Safety and efficacy of nadroparin in children: an observational study.

Published: 25-03-2025
Last updated: 19-04-2025

Therapeutic nadroparin administration:Primary objective: To develop evidence-based dosing regimens of nadroparin for children in different age groups by means of the objectification of the PK/PD of nadroparin.Secondary objective: 1) Investigate the...

Ethical review	Approved WMO
Status	Pending
Health condition type	Coagulopathies and bleeding diatheses (excl thrombocytopenic)
Study type	Observational invasive

Summary

ID

NL-OMON57402

Source
ToetsingOnline

Brief title
SAFE KIDS

Condition

- Coagulopathies and bleeding diatheses (excl thrombocytopenic)

Synonym
blood clot, Venous thromboembolism

Research involving
Human

Sponsors and support

Primary sponsor: Amsterdam UMC
Source(s) of monetary or material Support: Trombosestichting

Intervention

Keyword: Children, Efficacy, Nadroparin, Safety

Outcome measures

Primary outcome

Therapeutic nadroparin administration:

Primary endpoint:

To establish evidence-based therapeutic dosing regimens of nadroparin for children in different age groups (2 months - 3 years, 4 - 11 years and >= 12 years) by means of objectification of the PK/PD of nadroparin during standard care.

Prophylactic nadroparin administration:

Primary endpoint:

To establish evidence-based therapeutic dosing regimens of nadroparin for children in different age groups (2 months - 3 years, 4 - 11 years and >= 12 years) by means of objectification of the PK/PD of nadroparin during standard care.

Secondary outcome

Therapeutic nadroparin administration:

Secondary endpoint:

1. The incidence of complete thrombus resolution in relation to anti Xa levels

within 3 months after the start of nadroparin treatment

2. The incidence of major, clinically relevant and minor bleeding and its

relation to anti Xa levels during treatment with nadroparin until 24 hours

after termination of nadroparin

Prophylactic nadroparin administration:

Secondary endpoint:

1. The incidence of new or recurrent thrombosis in relation to anti Xa levels

during treatment with nadroparin

2. The incidence of major, clinically relevant and minor bleeding and its

relation to anti Xa levels during treatment with nadroparin until 24 hours

after termination of nadroparin

Study description

Background summary

The incidence of venous thrombosis is rising rapidly in children.[1,2] This rise is the result of improved pediatric care over the past decades, resulting in an increase in the survival of critically ill children and and increased use of central venous catheters in children. When a venous thrombus occurs there is an indication for therapeutic anticoagulant treatment (anti Xa levels 0.5-1.0 IU/mL). Inhibition of the coagulation system gives the opportunity to resolve the clot. If children are at high risk for venous thrombosis preventive measures can be taken by prophylactic anticoagulant treatment (anti-Xa levels 0.1-0.4 IU/mL). This inhibits the coagulation system in a lesser way compared to therapeutic anticoagulant treatment and prevents formation of a thrombus. In the Netherlands each year 400 children receive off-label therapeutic and prophylactic nadroparin treatment, without any information on the

pharmacokinetics/-dynamics (PK/PD) and therefore optimal and safe dosage regimen. As a result, these children are prone to suboptimal treatment with a risk for thrombosis, a lack of thrombus resolution or major bleeding.
Therefore, we designed an observational study during standard care to objectify the PK/PD in children.

Study objective

Therapeutic nadroparin administration:
Primary objective:
To develop evidence-based dosing regimens of nadroparin for children in different age groups by means of the objectification of the PK/PD of nadroparin.
Secondary objective:
1) Investigate the relation between anti Xa levels and thrombus resolution within 3 months after the start of nadroparin treatment
Investigate the relation between anti Xa levels and bleeding during treatment with nadroparin until 24 hours after termination of nadroparin
Prophylactic nadroparin administration:
Primary objective:
To develop evidence-based dosing regimens of nadroparin for children in different age groups by means of the objectification of the PK/PD of nadroparin.
Secondary objective:
1) Investigate the relation between anti Xa levels and new or recurrent thrombosis during treatment with nadroparin
2) Investigate the relation between anti Xa levels and bleeding during treatment with nadroparin until 24 hours after termination of nadroparin

Study design

A national observational prospective study

Study burden and risks

As mentioned above, each year 400 children receive off label nadroparin treatment without any information on PK/PD and therefore optimal and safe therapeutic or prophylactic dosage regimen. Despite this off label treatment, dosage recommendations have been provided. As a result, these children are prone to suboptimal treatment with a risk of a new thrombosis, a lack of thrombus resolution, or major bleeding. This bleeding has an impact on the morbidity and survival of these children. Therefore, we will perform an observational study during standard care to objectify the PK/PD in children.
With the development of evidence-based therapeutic dosing regimens for children in different age groups (2 months - 3 years, 4 - 11 years and >= 12 years), and evidence-based prophylactic dosing regimens for children for nadroparin we can ensure these vulnerable children an effective treatment without toxicity, and therefore less complications. To avoid the burden of venepunctures we aim to

include mainly children with central venous or arterial access, or an intravenous cannula and combine blood samples with standard blood samples.

Contacts

Public
Amsterdam UMC

Meibergdreef 9
Amsterdam 1105AZ
NL
Scientific
Amsterdam UMC

Meibergdreef 9
Amsterdam 1105AZ
NL

Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adolescents (12-15 years)
Adolescents (16-17 years)
Children (2-11 years)
Babies and toddlers (28 days-23 months)

Inclusion criteria

All children 1 months to 18 years, admitted at a Children*s hospital, treated with therapeutic or prophylactic nadroparin treatment as part of standard clinical care. To avoid extra venepunctures, preferably children with a central venous catheter, arterial access or intravenous cannula will be included

Exclusion criteria

• No informed consent
• Major congenital malformations
• Metabolic disorders
• Previous cerebral bleeding
• Children with any condition that, as judged by the investigator, would place the child at increased risk of harm if he/she participated in the study.

Study design

Design

Study type: Observational invasive

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

Recruitment

NL

Recruitment status:	Pending
Start date (anticipated):	01-03-2025
Enrollment:	120
Type:	Anticipated

Ethics review

Approved WMO

Date:	25-03-2025
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	NL87935.018.24