The reliability of this method in the evaluation of malignancy has been greatest interest as it has the potential for developing neoplasia of columnar epithelium. This site for obtaining the cervical smear is of zone of physiologic metaplastic epithelium that has replaced the higher in number in malignant cells. Recent studies show that AgNOR are significantly higher in number in malignant cells.

The normal transformation zone present on the cervix represent the zone of of physiologic metaplastic epithelium that has replaced the columnar epithelium. This site for obtaining the cervical smear is of greatest interest as it has the potential for developing neoplasia of cervix. CIN lesions with low AgNOR counts are more likely to regress in comparison to CIN lesions with high AgNOR counts.

The reliability of this method in the evaluation of malignancy has been frequently demonstrated even by a simple visual assessment. AgNOR count is a reproducible simple efficient and inexpensive method, which can be used as an adjunct to routine cytology and histopathology for diagnosis of cervical intraepithelial neoplasia.

INTRODUCTION

In India Cervical cancer is the second most common cancer among women between 15-44 years of age and is considered to arise from cervical intraepithelial neoplasia (CIN). In India, over the past 5 decades, there has been a definitive shift in the trend of the cancer development amongst females, thus making cervical carcinoma slip down to the second position, being due to lack of basic understanding or awareness of the importance of the routine screening of cervix has been a major contributor to the higher incidence of cancer of the cervix amongst the women in the developing countries second only to breast cancer.

Screening using cervical smears has long been established as a mainstay for detecting early cytological abnormalities and has contributed to a significant fall in death rate from cervical carcinoma in many countries.

In contrast to developed countries, cervical cancer is a public health problem in developing countries like India, so much so that India alone accounting for one-quarter of the world wide.

It is one of the leading cause of cancer mortality, accounting for 17% of all cancer deaths among women aged between 30-69 years. It is estimated that cervical cancer will occur in approximately 1 in 53 Indian women during their life time compared with 1 in 100 women in more developed regions of world. In India Cervical cancer contributes to approximately 6-29% of cancer in women.

Cervical Intraepithelial Neoplasia or cervical dysplasia is the stage that can precedes to carcinoma cervix in near future and this stage can be considered as a vital stage for the diagnosis because early diagnosis at this stage may have better prognosis.

‘AgNOR’ represents Nucleolar Organiser Regions (NORs) stained with colloidal silver. In rapidly dividing cells like neoplastic cells, nucleolar dysaggregation occurs and resulting in dispersion of individual AgNOR. Recent studies show that AgNOR are significantly higher in number in malignant cells.

The normal transformation zone present on the cervix represent the zone of of physiologic metaplastic epithelium that has replaced the columnar epithelium. This site for obtaining the cervical smear is of greatest interest as it has the potential for developing neoplasia of cervix. CIN lesions with low AgNOR counts are more likely to regress in comparison to CIN lesions with high AgNOR counts.

The reliability of this method in the evaluation of malignancy has been

NUMBER OF CASES:

Out of 100 cases studied 31% women had a complaint of bleeding p/v, 32% women had white discharge and rest of the 37% women had no complaints.

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post coital bleeding and 6% women had e/c post menopausal bleeding.

**CYTOPATHOLOGICAL FINDINGS & NUMBER OF CASES:**
Out of 100 cases cytopathologically studied 56% were Negative for Intra Epithelial Malignancy(NILM),33% of Chronic cervicitis(CC), 8% of High grade Squamous Intraepithelial lesion(HSIL) and 3% of Low grade Squamous Intraepithelial lesion (LSIL) was found.

There was no correlation found between parity and number of AgNOR dots. (P-value>.05)

**AGNOR SCORE AND MULTIPLE SEXUAL PARTNERS:**
In this study women having history of multiple sex partners had higher AgNOR score than the women having single sex partner. AgNOR score and history of multiple sex partners was significantly correlated (P value=.003).

**PRESENTING COMPLAINTS AND AGNOR DOTS WISE DISTRIBUTION (TABLE 1):**
The women were having complaints of white discharge and bleeding p/v had high AgNOR count, the correlation between these two complaints and number of AgNOR count was highly significant . (p value .0001)

**PER SPECULUM FINDINGS AND NUMBER OF AGNOR DOTS WISE DISTRIBUTION (TABLE 2):**
Out of 100 case, 48 cases were positive,48 positive cases, 39 cases were positive for cervical erosion and 9 cases were positive for cervical hypertrophy. The women who had cervical erosions on per speculum examination ,AgNOR count was higher as compared to normal cervix and the correlation was statistically significant.

