Discovery of biomarkers in cervical smears for diagnosis and prognosis of cervical lesions

Published: 03-07-2023
Last updated: 10-01-2025

To identify molecular biomarker profiles that are associated with cervical tumorigenesis, and that can be used for development of an algorithm for detection of low grade CIN1, CIN2, CIN3 and cervical cancer. The algorithm should provide advice for a…

Ethical review	Approved WMO
Status	Recruiting
Health condition type	Viral infectious disorders
Study type	Observational non invasive

Summary

ID

NL-OMON51329

Source
ToetsingOnline

Brief title
PRECARE-RNA profiling of cervical smears

Condition

- Viral infectious disorders
- Reproductive neoplasms female benign

Synonym
CIN leasions, premalignancy of cervical cancer

Research involving
Human

Sponsors and support

Primary sponsor: Radboud Universitair Medisch Centrum
Source(s) of monetary or material Support: EUROSTARS (Rijksdienst voor Ondernemend

Nederland)

Intervention

Keyword: Biomarkers, CIN (cervical intraepithelial neoplasia), colposcopy, hrHPV

Outcome measures

Primary outcome

: The main study parameter is the difference in gene-expression profiles

between cervical smears from healthy women and women with CIN1, CIN2, CIN3 and

cancer lesions

Secondary outcome

The second objective is to evaluate how gene expression profiles in smears

relate to gene expression profiles in matching dysplastic or cancer tissue.

Study description

Background summary

Rationale: Cervical cancer is one of the main gynaecological malignancies worldwide with worldwide yearly over 500,000 new cases and over 300,000 deaths. Invasive cervical cancer is preceded by a state of cervical intraepithelial neoplasia (CIN). The introduction of population-based cervical cancer screening is known to decrease cancer incidence and mortality by early detection of high-grade CIN lesions, followed by treatment before these progress into cancer. Cervical screening starts with a sensitive test to detect high-risk human papillomaviruses (hrHPVs) in a cervical smear or a self-sampled vaginal swab. All HPV-positive smears are tested with cytology to identify potentially aberrant cells (PAP test). All women with a positive test for HPV16 or HPV18 and an aberrant PAP-test (PAP2 and higher) are referred to a gynaecologist for colposcopy. All women with a positive test for HPV[other] and an aberrant PAP test (PAP3 and higher) are also referred.
Of all women referred for colposcopy many have no or only low-grade cervical dysplasia that will spontaneously regress in 90% of cases, causing unnecessary distress for these women and leading to unnecessary healthcare costs. To reduce overdiagnosis and overtreatment, novel strategies are needed that more reliably identify women who are at risk for high-grade dysplasia and invasive cervical

cancer and who require referral for colposcopy.

Study objective

To identify molecular biomarker profiles that are associated with cervical tumorigenesis, and that can be used for development of an algorithm for detection of low grade CIN1, CIN2, CIN3 and cervical cancer. The algorithm should provide advice for a) colposcopy; b) repeat smear in 6 months; c) repeat smear in 1 year; d) return to normal screening.

Study design

prospective observational study

Study burden and risks

From all women a cervical smear will be taken during colposcopy after VIA and lugol application. A smear is a well-known and safe procedure that may cause some discomfort for women. An extra biopsy of the abnormal tissue of women treated with a biopsy or LEEP does not constitute an additional risk as the biopsy will be taken from the specimen only after tissue removal. The pathologist specialised in gynaecological pathology stated that collecting these samples for research will not interfere with the histopathological evaluation. In the group of women with cervical cancer an additional biopsy will be performed when the patient is already anesthetized because of a planned procedure. Biopsies are associated with a low additional risk (bleeding, infection) low. Participating in this study will not benefit individual participants.

Contacts

Public
Radboud Universitair Medisch Centrum

Geert Groote Plein Zuid 19
Nijmegen 6525 GA
NL
Scientific
Radboud Universitair Medisch Centrum

Geert Groote Plein Zuid 19
Nijmegen 6525 GA
NL

Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

- Age>=18 years
- Signed informed consent
- Women did notno opt-out for making their smear available for research
- Women who undergo a colposcopy examination because of a positive HPV test and an abnormal PAP-smear.
- Women in follow up after a radical vaginal trachelectomy
- Women diagnosed with cervical cancer

Exclusion criteria

- Women who are pregnant during the colposcopy or surgery
- Women who are not able to understand the study-information
- Women whom did not signed informed consent.

Study design

Design

Study phase:	3
Study type:	Observational non invasive
Intervention model:	Other
Allocation:	Non-randomized controlled trial

Masking:	Open (masking not used)
Control:	Active
Primary purpose:	Diagnostic

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	05-01-2024
Enrollment:	570
Type:	Actual

Ethics review

Approved WMO Date:	03-07-2023
Application type:	First submission
Review commission:	CMO regio Arnhem-Nijmegen (Nijmegen)
Approved WMO Date:	01-08-2024
Application type:	Amendment
Review commission:	CMO regio Arnhem-Nijmegen (Nijmegen)

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
CCMO	NL83334.091.22