

A RISK-BASED APPROACH: CO-TESTING 34,612 WOMEN WITH CYTOLOGY AND A 3-TYPE HPV MRNA TEST

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Disclosures

- SWS and LH have nothing to disclose
- FES has received compensation from PreTect AS for participation at Advisory Board meetings during the previous 2 years

Background

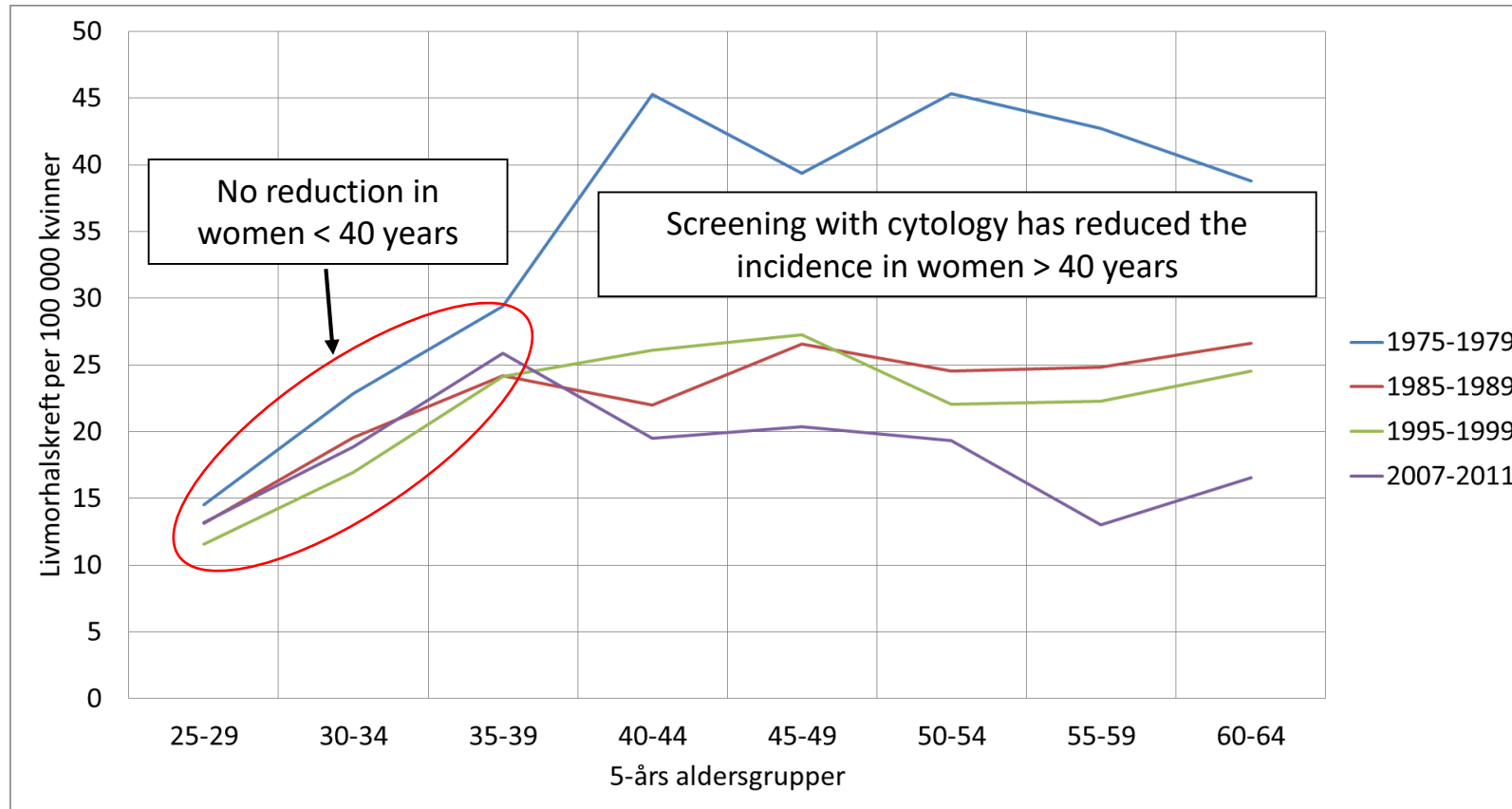
- HPV DNA screening increases sensitivity but is less specific compared to cytology
 - Young women < 30 yrs are not eligible for HPV DNA testing
 - Not all hr-HPV genotypes carries equal risk
- Cytology misses up to 50% of cervical cancers and performance is impacted by age
- Follow-up and clinical management of women with minor cervical lesions represent a challenge in health care systems
- Improved risk stratification is desirable to discriminate among women in need of direct referral and to guide management

Why co-test using a 3-type HPV mRNA test?

