Introduction and Aim:
Cervical cancer is the leading gynaecological cancer and continues to be a major public health menace in India. The best screening modality to cater our general population is still under debate, due to various reasons like lack of infrastructure, lack of awareness and poor compliance. Currently, early diagnosis of cancer cervix or CIN is achieved by evaluation of symptomatic women or screening on request or camps.

The tests available for cervical cancer screening are, PAP smear, Visual inspection techniques and HPV DNA testing. Variable sensitivities and specificities for these tests have been reported in the population based scenario.

This study aims to compare the efficacy of PAP smear versus Visual inspection techniques in Symptomatic women, in a hospital setting.

Materials and Methods:
This study was a prospective study conducted at the Institute of Obstetrics and Gynaecology, Tamilnadu, in November 2010 to January 2011. Inclusion criteria were sexually active women with symptoms of leucorrhoea or menstrual disorders or abnormal looking cervix. Patients with obvious growth on the cervix, acute cervicitis and those who already had an abnormal PAP smear report were excluded.

After thorough history and clinical examination, all women underwent a conventional PAP smear with a Ayre's spatula and endocervical brush. They had a concurrent VIA, VILI and Colposcopy done. The bright LED light of the colposcope was used as light source for VIA. VIA was done with freshly prepared 3% acetic acid and VILI with lugol's iodine. Moderate and dense acetowhitenning was taken as VIA positive while faint acetowhitenning was taken as VIA negative. Clearcut iodine negativity was taken as VILI positive whereas geographic iodine negativity was taken as
VILI negative. A colposcopy was done for all the patients and directed biopsy taken from all abnormal areas. Colposcopy and biopsy was taken as the reference standard. Detection of CIN and Cancer cervix were analysed and compared between PAP smear and visual inspection techniques.

Results:
120 women met the inclusion criteria and were evaluated with PAP smear, Visual inspection techniques and Colposcopy. Biopsy was necessary in 81 women.
The most common age group in this study group was 30 to 40 years accounting for 39% of cases. 75.8% of the women were premenopausal and 95.8% were multiparous. The most common presenting complaint was white discharge per vaginum (56.6%). 27.5% presented with abdominal pain, 25.8% with menstrual complaints. 20% had more than one presenting symptom.

Colposcopic data:
Colposcopy was unsatisfactory for evaluation in 11/120, it was normal in 31, presence of polyps in 3 women, 49 had colposcopically low grade lesions, 12 had colposcopic evidence of high grade lesions. There were 4 cases of CIN I, 3 cases of CIN II and 7 cases of invasive cancer by biopsy.

PAP SMEAR:
13 out of 120 smears were unsatisfactory for evaluation. Out of the remaining 107 smears, 12 were reported as positive of which 5 were true positives. PAP smear was negative in 94/107 cases, however on comparison with biopsy, there were 9 false negatives. Hence, the sensitivity of PAP smear in the present study was 35.7% only, but the specificity was 92.39%.
On excluding CIN I and analyzing only CIN II, III and Invasive cancer, it was found that PAP had a sensitivity of 50% and specificity of 91.56% [Table I].

VIA:
All acetowhitenings persistant for more than 60 seconds were taken as positive. 46 out of 120 patients were VIA positive. VIA identified 12 out of 14 cases of CIN and cancer, but was false positive in 34 patients giving it an overall sensitivity of 85.7% and specificity of 67.9%.
On analyzing the high grade lesions only VIA had a sensitivity of 90% and specificity of 68.86%.[Table II]

VILI:
In 5 postmenopausal women, there was no iodine uptake at all. Out of the remaining 115, 29 had clearcut iodine negative areas. 9/29 VILI positive patients had CIN or Cancer. Of the 14 cases of CIN or CA, VILI picked up 9, but missed 5 cases, giving it a sensitivity of 64.28% and specificity of 80.19%.
On analyzing the high grade lesions only, VILI had a sensitivity of 70% and specificity of 80.19% [Table III]

Endocervical lesions:
There were 2 cases of endocervical cancer, both were missed by VILI, one missed by VIA. However they were both reported as ASCUS by PAP smear.

Discussion:
Cervical Cancer continues to be a major public health problem in India. Difficulty in implementing a nationalized screening programme, contributes to the high incidence rates.
Women from low socio economic status have lower literacy rates and are reluctant to screen themselves when they are asymptomatic. The only logical way to minimize the burden of cancer in this group is by early detection, when they present to the hospital with any symptom and opportunistic screening. Thus, the question of the ideal
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diagnostic tool with highest specificity in symptomatic women arises. This prompted us to do a comparative study between PAP smear, VIA and VILI among these symptomatic women. HPV DNA testing was not done due to lack of availability.

The sensitivity of VIA in the IARC multicenteric study by Sankaranarayanan et al in India and Africa in 2004 ranged from 56.10% to 93.90% and the specificity ranged between 74.20% and 93.80% and that of VILI ranged from 76.00% to 97.00% and the specificity between 73.00% and 91.30%. [1]

In a metaanalysis by Nanda et al. in 2000, the sensitivity of cytology to the detection of CIN 2 or worse lesions ranged from 18% to 98% and the specificity ranged from 17% to 99%[2]

In the present study, the sensitivity of PAP smear for high grade lesions was 50% and specificity 91.56%. The sensitivity and specificity of VIA and VILI were 90% & 68.86% and 70% & 80.16% respectively. The present study had comparable results to the previous studies.

In the present study, visual inspection techniques were found to be good first line techniques, since they tend to miss less. However PAP smear scores over them in endocervical lesions. Thus, a combination of PAP smear and Visual inspection techniques would be ideal, since they compliment each other. Panten et al. 1995[ 3] Denny et al. 2000 [4] and Shankaranarayan et al. 2003 [5] also showed higher efficacy on using a combination of the tests.

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<tr>
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<th>Overall CIN or CA positive</th>
<th>Overall CIN or CA negative</th>
<th>High grade lesion positive</th>
<th>High grade lesion negative</th>
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<tbody>
<tr>
<td>PAP positive</td>
<td>5</td>
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<tr>
<td>PAP negative</td>
<td>9</td>
<td>85</td>
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<td>14</td>
<td>92</td>
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<tbody>
<tr>
<td>VIA positive</td>
<td>12</td>
<td>34</td>
<td>9</td>
<td>33</td>
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<td>VIA negative</td>
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<tr>
<td>VILI positive</td>
<td>9</td>
<td>20</td>
<td>8</td>
<td>54</td>
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<tr>
<td>VILI negative</td>
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<td>81</td>
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Conclusion:
PAP smear and Visual inspection techniques have their specific advantages and disadvantages. The present study highlights the fact that a symptomatic woman would benefit most by a combination of these tests, since they compliment each other.

Reference:


