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Severe Inflammation Indicates High Risk of HSIL: From a Cross-Sectional Study

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ABSTRACT

Background: Inflammation has been reported as a facilitator in cervical oncogenesis, but the correlation between inflammation and cytology abnormality including cervical intraepithelial neoplasia (CIN) remains uncertain. The aim of this study was to investigate the correlation between them with ThinPrep cytological test (TCT) as a screening tool for cervical cancer and CIN, which can identify abnormal morphology of cervical mucosa epithelium and inflammation degrees in TCT reports. However, doctors often focus on the cytology abnormality in TCT reports while ignore the inflammation degree functions.

Methods: In this study, we collected clinical data from 48101 women undergoing TCT in the affiliated hospitals of Sun Yat-Sen University

(1). We suggested that TCT was an effective screening tool of CIN, and HISL has a close relationship with CIN3

(2). We pointed out the high risk of HISL by inflammation degrees

(3). We examined the inflammation degrees in the cytological abnormality slides and revealed the positive correlation between inflammation and different stages of cytological abnormality

(4). In addition, we investigated the risk prediction value of inflammation degrees for HISL by logistic analysis.

Results: A retrospective analysis of clinical data from 48101 women undergoing TCT in the affiliated hospitals of Sun Yat-Sen University (SYSU) revealed that among the 8.87% (4102 cases) total positive rate of atypical squamous cells (ASC), low-grade squamous intraepithelial lesions (LSIL) and high-grade squamous intraepithelial lesions (HSIL), 67.7% (2777/4102) of TCT positive samples had inflammatory infection. The rate of severe inflammation was significantly higher in cytological abnormality group than the control group (15.1% vs. 2%, P=0.000). Our results showed that severe inflammation significantly increased incidence of cytological abnormality by 12.59 times and elevated the risk of HSIL by 756.47 times.

Conclusions: In conclusion, these results highlighted the relationship between cytological abnormality and CIN, helping doctors find out high risk patients of CIN3 by TCT with HSIL and severe inflammation. Severe inflammation increased the risk of HISL by 756 times, much higher than that in control group. Therefore, severe inflammation can be viewed as a high risk factor for HSIL, even CIN3. So evaluation of the inflammation degree in TCT reports is necessary. It is possible that severe inflammation may serve as a new marker for early detection of CIN3 by TCT. According to our study, doctors can capture more information and clues from a TCT report, if it shows both cytological information and inflammatory information in the report.

Keywords: TCT; cytological abnormality; cervical intraepithelial neoplasia; inflammation; progression

BIOGRAPHY

Tengfei Long is currently working in the department of obstetrics and gynecology in Sun Yat-Sen Memorial Hospital, Sun Yat-Sen University, China. His research interests includes the area of cancer screening, diagnosis and treatment.

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