- HPV 16, 18 and 45 are aggressive HPV types known to cause a more rapid development of severe lesions
- > 90% of cervical cancer in women younger than 40 years of age are caused by HPV 16, 18, 45
- Up to 94% of adenocarcinomas are associated with HPV 16, 18, 45

Cervical cancer in Norway (1975-2011)

- Highest incidence of cancer in women **35-39 years**
- Screening with cytology **no reduction** of cancer < 40 y



Objectives

- Evaluate if a specific 3-type HPV E6/E7 mRNA test as co-test to cytology may increase detection rate of CIN2+
- Establish the positivity rate and variation by age
- Estimate the positive predictive value (PPV) for CIN2+ for cytology, HPV mRNA and co-test positives
- Evaluate if co-testing provides better risk stratification in women with minor cervical lesions

Methods

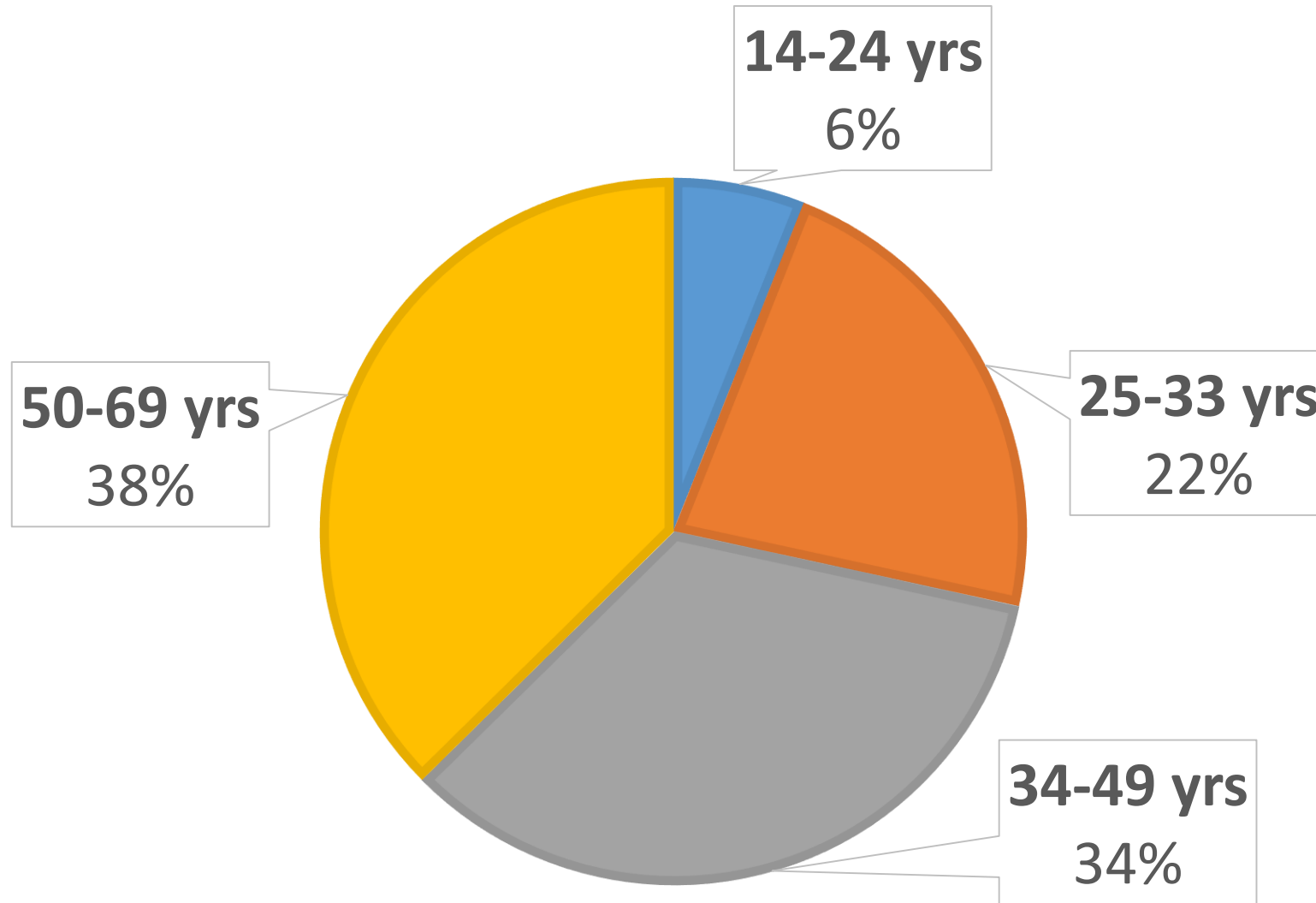
The study was initiated by Clinical Pathology, University Hospital of North Norway

