

Factors influencing the performance of Truscreen in a cervical screening study

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Purpose

To analyze factors influencing the performance of Truscreen in a cervical cancer screening study, so as to improve the clinical application of Truscreen.

Materials & Methods

There were 526 women attending Shenzhen Hospital of Beijing University from September 2006 to December 2007. All the women had Truscreen cervical screening first, and then evaluated by colposcopy and cervical biopsy taken if colposcopy revealed any suspicious cervical features. Because over-probing over the columnar ectropion, excessive mucus secretion and unfamiliarity with TruScreen, the false positive rate of the first 162 cases was unexpectedly high. After adequate re-training and the introduction of an improved probing technique we analyzed the remaining 391 cases with LSIL, HSIL and cervical cancer diagnosed by colposcopy and histology, to determine the factors influencing the diagnostic accuracy of Truscreen. We studied the performance of TruScreen based on age groups, cervical conditions such as ectropion and [hypertrophy](#), aceto-white epithelium, [iodine negative staining](#) and [colposcopic features](#).

Results

There were 98 TruScreen positive cases (positive rate was 28.16%). In this study, based on a total of 187 examined biopsy specimens, TruScreen had a false positive rate of 22.73%. The true positive rates of TruScreen (where the pathology was HSIL or cervical cancer) in patients <40 age group and ≥40 age group were 12.99% and 14.27% respectively ($\chi^2 = 0.043$, Non-Significant with $p > 0.05$). The positive rates in normal cervix group, mild cervical ectropion group, [moderate](#) cervical ectropion group and severe cervical ectropion group were 14.29%, 8.33% , 15.38% and 30.00%

respectively ($\chi^2= 3.563$, Non-Significant with $p>0.05$). The positive rates in [cervical hypertrophy](#) group and normal cervix group were 13.33% and 12.50% respectively. ($\chi^2= 0.228$, Non-Significant with $p>0.05$). The positive rates of TruScreen in tissues with no aceto-white lesions, with acetowhite lesions showing abnormal crypt opening, mosaic and punctation group, and aceto-white epithelium without showing abnormal crypt opening, mosaic and punctation group were 0.00% , 33.33% and 2.04% respectively. ($\chi^2= 19.955$, Significant with $p<0.05$). The positive rates of TruScreen in positive iodine stained group, partially iodine stained group and yellow iodine-negative group were 0.00%, 6.76% and 50.00% respectively. ($\chi^2= 22.714$, Significant with $p<0.05$). The positive rates of TruScreen in [abnormal colposcopic features](#) showing LSIL and HSIL groups were 7.87% and 66.67% respectively ($\chi^2= 19.718$, Significant with $p<0.05$).

Conclusion

This study showed the importance of correct probing techniques and training to achieve an acceptable Truscreen result. The performance of the Truscreen was not influenced by age or cervical condition, but positively related to acetowhite lesions, iodine negative lesions and abnormal colposcopic features.

Key words: Truscreen positive tests, Low grade squamous intraepithelial lesion (LSIL), High grade squamous intraepithelial lesion (HSIL), cervical ectropion, cervical hypertrophy, aceto-white epithelium. Iodine test, colposcopy