Effect of perioperative ketamine on postoperative cognition – a randomized placebo-controlled trial

Gepubliceerd: 20-10-2014 Laatst bijgewerkt: 13-12-2022

We hypothesize that perioperative ketamine will reduce cognitive decline in postoperative patients, in line with its analgesic and anti-inflammatory properties.

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

Samenvatting

ID

NL-OMON20273

Bron
Nationaal Trial Register

Verkorte titel
ProKet

Aandoening

postoperative cognitive decline

Ondersteuning

Primaire sponsor: Leiden University Medical Center
Overige ondersteuning: Eurocept

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

• To assess the effect of perioperative ketamine on postoperative cognitive function on day 1

and 30 following surgery.

Toelichting onderzoek

Achtergrond van het onderzoek

S(+)-ketamine (ketanestTM) is an N-methyl-D-aspartate receptor (NMDAR) antagonist available for various indications including the induction and maintenance of anesthesia (in high dose), perioperative pain relief (in moderate dose) and chronic pain relief (in low dose). At LUMC perioperative ketanest is used as adjuvant during large surgical procedures for treatment of pain and stress (consequently the opioid dose may be reduced) and for reduction of perioperative inflammation. Worldwide the use of ketamine is rapidly increasing taking its beneficial effect on chronic pain and ability to produce a rapid (within hours) onset relief of depression-related symptoms in therapy-resistant depression.

Both surgery and anesthesia have long-term postoperative effects on cognition. Especially in the elderly there are indications that stress from surgery (and hospital admittance) and anesthesia have deleterious effects on postoperative cognitive dysfunction. Moreover, pain and inflammation may contribute to postoperative cognitive deterioration. There are indications that ketamine could improve cognition 1 week following cardiac surgery (Hudetz et al. Ketamine attenuates post-operative cognitive dysfunction after cardiac surgery. Acta Anaesthesiol Scand 2009; 53: 864-72). This was related to the anti-inflammatory effects of ketamine. The current study is aimed at assessing the effect of ketamine exposure during and following anesthesia on cognition in patients undergoing elective non-cardiac surgical procedures. To that end patients will be randomized to receive ketanest or placebo in the peri- and postoperative phase and cognitive tests will be performed at day 1 and ~30 following surgery.

Doel van het onderzoek

We hypothesize that perioperative ketamine will reduce cognitive decline in postoperative patients, in line with its analgesic and anti-inflammatory properties.

Onderzoeksopzet

- Pre-operative: blood sample, cognition testing

- Peroperative: blood pressure, heart rate, bispectral index, NoL, sufentanil dose, propofol inhalational anesthesia dose

- Acute postoperative: pain scores, occurrence of nausea/vomiting, lightheadedness/dizziness, drug high, psychomimetic side effects

- 1 day postoperative: blood sample, cognition test, pain scores, occurrence of

nausea/vomiting, lightheadedness/dizziness, drug high and other psychomimetic side effects, respir8 monitor assessment in the PACU

- 2 days postoperative: blood sample, occurrence of nausea/vomiting, lightheadedness/dizziness, drug high, psychomimetic side effects

- 30 days postoperative: cognition test, pain scores

Onderzoeksproduct en/of interventie

The pharmacy will randomize patients to receive placebo (normal saline; placebo group) or ketanest (S(+)-ketamine; Eurocept BV, Ankeveen, NL) according to the LUMC protocol. This protocol states:

1. Initiate administration prior to surgical incision

2. Start with an intravenous bolus administration of 0.35 mg/kg of ketanest followed by 0.4 mg/kg per h.

3. Surgeries > 2 h: Stop infusion 30-min prior to the end of surgery.

4. Continue or restart infusion in the postoperative phase at 0.1 mg/kg per h and continue for 48 h.

Contactpersonen

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Wetenschappelijk

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

Patients planned for elective surgery lasting > 2 1 h that require postoperative pain relief will be enrolled in the study after written informed consent is obtained.

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

Exclusion criteria:

• age < 54 years,

• body mass index > 35 kg/m2,

• history or present psychiatric disease,

• untreated/uncontrolled hypertension (with a diastolic blood pressure > 100 mmHg)

• epilepsy,

• increased intracranial pressure,

• untreated hypertension,

• untreated ischemic cardiac disease,

• inability to communicate in the Dutch language,

• inability to give informed consent.

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Parallel

Toewijzing:	Gerandomiseerd
Blindering:	Dubbelblind
Controle:	Placebo

Deelname

Nederland

Status:	Werving gestart
(Verwachte) startdatum:	17-09-2014
Aantal proefpersonen:	50
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:	20-10-2014
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	NL4598
NTR-old	NTR4852

Register	ID
Ander register	- : P14.060

Resultaten