Effect of stroke volume variation on parameters of peripheral perfusion in patients admitted to the Intensive Care.

Published: 05-05-2009
Last updated: 05-05-2024

The aim of the study is to evaluate the effect of stroke volume variation on different parameters of peripheral perfusion. Additionally the relationship between these parameters will be studied.

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Other condition
Study type	Interventional

Summary

ID

NL-OMON33164

Source
ToetsingOnline

Brief title
Effect of stroke volume on peripheral perfusion

Condition

- Other condition

Synonym
non-septic shock, septic shock

Health condition

septisch en niet-septische shock

Research involving
Human

Sponsors and support

Primary sponsor: Erasmus MC, Universitair Medisch Centrum Rotterdam
Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: peripheral perfusion, shock, stroke volume

Outcome measures

Primary outcome

The primary study parameter is the peripheral perfusion assessed by 1) laser doppler flowmetry, 2) sidestream dark field imaging, 3) near infrared spectroscopy, 4) photopletysmography.

Secondary outcome

Not applicable

Study description

Background summary

Intravenous administration of fluids is one of the cornerstones of treatment of hemodynamically instable patients admitted to the intensive care. The aim of fluid administration is improving tissue perfusion. The effect however is mainly assessed by the increase of cardiac output and stroke volume. Currently there is no clinical parameter which objectively evaluates the effect of fluid administration on tissue perfusion. New techniques are available which are able to assess tissue perfusion non-invasively. It is possible that one or more of these parameters are capable to guide the fluid regime on the individual needs of the patient based on the tissue perfusion.

Study objective

The aim of the study is to evaluate the effect of stroke volume variation on different parameters of peripheral perfusion. Additionally the relationship between these parameters will be studied.

Study design

The study will be carried out on the Intensive Care of the Erasmus Medical Center and will be carried out as a single center intervention trial.

Intervention

The intervention is a passive leg raising maneuvre. The patient is placed in a semi-recumbent position of 30 degrees. The passive leg raising is performed by elevating the patient's legs by 30 degrees and by simultaneously transferring the trunk from the semi-recumbent position to a horizontal position. Transferring the patient to the passive leg raising position transfers venous blood from the legs to the intrathoracic compartment and increases cardiac preload.

Study burden and risks

The passive leg raising and measurements of peripheral perfusion will not involve risks for the subject. The passive leg raising is temporarily and the effects will not affect the subject negatively. The methods to measure peripheral perfusion are based on light with harmless wavelengths. The measurement probes will only slightly make contact with the skin and the sublingual area of the subject. The duration of the study for the individual patient is 15 minutes.

Contacts

Public
Erasmus MC, Universitair Medisch Centrum Rotterdam

's Gravendijkwal 230
3015 CE Rotterdam
Nederland
Scientific
Erasmus MC, Universitair Medisch Centrum Rotterdam

's Gravendijkwal 230
3015 CE Rotterdam
Nederland

Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

Patients admitted to the intensive care with circulatory failure due to septic or non-septic shock.
Age > 18 years.
Use of invasive hemodynamic monitoring to assess cardiac output and strokevolume.

Exclusion criteria

Admittance with cerebral disorders.
Elevated intra-abdominal pressure.
Ischemia of the lower extremities
Decreased left ventricular function

Study design

Design

Study type: Interventional

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

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	20-05-2009

Enrollment:	30
Type:	Actual

Ethics review

Approved WMO Date:	05-05-2009
Application type:	First submission
Review commission:	METC Erasmus MC, Universitair Medisch Centrum Rotterdam (Rotterdam)

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	NL27359.078.09