Enrolled: Women attending the Norwegian screening program in the two most northern counties Troms and Finnmark between April 2016 and December 2017 with follow up until June 2018

All women were followed up according to national guidelines

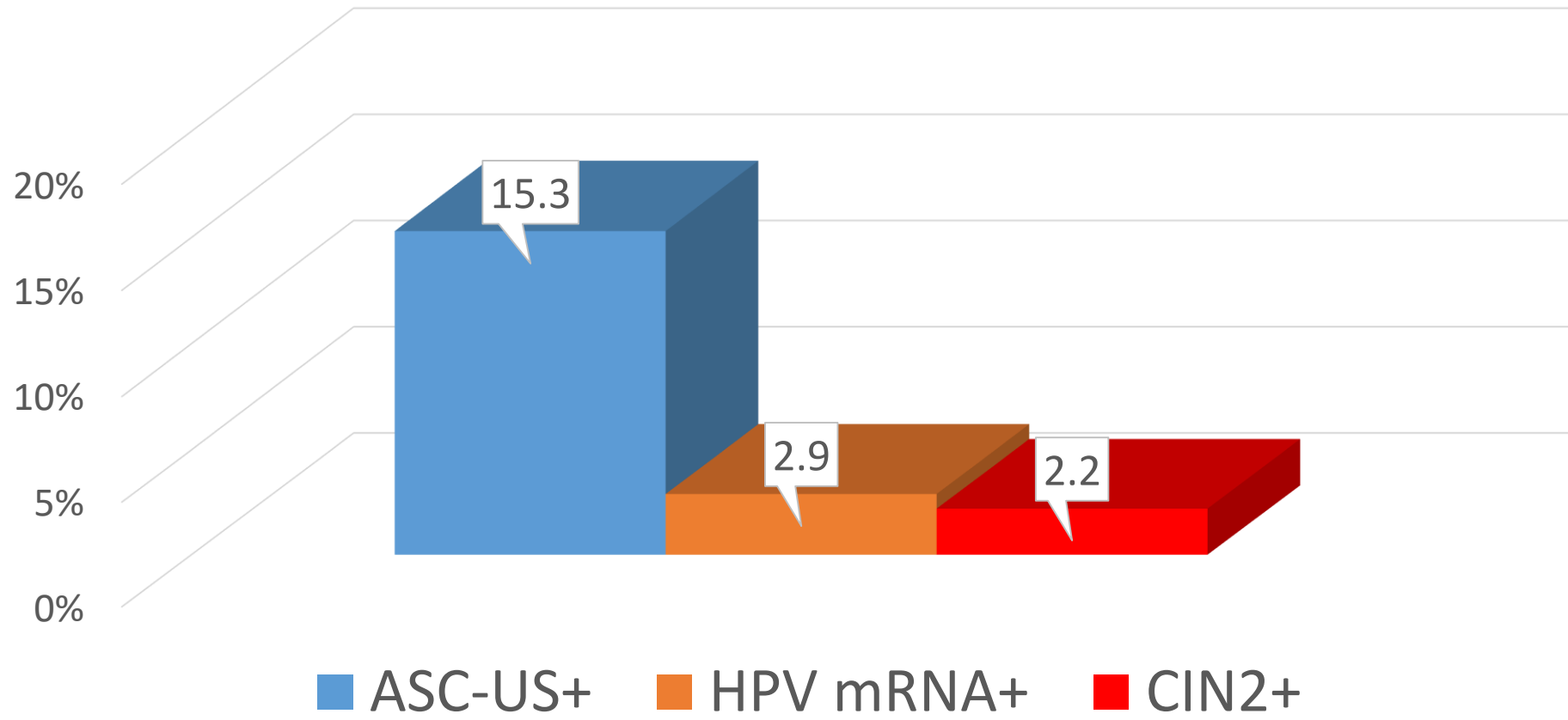
- Cytology: Bethesda system: Liquid Based (LBC)
- Histology: CIN classification - Outcome: CIN2+
- HPV mRNA: PreTect SEE
Individual genotyping of HPV E6/E7 mRNA 16, 18 and 45 incl. ISC

