Aerosol droplet formation during HFNC treatment * risk assessment for SARS-CoV-2 transmission to health care workers

Published: 13-05-2020
Last updated: 09-04-2024

The aim of this study is to obtain further knowledge on aerosol droplet formation and spread during oxygen therapy.

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Respiratory tract infections
Study type	Observational non invasive

Summary

ID

NL-OMON49784

Source
ToetsingOnline

Brief title
Aerosol droplets during HFNC

Condition

- Respiratory tract infections

Synonym
COVID-19, hypoxemia

Research involving
Human

Sponsors and support

Primary sponsor: Academisch Medisch Centrum
Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: COVID-19, oxygen therapy, viral transmission

Outcome measures

Primary outcome

Aerosol droplet formation (quantification per surface area) and travel

velocity.

Secondary outcome

NA

Study description

Background summary

Currently, there is an ongoing global health crisis caused by pandemic SARS-CoV-2. Health professionals have an increased risk of infection with SARS-CoV-2 as a result from close contact with patients with COVID-19. Increased risk of transmission occurs through aerosol droplet formation and spread during coughing, sneezing but also during aerosol-forming medical treatments such as suction and intubation of the airways.
At the moment, the precise risks of aerosol droplet formation and spread during several oxygen therapy modalities, in particular high flow nasal cannula (HFNC), is unclear. This results in health care professionals to avoid potentially beneficial oxygen therapy modalities, or cause disproportionate (too low or too high) risk assessment with regard to personal protection equipment and procedures.
More knowledge on aerosol droplet formation and spread during different oxygen therapy modalities is urgently needed.

Study objective

The aim of this study is to obtain further knowledge on aerosol droplet formation and spread during oxygen therapy.

Study design

Prospective.
In dit onderzoek worden gezonde proefpersonen kortdurend behandeld met zuurstof

via een masker en neusbril. Tijdens deze toediening wordt gevraagd met open en gesloten mond te ademen en te hoesten. De totale duur voor elk proefpersoon wordt geschat op 5 minuten.
Tijdens de zuurstoftoediening wordt middels een frame met laser licht aerosol druppel vorming gedetecteerd met video software analyse achteraf.

In this study, healthy volunteers will be treated for a short period with oxygen via a mask and nasal cannula. During this treatment they will be asked to breath with open and closed mouth and to cough. The total duration for every person is estimated at 5 minutes.
During the oxygen treatment aerosol droplet formation will be detected with a frame with laser beam with video software analysis afterwards.

Study burden and risks

Risk for the participants is negligible. Burden is mild for a short period (5 minutes).
The participants are not related to the study and do not benefit from participating.

Contacts

Public
Academisch Medisch Centrum

Meibergdreef 9
Amsterdam 1105 AZ
NL
Scientific
Academisch Medisch Centrum

Meibergdreef 9
Amsterdam 1105 AZ
NL

Trial sites

Listed location countries

Netherlands

Eligibility criteria

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

Inclusion criteria

Healthy volunteers

Exclusion criteria

Chronic respiratory diseases, fever or upper respiratory disease symptoms in the last 2 weeks prior to participation

Study design

Design

Study type: Observational non invasive

Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Prevention

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	18-05-2020
Enrollment:	6
Type:	Actual

Medical products/devices used

Generic name:	Standard oxygen mask and high flow nasal cannula
Registration:	Yes - CE intended use

Ethics review

Approved WMO Date:	13-05-2020
Application type:	First submission
Review commission:	METC Amsterdam UMC

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	NL73585.018.20