**CYTOPATHOLOGICAL FINDINGS AND AGNOR SCORE (TABLE 3):**
The mean AgNOR score for NILM was 1.62, for Chronic cervicitis 2.11,for LSIL 2.75 and for HSIL 4.06.

The various cytopathological findings exhibited statistically significant difference in AgNOR values.(p value <.0001)

Negative for Intra Epithelial Lesion(NILM) and Chronic cervicitis had low score and other cases LSIL and HSIL had higher AgNOR score.

**DISCUSSION:**
Cervical cancer is the most common cause of death among women in India next to breast cancer. The cervix is easily accessible site to obtain Pap smear ,so it is easy to detect squamous cell abnormality in cervix at very early stage which may further progress to Squamous Cell Carcinoma.

Many times Pap smear has certain limitations because of subjective error, the pathologist may have different views for the same lesion, so to avoid the conflicts smear can also stain with AgNOR stain.

On the basis of number of intranuclear dots we can correlate our findings and strengthen our diagnosis, So by counting number of AgNOR dots can be extremely helpful for pathologist in diagnosis as well as in prognosis of cancer and also Can play important role in differentiating between different spectrum of cervical lesions.

In our study there was a statistically significant correlation(P value <.0001) found between nucleolar organizer regions(NORs) and various cervical lesion .Highest number of dots was reported in High Grade Squamous Intra Epithelial Lesion(4.06)and lowest score in normal cervical smear(mean score (1.62).The significant difference in score was also observed between HSIL ,LSIL and Chronic cervicitis.

Similar study done by Basanta A et al ,2016 they find out of 60 cases, 25% were benign. 26.6% were CIN and 48.4 % were diagnosed as carcinoma cervix. AgNOR count for benign lesion was 1.5, for CIN 3.7 and for malignancy was 5.6. and AgNOR score was significantly higher in malignant lesion as compared to benign lesion.

Another study conducted by KC Shiv Raj et al, they selected 53 cases of cervical lesion and subjected to cytology and biopsy with AgNOR stain.The mean AgNOR score of LSIL in cervical smear was 2.9 and 1.9 in cervical biopsy and in HSIL 3.45 in cervical smear , 3.00 in cervical biopsy respectively. Similar to our study this study also concluded that as severity of cervical neopithelial neoplasia increases mean AgNOR count also increases significantly.

**CONCLUSION:**
Finding of our study shows, AgNOR dots present within the nucleus of squamous cells have a definitive proliferative activity with severity of cervical pathology.

The AgNOR dots or granules tend to increase as the as severity of lesion of cervix increases progressively.

Furthermore the studies also reported that dysplasia with low AgNOR counts are more likely to regress as compared to those with high AgNOR counts .Which on other hand are likely to progress to invasive carcinoma showing prognostic significance. Although more studies are necessary , our preliminary study indicates AgNOR counts in cervical dysplasia has potential diagnostic as well as prognostic importance.

**REFERENCES:**
8. Sonowal B and Handique A  study on value of agnor, in malignant lesions of cervix .JIHRMLP,JULY, 2016 Vol: 02 No: 02

**Table 1 : Presenting complaints and AGNOR dots wise distr ibution**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Presenting complaints</th>
<th>Cases</th>
<th>Mean±SD</th>
<th>F- test</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>AgNOR dots</td>
<td>BPV</td>
<td>31</td>
<td>2.43±0.91</td>
<td>8.280</td>
<td>0.0001</td>
</tr>
<tr>
<td></td>
<td>NC</td>
<td>37</td>
<td>1.77±0.42</td>
<td>Significant</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WD</td>
<td>32</td>
<td>1.94±0.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>100</td>
<td>2.03±0.72</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 2: Per speculum findings and number of AgNOR dots wise distribution**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Per speculum findings</th>
<th>No.of cases</th>
<th>Mean±SD</th>
<th>F-test</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGNOR dots</td>
<td>CE</td>
<td>39</td>
<td>2.46±0.89</td>
<td>15.895</td>
<td>0.0001 (highly significant)</td>
</tr>
<tr>
<td></td>
<td>CH</td>
<td>9</td>
<td>2.04±0.47</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GN</td>
<td>52</td>
<td>1.70±0.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>100</td>
<td>2.02±0.72</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table-3: Cytopathological findings and AgNOR score**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cytopathological findings</th>
<th>Cases</th>
<th>Mean±SD</th>
<th>F-tests</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGNOR dots</td>
<td>NILM</td>
<td>56</td>
<td>1.62±0.32</td>
<td>167.31</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td></td>
<td>CC</td>
<td>33</td>
<td>2.11±0.29</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LSIL</td>
<td>3</td>
<td>2.73±0.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HSIL</td>
<td>8</td>
<td>4.06±0.12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**REFERENCES:**