Valid study population by age intervals (N= 34,612)

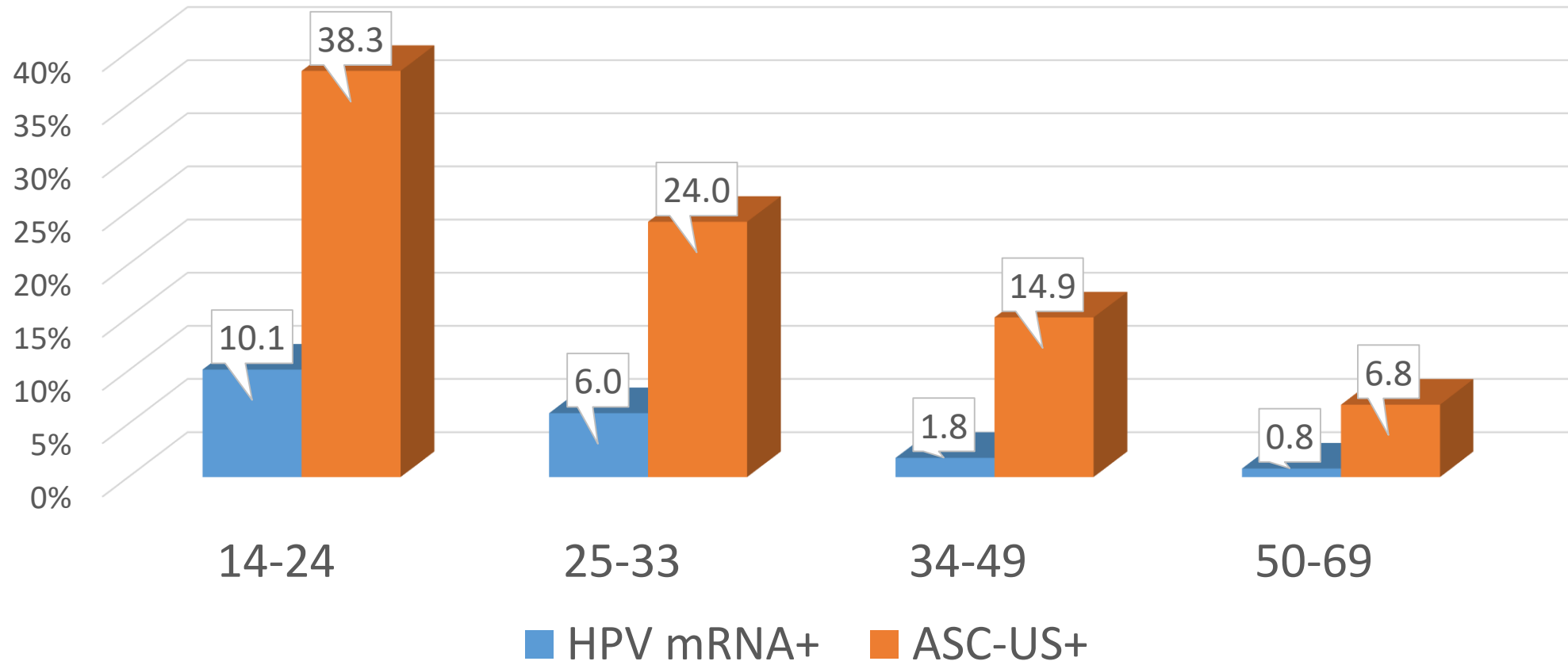


Baseline results

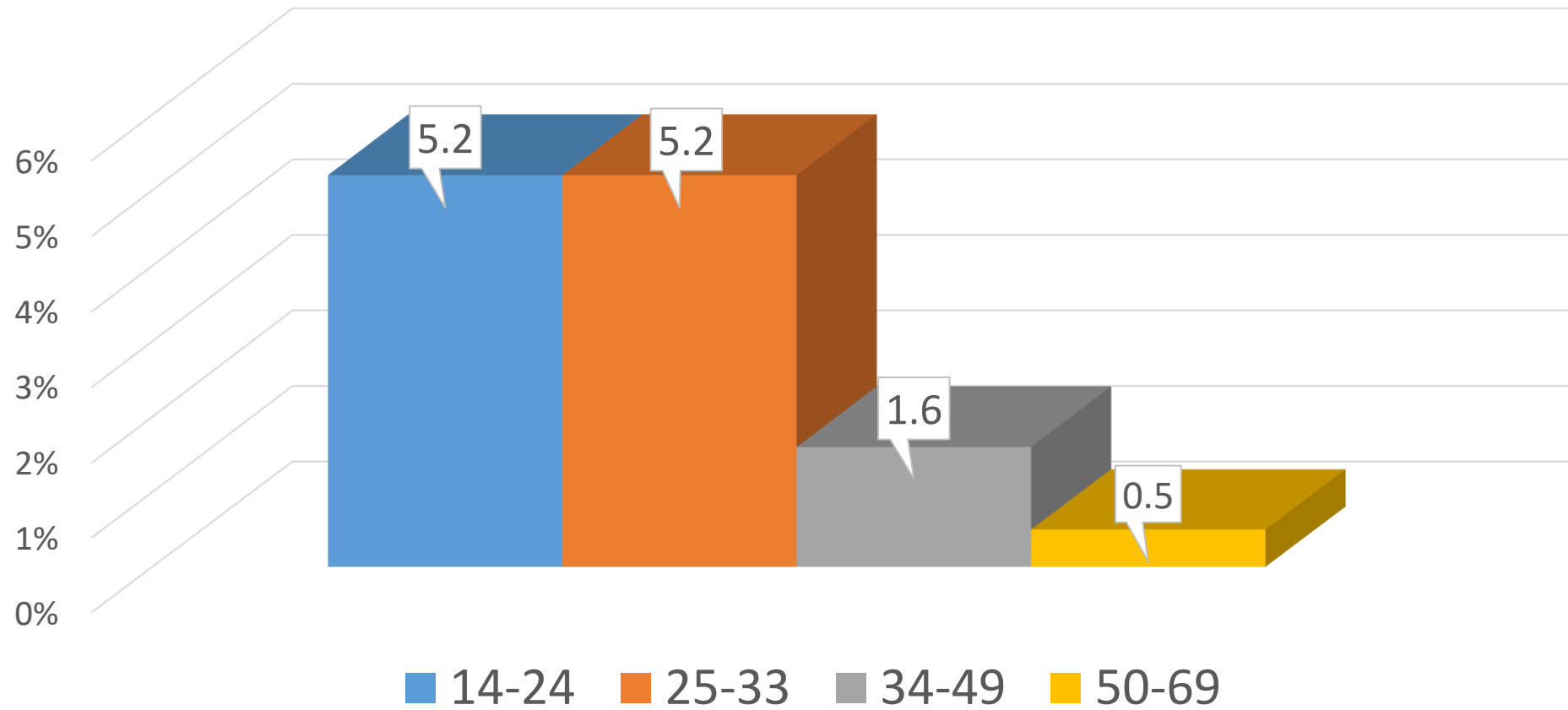
