Clinical vaccine efficacy and clinical effectiveness of oseltamivir in reducing Influenza related complications in patients with a solid organ transplant (inFLUenza in Solid Organ Transplant recipients, FLUSOT)

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instant start of oseltamivir treatment in patients admitted with influenza virus infection reduces 30 day mortality, ICU admission and length of hospital stay. The clinical vaccine effectiveness of yearly influenza vaccine ((attack rate in...

Ethische beoordeling	Niet van toepassing
Status	Werving nog niet gestart
Type aandoening	-
Onderzoekstype	Observationeel onderzoek, zonder invasieve metingen

Samenvatting

ID

NL-OMON21725

Bron
Nationaal Trial Register

Verkorte titel
FLUSOT

Aandoening

respiratory virus infection in solid organ transplant recipients

Ondersteuning

Primaire sponsor: none
Overige ondersteuning: none

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

30 day mortality

Toelichting onderzoek

Achtergrond van het onderzoek

Influenza viruses are one of the most common causes of respiratory tract infections worldwide [1]. In healthy, immunocompetent individuals, infection is usually mild and self-limiting [2]. However, for recipients of a solid organ transplant, Influenza can lead to serious complications, such as secondary bacterial pneumonia, acute rejection of the transplant and death [2-5]. In addition, if there is Influenza, these patients have a greatly increased chance of being hospitalized, up to 70% [6]. This group of patients has a higher risk of a complicated course of Influenza due to the immunosuppressants they use to prevent transplant rejection. Because of this increased risk of complications related to Influenza, it is precisely in this group of patients that it is important to investigate which ways to prevent and treat Influenza are effective.

Prevention with influenza vaccine is widely used for different frail subgroups. For the immunocompromised patients, it is known that the antibody response is reduced. However, this does not correlate with clinical effectiveness. We therefore assessed clinical effectiveness by comparing vaccination percentage in the patients who are influenza positive and the patients who are influenza negative. The clinical vaccine effectiveness of yearly influenza vaccine = (attack rate in unvaccinated-attack rate in vaccinated)/attack rate in unvaccinated.

The most commonly prescribed antiviral medicine for the treatment of Influenza is oseltamivir. Oseltamivir is a neuraminidase inhibitor that prevents virions from infected cells from infecting new cells [7]. The treatment guideline recommends starting oseltamivir within 48 hours after the onset of symptoms appropriate to Influenza [8]. However, this advice is based on research on immunocompetent persons. Only limited data is available for the effectiveness of oseltamivir in immune compromised people, such as recipients of a solid organ transplant [6, 9]. In addition, in immunocompromised patients, the period of release of virions from infected cells is longer than in immune-competent individuals [10]. It is therefore biologically plausible that oseltamivir might be effective in immunocompromised people. The aim of the current study is to determine the effectiveness of treatment with oseltamivir on clinical outcome measures in recipients of a solid organ transplant. The primary research question of the current study is:

Research questions:
1) Does instant start of Influenza treatment with oseltamivir reduces mortality, ICU admission and admission duration in patients with a solid organ transplant?
2) What is the influenza vaccine effectiveness in solid organ transplant patients?

The design of the current study is a retrospective cohort study. The research uses patient data from the Leiden transplant region. This includes the Leiden University Medical Center, HAGA Hospital, Haaglanden Medical Center, Alrijne Hospital, Groene Hart Hospital, Lange Land Hospital and Amphia Hospital.
For question 1 we will use propensity matching to assess the effect.

The study population is defined as follows: patients with a solid organ transplant (kidney, liver, pancreas, islets of Langerhans or combination of these) who were admitted to hospital, and
- positive Influenza diagnostics taken within 48 hours after admission (for the oseltamivir effectiveness, 1)
OR
- viral PCR diagnostics for any respiratory viral pathogen (for vaccine effectiveness, 2).

Other types of organ transplants, such as lung transplants, are not included in the current study because these transplants do not take place in the Leiden transplant region. With Influenza diagnostics is meant: Influenza A or B PCR in sputum, nasopharyngeal swab, throat swab or bronchoalveolar lavage (BAL). Patients can only be included once per Influenza season.

In these patients the effect of adequate treatment with oseltamivir on clinical outcome measures is being investigated. Adequate treatment is defined as oseltamivir in adequate dosage adjusted for eGFR started within 48 hours of hospitalization. The primary outcome measure is 30-day mortality. Secondary outcome measures are mortality during admission, admission duration, IC admission and rejection of the organ transplant.
Vaccination status, if not available in hospital medical dashboard, is retrieved from the general practitioner.

Doel van het onderzoek

instant start of oseltamivir treatment in patients admitted with influenza virus infection reduces 30 day mortality, ICU admission and length of hospital stay.
The clinical vaccine effectiveness of yearly influenza vaccine ((attack rate in unvaccinated-attack rate in vaccinated)/attack rate in unvaccinated) is non inferior to the clinical vaccine effectiveness in the general population

Onderzoeksopzet

not applicable

Contactpersonen

Publiek

LUMC
Geert Groeneveld

0715269111

Wetenschappelijk

LUMC
Geert Groeneveld

0715269111

Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

Admission in a hospital within the Leiden Transplantation Region with laboratory confirmed Influenza A or B infection or with a diagnostic test for respiratory virus infection in solid organ recipient (kidney, liver, pancreas or combination) between October 2013 and March 2020 (end of flu season 2020)

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

none

Onderzoeksopzet

Opzet

Type:	Observationeel onderzoek, zonder invasieve metingen
Onderzoeksmodel:	Anders

Toewijzing:	N.v.t. / één studie arm
Blindering:	Open / niet geblindeerd
Controle:	N.v.t. / onbekend

Deelname

Nederland

Status:	Werving nog niet gestart
(Verwachte) startdatum:	01-03-2020
Aantal proefpersonen:	200
Type:	Verwachte startdatum

Voornemen beschikbaar stellen Individuele Patiënten Data (IPD)

Wordt de data na het onderzoek gedeeld: Nog niet bepaald

Toelichting
not applicable

Ethische beoordeling

Niet van toepassing

Soort:	Niet van toepassing

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	NL8343

Register	ID
Ander register	LUMC : to be assigned

Resultaten