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Cervical cancer incidence after a negative smear: Comparing conventional cytology, ThinPrep and SurePath

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Background

Using SurePath instead of conventional cytology as the primary screen test resulted in increased CIN I, CIN II and CIN III detection rates in the Dutch national screening program, while using ThinPrep did not affect CIN detection rates.

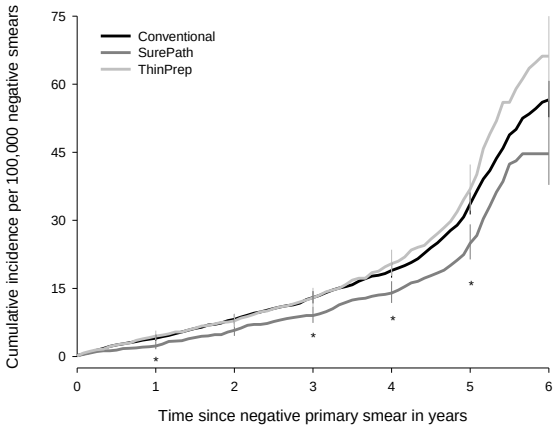
Aim

To examine whether SurePath, ThinPrep and conventional cytology differ in their sensitivity to detect clinically relevant CIN lesions we compared interval cancer rates (i.e. cervical cancer detected after a negative primary smear).

Methods

- All negative primary smears taken from January 2000 until March 2012 within the Dutch cervical cancer screening program were retrieved from the nationwide registry of histo- and cytopathology (PALGA) with a follow-up until March 2013.
- The cumulative incidence of interval cancer was calculated for each screen test.
- Cox regression analyses were performed to assess the hazard ratio adjusted for: calendar year, socio-economic status, age, and screen region.

Results



* = Significant

- The **unadjusted** cumulative incidence of cervical cancer is significantly lower 1, 3, 4 and 5 years after a negative primary SurePath smear than after a conventional smear (Figure).
- The **adjusted** hazard on interval cancer is significantly higher when using ThinPrep instead of conventional cytology or SurePath (Table).

	Adjusted hazard ratio (95% Confidence Interval)
SurePath versus conventional cytology	0.89 (0.74, 1.05)
ThinPrep versus conventional cytology	* 1.27 (1.07, 1.50)

Conclusions

- *Primary screening with ThinPrep leads to higher interval cancer rates as compared to conventional cytology and SurePath, suggesting a lower sensitivity to detect clinically relevant CIN lesions*
- *Primary screening with SurePath seems to lead to lower interval cancer rates as compared to conventional cytology (i.e. hazard ratio was not significant), suggesting that the sensitivity to detect clinically relevant CIN lesions is possibly higher*

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