N = 34,612



Positivity rate by age



Detection of CIN2+ by age



Cytology versus HPV mRNA

Cytology

- 15.3% ASC-US+
- 13.3% PPV CIN2+

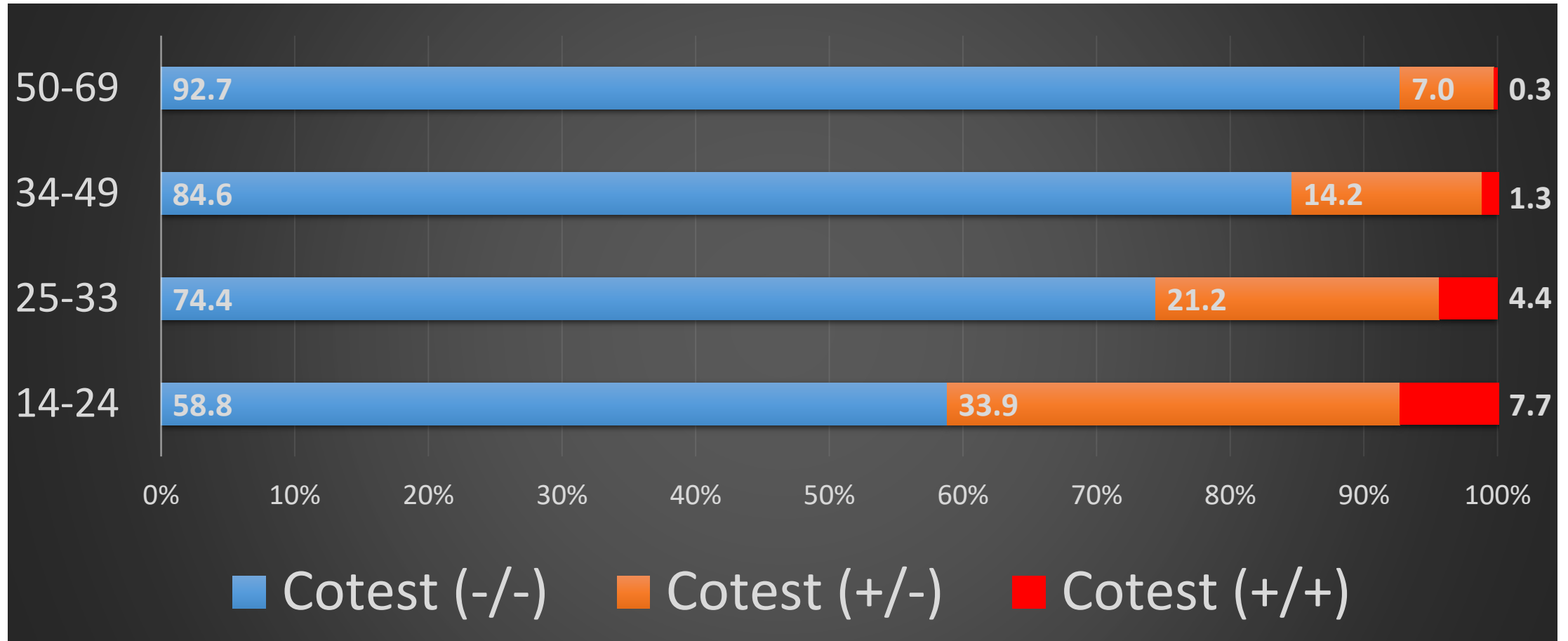
HPV mRNA

- 2.9% PreTect SEE+
- 37.9% PPV CIN2+

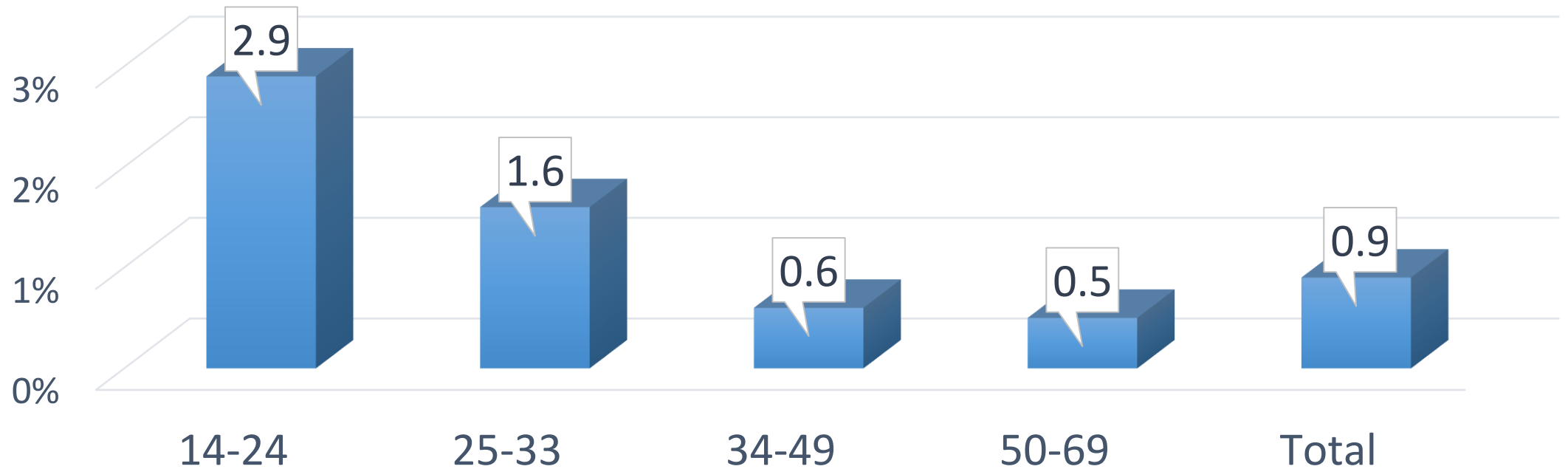
May CO-TESTING make a difference?

