

EVALUATION OF FOLATE RECEPTOR-MEDIATED DETECTION AS AN ALTERNATIVE DIAGNOSTIC TOOL FOR CERVICAL INTRAEPITHELIAL NEOPLASIA 2+

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Background

HPV Testing and Cytology are currently recognized in the guidelines for cervical cancer screening in many countries. However, in many regions globally there are barriers that make it difficult to use these two methods to establish high-quality, high-coverage screening programs. Folate Receptor-mediated Detection has been proposed as a reliable method to screen cervical intraepithelial neoplasia 2+ (CIN2, CIN3, and cervical cancer).

Objective

This study aims to investigate the clinical significance of Folate Receptor-mediated Detection by comparing the accuracy of Folate Receptor-mediated Detection (FRD) with that of HPV Testing and Thinprep Cytology (TCT).



Figure 1. (left to right) FRD, TCT, and HPV testing kits.

Methods

From January 2019 to March 2019, 81 patients in the gynecology clinic of the Second Hospital of Jilin University received screening with Folate Receptor-mediated Detection, TCT, and HPV examinations upon visiting the clinic. If any of the three tests provided a positive result, colposcopy was performed with biopsy being the gold standard for pathological diagnosis.

References

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Results

- The **sensitivity** of Folate Receptor-mediated Detection, TCT, and HPV in the diagnosis of cervical intraepithelial neoplasia 2+ (CIN2, CIN3, Cervical Cancer) was 72.22%, 72.22%, and 83.33% respectively.
- The **specificity** of Folate Receptor-mediated Detection, TCT, and HPV in the diagnosis of CIN2+ was 65.07%, 60.31%, and 25.39% respectively.
- The **accuracy** of Folate Receptor-mediated Detection, TCT, and HPV in the diagnosis of CIN2+ was 66.67%, 62.96%, and 38.27% respectively.
- The **positive predictive value (PPV)** of Folate Receptor-mediated Detection, TCT, and HPV in the diagnosis of CIN2+ was 37.14%, 34.21% and 38.27% respectively.
- The **negative predictive value (NPV)** Folate Receptor-mediated Detection, TCT, and HPV in the diagnosis of CIN2+ was 89.13%, 88.37% and 84.21% respectively.

