4-IN THE LUNG RUN: towards INdividually tailored INvitations, screening INtervals, and INtegrated co-morbidity reducing strategies in lung cancer screening

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European randomised controlled multi-centred implementation trial amongst 24,000 individuals, at high risk for developing lung cancer, evaluating whether it is safe to have risk-based less intensive screening intervals after a negative baseline CT.

Ethische beoordeling	Positief advies
Status	Werving gestart
Type aandoening	-
Onderzoekstype	Interventie onderzoek

Samenvatting

ID

NL-OMON27422

Bron
NTR

Verkorte titel
4-IN-THE-LUNG-RUN

Aandoening

lung cancer

Ondersteuning

Primaire sponsor: ErasmusMC
Overige ondersteuning: EU - Horizon2020

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

stage I-II lung cancer incidence

Toelichting onderzoek

Achtergrond van het onderzoek

With 338,000 EU-deaths annually, lung cancer is a devastating problem. CT screening has the potential to prevent ten-thousands of lung cancer deaths annually. The positive results of the Dutch-Belgian screening trial (NELSON), with relatively low referral rates, and the NLST in the US, with annual screens only, provided conclusive evidence on the benefits (and possible harms). However, EU-implementation is likely to be limited, slow and of variable quality throughout European countries, and current international guidelines could easily require up to 25 million CT screens annually. The most optimal strategy in risk-based lung-thoracic screening is still unknown regarding the optimal and most cost-effective (e.g., targeted) strategy 1) to recruit high-risk individuals, 2) to integrate smoking cessation and co-morbidity-reducing services, and 3) to determine the preferred personalised (risk-based) screening interval. Personalised regimens based on the baseline CT result can potentially retain 85% of the LC mortality reduction achievable through screening at 45% less screens, thus potentially saving much unnecessary harm associated with screening, and 0.5-1 billion Euros per year.

The heart of 4-IN-THE-LUNG-RUN is a European randomised controlled multi-centred implementation trial amongst 24,000 individuals, at high risk for developing lung cancer, evaluating whether it is safe to have risk-based less intensive screening intervals after a negative baseline CT.
Various methods to improve participation of hard-to-reach individuals will be assessed in five different healthcare settings/countires. Innovative co-morbidity reducing strategies will be tested including other markers on CT imaging, as Calcium Score and COPD. Cost impact and cost-effectiveness analyses using a natural history model will steer implementation. The experienced consortium will strongly interact with key stakeholders, and discuss interim results with key other international initiatives on CT screening, biomarkers, and smoking cessation practices. This proposal will form the evidence base for risk-based lung cancer screening with huge benefits for the EU, on health outcomes, cost savings, and innovation in the long run.

Doel van het onderzoek

European randomised controlled multi-centred implementation trial amongst 24,000 individuals, at high risk for developing lung cancer, evaluating whether it is safe to have risk-based less intensive screening intervals after a negative baseline CT.

Onderzoeksopzet

The primary analysis will compare the cumulative hazard functions of stage I/II cancers between the two randomized groups using a logrank test at 5-years of follow-up. The rate of stage I/II cancers for each arm will be estimated as the number of stage I/II cancers detected either clinically or through screening out of the total person-years of follow-up in their respective arm.

The primary analysis will be performed on the per-protocol (PP) population, which will include all randomized and eligible participants in the arm they were randomized to, who complied with their screening recommendations. Intention-To-Treat (ITT) analyses will be performed as a sensitivity analysis.
The per-protocol definition will be used for the primary analysis of the trial and is as follows per arm:
- Standard arm: Having received a negative baseline screening, and then adhering to an annual interval between screening (up to two CT screens after baseline).
- Risk-based arm: Having received a negative baseline screening, and then adhering to a biennial interval between screening (up to one CT screen after baseline).

The secondary endpoints are:
1: The rate of (late stage) interval cancers in each arm. --> measures by linkage national cancer registry at 5-years of follow-up
2: The rates of informed uptake of (sub-group) participants --> measured by questionnaire with validated questions about Informed-Decision Making from before randomization till after screening rounds.
3: The rates of smoking cessation within individuals in the trial smoking at the baseline screening. --> measured by a health questionnaire with validated questions about smoking behaviour, comparing recruitemnt data and baseline screening data.
4: The crude costs and cost-effectiveness of each arms.--> by using MISCAN modelling at 5-6 years of follow-up

Onderzoeksproduct en/of interventie

CT lung cancer screening

Contactpersonen

Publiek

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Carlijn van der Aalst

0031-10-70343446

Wetenschappelijk

ErasmusMC
Carlijn van der Aalst

0031-10-70343446

Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

men and women, aged 60-79 years, at high risk for developing lung cancer, who gave written informed consent to participate

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

1. Recent abnormal pulmonary findings under work-up of standard care.
2: Having had a computed tomography scan of the thorax <1 year before potential entry into the study.
3: Current or prior history of lung cancer.
4: Inability to provide signed informed consent.
5: Insufficient understanding of the languages in which trial information is available.
6: Unable to be followed-up for at least 5-years.
7: Body weight over 140 kg

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Parallel
Toewijzing:	Gerandomiseerd
Blindering:	Open / niet geblindeerd
Controle:	Geneesmiddel

Deelname

Nederland

Status:	Werving gestart
(Verwachte) startdatum:	01-01-2020
Aantal proefpersonen:	26000
Type:	Verwachte startdatum

Voornemen beschikbaar stellen Individuele Patiënten Data (IPD)

Wordt de data na het onderzoek gedeeld: Nog niet bepaald

Ethische beoordeling

Positief advies

Datum:	31-08-2021
Soort:	Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

Geen registraties gevonden.

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL9710
Ander register	Minitry of Health (due to Population Screening Act) : 2379962-1011169-PG

Resultaten