CO-TEST RESULTS

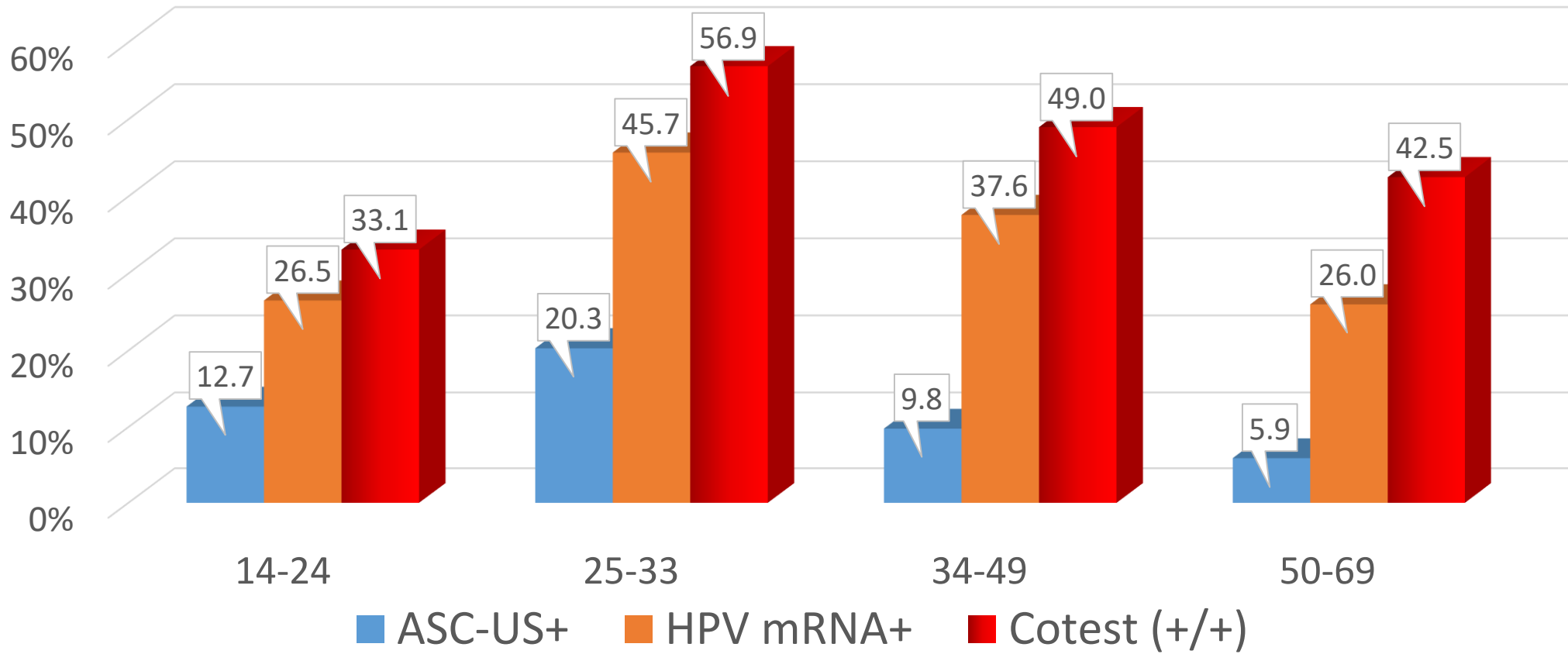
N= 34,612



Cytology negative/HPV mRNA positive by age

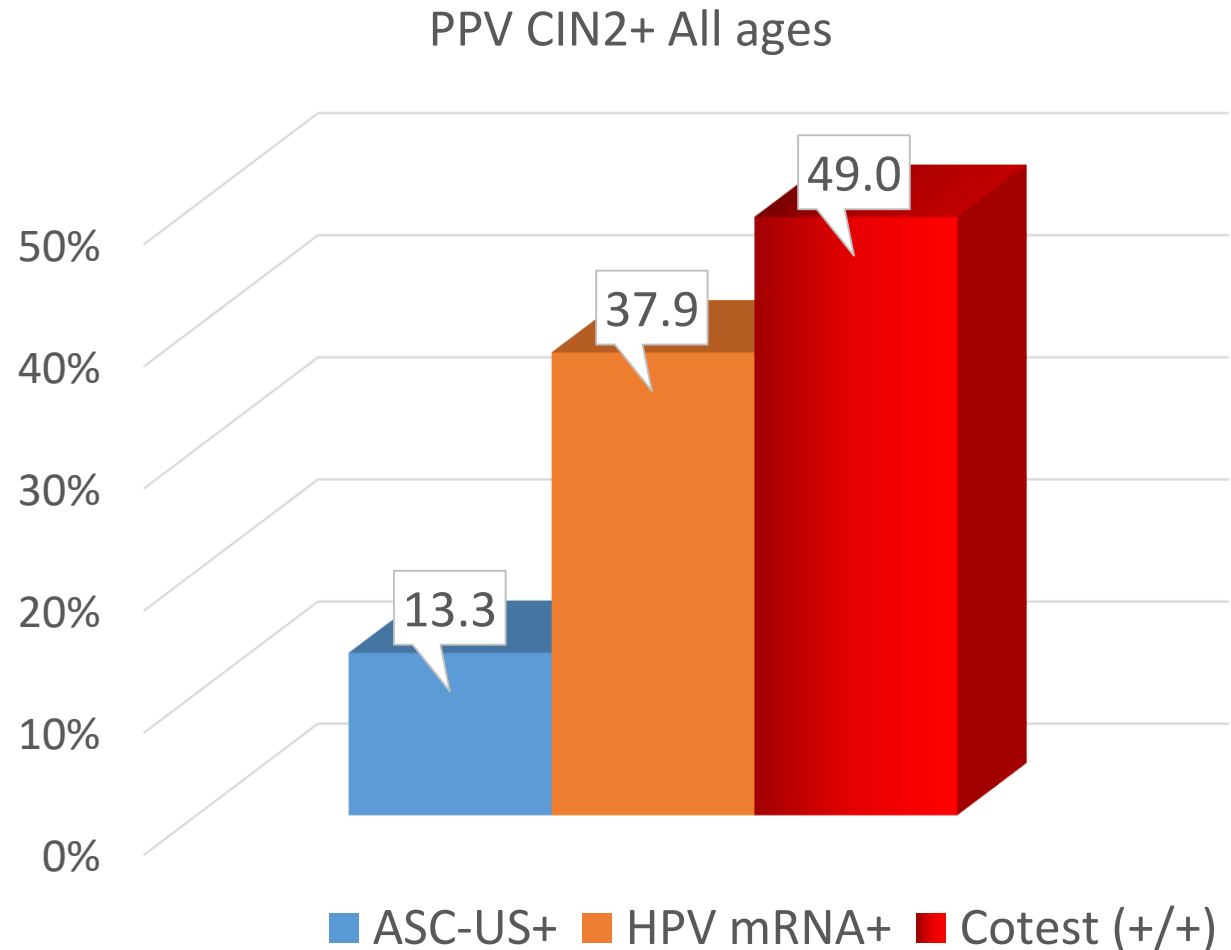


PPV CIN2+ by age



Co-testing benefits

- Significant increase in PPV for CIN2+ regardless of age
- Fewer false-positives and reduced number of colposcopy/biopsies
- Increased safety for co-test negatives (-/-)



Conclusions

- Co-testing provides a significant increase in PPV for CIN2+
 - 49.0 % (+/+) versus 13.3% (ASC-US+)
- Co-testing reduces the number of cytology false negatives, with great impact in young women
- Knowledge of HPV mRNA genotype is important to predict risk and guide management