Sensitivity, Specificity, Accuracy for CIN2+ in FRD, TCT, HPV

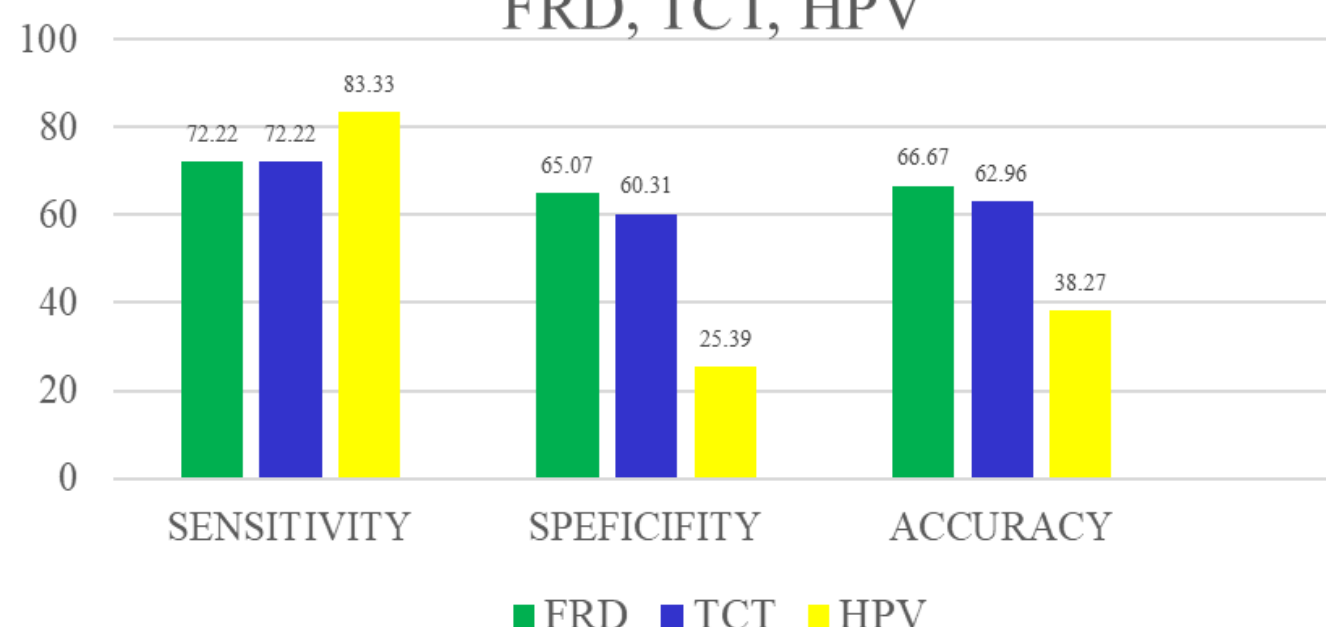


Figure 2. Sensitivity, Specificity, and Accuracy comparative graph for FRD, TCT, and HPV Testing.

Conclusion

Folate Receptor-mediated Detection provided high values of sensitivity, specificity and accuracy. While ensuring high detection rates, Folate Receptor-mediated Detection has its own unique advantages in detection speed (results in less than 60 seconds), economic cost, and patient compliance (Screen and Treat).

Folate Receptor-mediated Detection can be a very beneficial and useful tool in the primary screening of cervical intraepithelial neoplasia 2+, especially in regions with hard to reach patients. The Folate Receptor-mediated Detection method could also be used as a valuable co-test instrument with Cytology or HPV Testing.

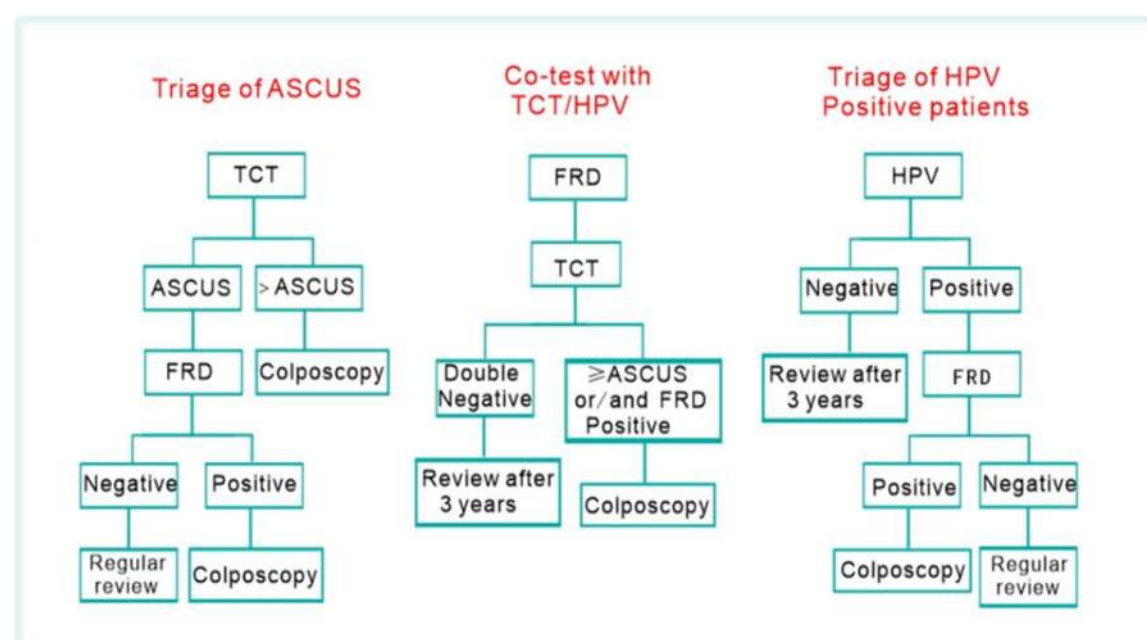


Figure 3. Potential implications of FRD in cervical cancer screening algorithms.