# Can an interleukin-1 receptor antagonist reduce inflammation following subarachnoid haemorrhage?

Submission date	Recruitment status	[X] Prospectively registered
12/05/2011	No longer recruiting	<pre>Protocol</pre>
Registration date	Overall study status	Statistical analysis plan
28/06/2011	Completed	[X] Results
Last Edited	Condition category	Individual participant data
25/05/2018	Circulatory System	

## Plain English summary of protocol

Background and study aims

A subarachnoid haemorrhage (SAH) occurs when there is uncontrolled bleeding into the space surrounding the brain. The majority of SAH are caused when a bulging blood vessel in the brain bursts. The pooling of blood puts pressure on the brain, quickly leading to unconsciousness. A common complication of a SAH is where the arteries supplying the brain close up (vasospasm), causing the brain to become starved of oxygen. This often happens 3-10 days after the SAH and is known as delayed cerebral ischaemia (DCI). DCI is the most common cause of permanent disability and death after SAH, and so its prevention is a very important part of SAH treatment. Recent studies have shown that the chemicals in the blood responsible for inflammation such as interleukin-1 (IL-1) could be causing the vasospasm by irritating blood vessels. In the body, the action of IL-1 is blocked by a naturally occurring anti-inflammatory called interleukin1 receptor antagonist (IL1Ra). Drugs containing a manufactured version of IL-1Ra are used to treat diseases relating to inflammation, such as arthritis. One of these drugs which has been successful is Kineret. The aim of this study is to find out whether Kineret can reduce the amount of IL-1 in the body, and if this can help to prevent DCI.

## Who can participate?

Adults who have had an acute subarachnoid haemorrhage within the past 72 hours.

## What does the study involve?

Participants are randomly allocated into two groups. Those in the first group receive an injection of Kineret twice a day for up to 21 days after the SAH. Those in the second group do not receive any Kineret injections throughout the study period. Chemical indicators of inflammation (including IL-1) are measured using blood tests at the start of the study, then daily for 8 days and then again at days 14 and 21.

What are the possible benefits and risks of participating? Not provided at time of registration Where is the study run from? Salford Royal Hospital (UK)

When is the study starting and how long is it expected to run for? October 2011 to April 2014

Who is funding the study? Medical Research Council (UK)

Who is the main contact?
Prof. Pippa Tyrrell
Pippa.tyrrell@manchester.ac.uk

## Contact information

## Type(s)

Scientific

#### Contact name

Prof Pippa Tyrrell

#### Contact details

Greater Manchester Neuroscience Centre and University of Manchester Brain Injury Research Group Salford Royal NHS Foundation Trust Clinical Sciences Building Stott Lane Salford United Kingdom M6 8HD +44 (0)161 206 5586 pippa.tyrrell@manchester.ac.uk

## Additional identifiers

Clinical Trials Information System (CTIS)

2011-001855-35

#### Protocol serial number

MRC Ref: G1001252

# Study information

#### Scientific Title

Does a subcutaneous interleukin-1 receptor antagonist reduce inflammation following subarachnoid haemorrhage?

#### **Acronym**

SC IL-1Ra in aSAH

#### **Study objectives**

A subcutaneous interleukin-1 receptor antagonist will reduce inflammation in patients with acute cerebrovascular disease and hence will subsequently improve outcome.

#### Ethics approval required

Old ethics approval format

## Ethics approval(s)

Full study R&D approval given on 14/09/2011, REC Ref: 11/NW/0390

#### Study design

Multi-centre single-blind open-label randomised controlled trial

#### Primary study design

Interventional

## Study type(s)

Treatment

#### Health condition(s) or problem(s) studied

Subarachnoid haemorrhage

#### **Interventions**

Current interventions as of 15/07/2013:

- 1. Study is a single-blind, open-label, randomised control trial of 140 patients. To be eligible to receive the drug, they must be within 72 hours of aneurysmal subarachnoid haemorrhage (aSAH), recruited from Salford Royal NHS Foundation Trust, The Walton Centre for Neurology and Neurosurgery and University Hospital North Staffordshire
- 2. Participants will be randomised to study treatment (IL-1Ra; Kineret®) or no study treatment
- 3. Participants will be stratified depending on time since ictus
- 4. Participants in treatment group will receive twice-daily (bd), subcutaneously administered IL-1Ra for maximum of 21 days post ictus (or discharge from study centre)
- 5. Baseline blood sample/assessment will be obtained following consent and prior to administration of study medication
- 6. Blood samples/assessments will be obtained daily to 8 days from ictus
- 7. Further blood samples/assessments will be obtained at days 14 and 21 from ictus unless discharged from study centre
- 8. Analysis of blood samples will measure the effect of IL-1Ra on inflammatory markers (including IL-6 and CRP)
- 9. Safety data will be obtained throughout in-patient stay and at 30 day telephone contact 10. Six month outcome data will be obtained by telephone Glasgow Outcome Score

