

Clinical Value of TCT Used in Gynaecological Diseases to Make a General Survey of Cervical Precancerous Lesions

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Abstract

Objective It analyzes and discusses about the clinical value of Thinprep cytology test (TCT) used in gynaecological diseases to make a general survey of cervical precancerous lesions, which offers scientific basis to the formulation of intervention measures. **Method** It carries out retrospective analysis on the 5,207 cases of the gynaecological diseases under the general survey from January 1, 2011 to December 31, 2013 in our hospital. Among them, there are 1,602 cases from profession teachers, 3,308 cases from staffs of common public institutions, and 297 cases from people with other occupations. **Result** Upon the physical examination, it is found that the morbidity in myoma of uterus and cyclomastopathy among professional teachers is higher than that among the common women in public institutions obviously ($\chi^2=12.77$, $p=0.014$). **Conclusion** There is a relatively long stage of precancerous lesions in the generation of cervical cancer, so cervix uteri cytology test is an effective way for screening precancerous cell lesions. TCT can increase diagnosis accuracy, discover early lesions of cervix uteri in time, and reduce the incidence rate of cervical cancer.

Keywords

TCT; cervical precancerous lesions; clinical value

1. Introduction

The cervical precancerous lesion among women is also called as intraepithelial neoplasia, which belongs to the stage of precancerous lesion. The precancerous lesion develops very slowly and can't show obvious symptoms, so it will be very easy to be neglected by patients and make the best period for treatment delayed. The cytologic examination by cervical smear is

widely used in hospital, but the false positive rate and false negative rate in examination results are both very high. Thinprep cytology test (TCT) is used in the examination of cervical precancerous lesions upon general survey of gynaecological diseases, and is welcomed by patients and doctors in recent years because of its high accuracy in results. Moreover, it has the advantage of reducing the harm to cervix uteri of women and better keeping the reproductive health of women. This paper selects Thinprep cytology test (TCT) to examine the cervical precancerous lesions of women step by step and carry out the comparative analysis on the positive rate of cervical precancerous lesions among women with different professions, which offers the scientific basis to the formulation of intervention measures [1].

2. Methods

2.1 Design and Sample

There are 5,207 cases under the general survey of gynaecological diseases from January 1, 2011 to December 31, 2013 in our hospital, and all cases are from units such as administrative enterprises and institutions, schools, factories and mines in our city.

2.2 Glass slide making with the specimen in Thinprep cytology

Use the broom-shaped sampling apparatus to stretch into the cervix uteri, making the sampling apparatus connected with cervix uteri surface. Rotate for 5 circles towards the same direction. Take out the sampling apparatus and brush it in the sample conservation solution for 10 times or so. Then rotate and vibrate it, and try the best to make the cells in the sampling apparatus rinsed into the sample conservation solution. Upon the Thinprep 2000 procedure treatment, make the grume, hemocyte and inflammatory cell in the sample separated, and sift out epithelial cell of cervix uteri. Then the sample conservation solution passes the vacuum device of membrane filter, making the epithelial cell absorbed to the membrane, and transferred to the glass slide upon electrostatic treatment to make the glass slide carrying the epithelial cell. Fix it by 95% ethyl alcohol, and finally observe the glass slide to check whether there is any cancerization in the cell by Papanicolaou staining for 15-20min.

2.3 Diagnostic standard in cytology

TBS (The Bethesda system) standard of classification was recommended to use by Association for International Cancer in 2001 as the general international standard of classification. In this standard, cytopathy is defined as the several kinds as below: I. Within Normal Limits (WNL); II. Atypical Squamous Cells of Unknown Significance and Gland Cell (ASCUS); III. Squamous Intraepithelial Lesion (SIL); IV. Low-grade Squamous Intraepithelial Lesion (LSIL), i.e. Cervical Intraepithelial Neoplasia (CIN); V. High-grade Squamous Intraepithelial Lesion (HSIL) or Carcinoma In Situ (A IS); VI. Squamous Carcinoma (SCC); and VII. Adenocarcinoma (AC) [2].

2.4 Ethical consideration

Ethical approval for the study was obtained from the Committee on Human Research, Publication and Ethics of our hospital, as well as ethical review board of the our Hospital. Informed consent was obtained from all participants and participation was strictly voluntary.

2.5 Data analysis

The comparison regarding the the morbidity in myoma of uterus and hyperplasia of mammary glands were done using chi-square (χ^2) tests or Fisher exact tests where appropriate. P-value less than 0.05 was considered statistically significant for all analysis.

3. Results

Among the 5,207 cases under the general survey of gynaecological diseases from January 1, 2011 to December 31, 2013 in our hospital, there are 1,602 cases from profession teachers, 3,308 cases from staffs of common public institutions, and 297 cases from people with other occupations, with the age between 20 and 60 and average age of 32.4 ± 2.1 . All cases use TCT to carry out the cervical precancerous lesions screening. The examination results in TCT indicate that, there are 163 cases of precancerous lesions in cervix uteri among professional teachers, accounting for 10.1%; while 189 cases of precancerous lesions in cervix uteri among staffs of common public institutions, accounting for 5.7%. Upon the analysis by χ^2 test, the morbidity in myoma of uterus and hyperplasia of mammary glands among professional teachers is obviously higher than that among common women in public institutions ($\chi^2=12.77$, $p=0.014$).

4. Discussion

4.1 TCT examination can reduce the rate of missed diagnosis in traditional cervical smear cytology

The traditional cervical smear cytology has gone through half a century, which plays an important historical role in cervical cancer screening for early discovery of precancerous lesions. However, because of factors such as making use of materials to make the glass glide which influence the accuracy in its diagnosis, the false negative rate reported by Susini and so on is 15%-20% at least [3]. The relatively high false positive rate and false negative rate have not met the requirements of patients. In the aspect of examining abnormal epithelial cell of cervix uteri, TCT can greatly reduce false positive rate, being convenient and accurate with strong feasibility. Especially, it can be easy to distinguish high-grade squamous intraepithelial lesion (HSIL) and squamous carcinoma, and increase the positive rate in the test. The sensibility in the diagnosis of cervical lesions by TCT is higher than that of the traditional cervical smear cytology [4].

4.2 The application of TCT for screening those women with cervical lesions but without any symptom in the general survey of gynecological diseases

There is not any symptom among those women upon the general survey of gynecological diseases before examination, but in the physical examination, 78 cases of abnormalities have been found, accounting for 3.27% (78/2382), with 48.72% (38/78) of diagnostic rate in pathologic histology. Because of the high cost of TCT examination, the ratio of population upon the general survey is only 39.92%, with 3.27% of positive rate. Among them, there are 40 cases of ASCUS (1.68%), 28 cases of LSIL (1.18%), 9 cases of HSIL (0.38%), and 1 case of squamous carcinoma (0.04%). The popularization and application of TCT test in the general survey of gynaecological diseases can achieve early screening and early intervention, increase the screening rate

of cervical precancerous lesions, and reduce the morbidity and death rate of cervical cancer. Because the cervical cancer may have a relatively long stage of precancerous lesions, the screening in cervical cancer is very important. Therefore, the cervical cytological examination is an effective way to discover the cervical precancerous lesions.

5. Conclusion

The application of TCT and the biopsy under colposcope can increase diagnosis accuracy, reduce rate of missed diagnosis, discover the early lesion in cervix uteri as early as possible, and reduce the incidence rate and death rate of cervical cancer to the utmost extent [5]. So it is essential to apply high-risk HPV test and DNA ploidy analysis in order to prevent and cure cervical lesions in our country.

References

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