicrograph no. 3: Chronic Cervicitis(10X)

Photomicrograph no. 4: Endocervical polyp(10X)

IV. Discussion

Mean age ± SD of women with VIA/VILI positivity is 45.52±10.5 years which is quiet high when compared to other studies conducted by P. Ghosh et al and Margot Knuckler et al[5,6]. Maximum number of patients were between the age group 30-49 years as compared to that of Dharaiya and Maitra[7] comprising 72% of the study population. A study by Dhakal R et al also shows maximum number of patients between the age group 31 to 40 years[8].

Out of the 924 biopsies, LSIL and HSIL were 12.3% and 0.3% respectively and majority are seen between 30-40 yrs. Similarly, the inflammatory and preneoplastic conditions were more as observed by Dharaiya and Maitra[7]. This shows regular screening of females in these age group helps in early detection and eradication of premalignant lesions thereby decreasing the incidence of malignant lesions. The percentage of premalignant and malignant lesions were less in our study when compared to the conducted at Salem district of Tamilnadu by Sujatha et al[9] but the prevalence of chronic nonspecific cervicitis was high compared to Sujatha et al[9] . This could be due to the high level of awareness among our study population as majority of them seek medical attention at the earliest. A study conducted by Dhakal R, Makaju R et al shows 78.7% of chronic cervicitis which was in coherence with our findings . In the same study SCC was 4 %which is also in concordance with our study. HSIL was 8% but we had only 0.3% of HSIL in our study. In a study by Gosh et al. on cervical biopsies showed normal findings in 8% of specimens, 1.3% of lowgrade intraepithelial lesions and 6.7% high-grade squamous intraepithelial lesions. Malignancy was 5.3%, whereas we observed 12.5% of LSIL, 0.3% HSIL and 3.4% frank malignancy. The mean age of patients with cancer was 52.75 years in our study population, which is similar to the study of Bodal et al. (51.94 years) in Indian population. We observed higher incidence of intraepithelial lesions in the age group 30-39 years and increased incidence of non-keratinizing squamous cell carcinoma in the age group 50-69 year. This observation proves the statement mentioned in an

article by Dr.Kaarthigeyan from Coimbatore. According to him, the incidence of SCC rises in 30–34 years of age and peaks at 55–65 years[10]. A study conducted in Malaysia by Al-Jashamy Karim et al shows HSIL 37% (CIN III with 27% , CIN II and CIN II-III with four cases 5%each), Non-keratinizing squamous cell carcinoma 16%[11]. In the current research, the authors found that LSIL is 12.3%, HSIL is 0.3%, and non-keratinizing SCC is 3.4%. This is because of the early detection of premalignant lesions by the effective screening techniques. While going through these literatures striking point noticed is that all the study population showed VIA/VILI positivity but the prevalence of malignancy and premalignant lesions were less compared to the inflammatory conditions. The false positive findings may be due to immature squamous metaplasia and other chronic inflammatory lesions.

V. Conclusion

The results have implications for efficient service using VIA/VILI screening methods in primary care centres like PHCs, secondary care centres like Government Hospitals and tertiary care centres. These type of screening programs will be beneficial for those women of low socio-economic status, since they were at increased risk of HPV infection particularly by high-risk virulent types resulting in carcinoma cervix. From our study, we concluded that this screening program coupled with biopsy has helped in detecting the low-grade lesions thence reducing the morbidity and mortality caused by carcinoma cervix. This NCD program has not only helped in identifying the premalignant and the malignant lesions but also the non- neoplastic lesions, which were, treated effectively reducing the morbidity.

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