#### Previous interventions:

- 1. Study is a single-blind, open-label, randomised control trial of 140 patients, who are eligible to receive drug within 72 hours of aneurysmal subarachnoid haemorrhage (aSAH) recruited to Greater Manchester Neuroscience Centre
- 2. Participants will be randomised to study treatment (IL-1Ra; Kineret®) or no study treatment
- 3. Participants will be stratified depending on time since ictus
- 4. Participants in treatment group will receive twice-daily (bd), subcutaneously administered IL-1Ra for maximum of 21 days post ictus (or discharge from study centre)
- 5. Baseline blood sample/assessment will be obtained following consent and prior to

administration of study medication

- 6. Blood samples/assessments will be obtained daily to 8 days from ictus
- 7. Further blood samples/assessments will be obtained at days 14 and 21 from ictus unless discharged from study centre
- 8. Analysis of blood samples will measure the effect of IL-1Ra on inflammatory markers (including IL-6 and CRP)
- 9. Safety data will be obtained throughout in-patient stay and at 30 day telephone contact 10. Six month outcome data will be obtained by telephone Glasgow Outcome Score

#### Intervention Type

Drug

#### Phase

Not Applicable

#### Drug/device/biological/vaccine name(s)

Kineret®

#### Primary outcome(s)

To determine the effect of SC IL-1Ra on plasma IL-6 concentration from day 3 8 following ictus

## Key secondary outcome(s))

- 1. To determine the effect of SC IL-1Ra on other plasma inflammatory markers on days 3 to 8 following the ictus of aSAH
- 2. To determine the effect of SC IL-1Ra on plasma inflammatory markers on day 14 and 21 following aSAH
- 3. To determine the effect of SC IL-1Ra on clinical outcome (Glasgow Outcome Score [GOS], modified Rankin Score [mRS], DCI [Delayed Cerebral Ischaemia] incidence, mortality) following aSAH
- 4. To obtain further feasibility and safety data in patients given SC IL-1Ra

#### Completion date

30/04/2014

# Eligibility

#### Key inclusion criteria

- 1. Patients with confirmed spontaneous aSAH who are admitted to our neurosurgical department at SRFT where consent can be obtained and drug administered within 72 hours
- 2. No concomitant health problems that, in the opinion of the Principal Investigator (PI) or designee, would interfere with participation, administration of study treatment or assessment of outcomes including safety, for example, pre-existing malignancy
- 3. Renal function within normal limits (< 177 µmol/l)
- 4. Willing and able to give informed consent or consent available from a patient representative (personal) for study inclusion including agreement in principle to receive study intervention and undergo all study assessments
- 5. Aged 18 years or above

## Participant type(s)

Patient

## Healthy volunteers allowed

No

#### Age group

Adult

#### Lower age limit

18 years

#### Sex

All

#### Key exclusion criteria

- 1. Unconfirmed or uncertain diagnosis of spontaneous aSAH
- 2. Known or suspected infection in the preceding 2 weeks or at the time of consideration for the study
- 3. Known allergy to E. coli or any of the constituents of the study medication as established from the patient themselves, reliable representative and clinical records
- 4. Previous or concurrent treatment with recombinant IL-1Ra known at the time of study entry
- 5. Previous or current treatment with medication suspected of interacting with recombinant IL-1Ra. such as TNF-a inhibitors
- 6. Known to have participated in a clinical trial of an investigational agent or device in the previous 30 days or for the period determined by the protocol of the study the patient has taken part in
- 7. Known or planned pregnancy (pregnancy test to be performed in women of child-bearing potential) or breast-feeding
- 8. Clinically significant concurrent medical condition, at the PIs (or designees) discretion, which could affect the safety, tolerability, or efficacy in this study
- 9. Previous inclusion in the current study (known prior to inclusion).
- 10. Inability or unwillingness of patient or patients personal representative to give written informed consent
- 11. Likely to be transferred from the centre within eight days of admission

#### Date of first enrolment

01/10/2011

#### Date of final enrolment

30/04/2014

## Locations

#### Countries of recruitment

United Kingdom

England

## Study participating centre

Greater Manchester Neuroscience Centre and University of Manchester

Salford

# Sponsor information

## Organisation

Salford Royal NHS Foundation Trust (UK)

#### **ROR**

https://ror.org/019j78370

# Funder(s)

## Funder type

Research council

#### **Funder Name**

Medical Research Council (United Kingdom) (Grant ref: G1001252)

## Alternative Name(s)

Medical Research Council (United Kingdom), UK Medical Research Council, MRC

## **Funding Body Type**

Government organisation

## **Funding Body Subtype**

National government

#### Location

**United Kingdom** 

# **Results and Publications**

Individual participant data (IPD) sharing plan

## IPD sharing plan summary

Not provided at time of registration

## **Study outputs**

Output type

Results article		01/02/2018		Yes	No
HRA research summary			28/06/2023	No	No
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes
Study website	Study website	11/11/2025	11/11/2025	No	Yes