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

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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...

Ethische beoordeling	Positief advies
Status	Werving gestart
Type aandoening	-
Onderzoekstype	Observationeel onderzoek, zonder invasieve metingen

Samenvatting

ID

NL-OMON27540

Bron
NTR

Verkorte titel
A-DIVA

Aandoening

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)

Ondersteuning

Primaire sponsor: Catharina Hospital Eindhoven
Michelangelolaan 2
5623 EJ Eindhoven
Overige ondersteuning: -

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

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.

Toelichting onderzoek

Achtergrond van het onderzoek

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Doel van het onderzoek

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.

Onderzoeksopzet

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.

Onderzoeksproduct en/of interventie

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.

Contactpersonen

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

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.

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

Patients were excluded when they were not adequate to answer questions or when an IV access was requested from the ward.

Onderzoeksopzet

Opzet

Type:	Observationeel onderzoek, zonder invasieve metingen
Onderzoeksmodel:	Parallel
Toewijzing:	N.v.t. / één studie arm
Blindering:	Open / niet geblindeerd
Controle:	N.v.t. / onbekend

Deelname

Nederland

Status:	Werving gestart
(Verwachte) startdatum:	01-01-2014
Aantal proefpersonen:	2500
Type:	Verwachte startdatum

Ethische beoordeling

Positief advies

Datum:	13-05-2014
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	NL4398
NTR-old	NTR4595
Ander register	METC Catharina Ziekenhuis Eindhoven : niet-WMO 2013-59

Resultaten

Samenvatting resultaten

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