Development and validation of a scale to predict the risk of failure on the first attempt of inserting an intravenous peripheral catheter

No registrations found.

Ethical review	Positive opinion
Status	Recruiting
Health condition type	-
Study type	Observational non invasive

Summary

ID

NL-OMON27540

Source
NTR

Brief title
A-DIVA

Health condition

Intravenous peripheral catheter insertion (inbrengen van een perifere intraveneuze canule)
Prediction of difficulty of inserting a peripheral intravenous catheter (voorspellen van de moeilijkheid tijdens het inbrengen van een perifere intraveneuze canule)

Sponsors and support

Primary sponsor: Catharina Hospital Eindhoven
Michelangelolaan 2
5623 EJ Eindhoven
Source(s) of monetary or material Support: -

Intervention

Outcome measures

Primary outcome

The primary outcome variable was defined as failed peripheral IV catheterization on the first attempt. An attempt was defined as when the needle first touches the skin until the needle was removed from the skin. A new attempt was defined as any change in vessel localization, followed by a new skin puncture. For development of the A-DIVA score, following patients' characteristics were collected: sex, age, weight, length, body mass index, skin shade, dominant site, tympanic temperature, whether or not the patient received premedication and if it was difficult to achieve and IV access in the past. These data were collected prior to the procedure, by asking the patient or from the preoperative anesthesia screening form. Procedure-related factors were registered prior to or after insertion of an IV catheter: skin shade, size of the cannula, side of the cannulation, place of cannulation on the extremity, size of the stewed vein in millimeters, pain score after every puncture on an eleven-points NRS scale (score 0 is no pain en score 10 is the worst imaginable pain), number of attempts needed for successful IV cannulation, whether or not the vein was palpable and/or visual before puncture (answered with yes or no) and the years of experience of the NA. After the procedure, patients historical and physical status were collected by asking the patient or from the preoperative anesthesia screening forms: sex, length, weight, BMI and special attention was paid to (chronic) diseases, IV drug abuse, vessel diseases, hematological status and the use of medications.

Secondary outcome

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Study description

Background summary

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Study objective

The primary objective of this study is to develop a difficult venous access score for adults (A-DIVA score) that predicts the risk of failure on the first attempt of inserting an IV peripheral catheter, based on easily available clinical data. We hypothesize that the A-DIVA score is a valuable clinical prediction rule that is simple and easy to use in daily practice.

Study design

Measurement of time needed for the procedure started when the NA started identifying the

target vein visually and/or by palpation. End time of the procedure was registered after securing the IV cannula in a successful attempt.

Intervention

IV access was routinely obtained in the preoperative holding area by nurse anesthetists (NA), who are experienced with inserting peripheral IV catheters and familiar with the study protocol. After consenting to the procedure, patients' demographical, physical and historical information were recorded on for this study designed forms. A tourniquet was placed on an upper extremity.
Measurement of time needed for the procedure started when the NA started identifying the target vein visually and/or by palpation. Before cannulation, the skin was cleaned with chloorhexidine 70%. The NA performing the procedure defined the IV access successful, if blood returns in the catheter and/or when a saline flush could be injected without compromising the vein and signs of subcutaneous injection were absent. End time of the procedure was registered after securing the IV cannula in a successful attempt.

Contacts

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Eligibility criteria

Inclusion criteria

Patients 18 years or older were eligible when scheduled for an elective surgical procedure and included in the study in our preoperative holding area of the operation theatre.

Exclusion criteria

Patients were excluded when they were not adequate to answer questions or when an IV

access was requested from the ward.

Study design

Design

Study type:	Observational non invasive
Intervention model:	Parallel
Allocation:	Non controlled trial
Masking:	Open (masking not used)
Control:	N/A , unknown

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	01-01-2014
Enrollment:	2500
Type:	Anticipated

Ethics review

Positive opinion

Date:	13-05-2014
Application type:	First submission

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
NTR-new	NL4398
NTR-old	NTR4595
Other	METC Catharina Ziekenhuis Eindhoven : niet-WMO 2013-59

Study results

Summary results

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