A risk prediction model for ICU-acquired weakness

No registrations found.

Ethical review	Not applicable
Status	Recruitment stopped
Health condition type	-
Study type	Observational non invasive

Summary

ID

NL-OMON27594

Source
NTR

Brief title
WARP

Health condition

Intensive Care Unit (ICU)-acquired weakness

Sponsors and support

Primary sponsor: Academic Medical Center (AMC), Department of Intensive Care
Source(s) of monetary or material Support: Academic Medical Center (AMC), Department of Intensive Care

Intervention

Outcome measures

Primary outcome

Predictive performance (discrimination, calibration and classification) of a risk prediction model for ICU-AW.

Secondary outcome

Predictive performance after updating of the prediction model.

Study description

Background summary

Intensive Care Unit–acquired weakness (ICU–AW) is a frequent and debilitating complication of critical illness. It is important to identify ICU-AW early after onset of critical illness to provide accurate prognostic information to patients and their families and to enable timely initiation of supportive interventions, like intensive physiotherapy and tracheostomy. Using the current diagnostic reference standard, assessment of muscle strength using the Medical Research Council (MRC) score, an early diagnosis of ICU–AW is frequently precluded due to impaired consciousness or attentiveness.
A prediction model using easily available data might be able to predict the risk of ICU-AW and might enable early interventions. In a previous study, we found that it was possible to predict the risk of ICU-AW using simple and widely available data. However, that risk prediction model was based on single center data which limits the generalizability. Therefore we aim to validate and update the risk prediction model for ICU-AW using prospective data from multiple centers.

Study objective

A risk prediction model, using patient characteristics, early available clinical parameters, laboratory results and use of medication as parameters could reliably predict the risk of ICU-AW two days after ICU admission.

Study design

At 48 hours after ICU admission, after screening of the in-and exclusion criteria, the patient will be included in the study. Thereafter the candidate predictors will be collected from the patient file. As soon as the patient is awake and attentive the attending physiotherapist will assess the muscle strength of the patient.

Intervention

At 48 hours after ICU admission, patient characteristics, early available clinical parameters, laboratory results and use of medication parameters will be collected from the patient file. The candidate predictors are: age, gender, pre-existent polyneuropathy, polyneuropathy risk factor, systemic corticosteroid use prior to ICU admission, unplanned admission, suspected sepsis, presence of shock, RASS score, average urine production, highest glucose, lowest glucose, lowest pO2, FiO2 at lowest pO2, lowest pH, highest lactate, lowest platelets, lowest ionized calcium, highest ionized calcium, lowest phosphate, red blood cell transfusion, treatment with any corticosteroid, repeated treatment with any neuromuscular blocker and treatment with any aminoglycoside.

Muscle strength will be investigated by the attending physiotherapist, using the Medical Research Council (MRC) sumscore to assess the presence of ICU-AW.

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Eligibility criteria

Inclusion criteria

-Adult patients newly admitted to the ICU

-Mechanically ventilated at 48h after admission

Exclusion criteria

- Cardiac arrest, any central nervous system (CNS) disorder (stroke, traumatic brain or spinal injury, CNS infection, CNS tumor) or neuromuscular disease as reason for admission

- Pre-existing spinal injury

- Poor pre-hospital functional status (modified Rankin score ≥4)

- Poor prognosis; death likely within 48 hours after inclusion

Study design

Design

Study type:	Observational non invasive
Intervention model:	Other
Masking:	Single blinded (masking used)
Control:	N/A , unknown

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	01-01-2014
Enrollment:	500
Type:	Actual

Ethics review

Not applicable

Application type:	Not applicable

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	NL4180
NTR-old	NTR4331
Other	METC reference number : W13_193#13.17.0239
ISRCTN	ISRCTN wordt niet meer aangevraagd.

Study results

Summary results
N/A