The influence of rehydration and the antidiuretic hormone on blood coagulation in the dehydrated patient

Published: 10-07-2013
Last updated: 22-04-2024

Primary objective is: - To evaluate the effects of dehydration and subsequent rehydration on coagulation and fibrinolytic parametersSecondary objectives are:- To evaluate whether the response of coagulation and fibrinolytic parameters to fluid…

Ethical review	Approved WMO
Status	Will not start
Health condition type	Other condition
Study type	Observational non invasive

Summary

ID

NL-OMON38865

Source
ToetsingOnline

Brief title
ADH study- part 1

Condition

- Other condition
- Endocrine and glandular disorders NEC

Synonym
dehydration, fluid deficiency

Health condition

vochthuishouding

Research involving
Human

Sponsors and support

Primary sponsor: Slotervaartziekenhuis
Source(s) of monetary or material Support: via de SKWOSZ (stichting klinisch wetenschappelijk onderzoek slotervaartziekenhuis)

Intervention

Keyword: antidiuretic hormone, coagulation, hemostasis, rehydration

Outcome measures

Primary outcome

Coagulation and fibrinolysis activation markers: F1+2 (fragment 1+2), ETP

(endogenous thrombin potential), D-dimer, Plasminogen Activator Inhibitor-1

(PAI-1) activity.

Endothelial cell activation and platelet activation markers: von Willebrand

factor activity (vWf:C), clotting factor VIII activity (fVIII:C).

Blood coagulation time: PT.

Secondary outcome

urine osmolarity, plasma osmorality, antidiuretic hormone, hematocrit.

Study description

Background summary

The therapeutic use of ADH is still under investigation. Desmopressin, a synthetic analogue of the natural pituitary hormone ADH (DDAVP), has been widely used in several European countries as an alternative to the use of blood products in the treatment of von Willebrand disease and mild hemophilia A.3 It was discovered that this drug, when administered either intranasally or intravenously, results in a rapid two- to threefold increase in all components of the factor VIII system. Due to this fast action, it was always believed that DDAVP does not stimulate the production of coagulation factors, but rather a release of pre-made factors from storage granules in the endothelial cells.4;5

Although the effects of administered DDAVP in von Willebrand disease, mild hemophilia A and even healthy subjects on haemostasis have been the subject of extensive investigation, the physiologic effects of fluid deprivation and subsequent, physiologic, rise of ADH on coagulation and fibrinolysis has not yet been investigated.

Study objective

Primary objective is:
- To evaluate the effects of dehydration and subsequent rehydration on coagulation and fibrinolytic parameters

Secondary objectives are:
- To evaluate whether the response of coagulation and fibrinolytic parameters to fluid restoration is mediated by ADH.
- To evaluate whether the response of coagulation and fibrinolytic parameters to dehydration is influenced by a coexisting infection.

Study design

Observational clinical study/pilot study.

Study burden and risks

As these patients are already admitted to the hospital with, amongst others, serious signs of dehydration there are no additional risks when participating in this study. The number of times that blood is taken remains the same, only the total amount is more. Participating in this study will not change the treatment or the duration of hospital stay for these patients.

Contacts

Public
Slotervaartziekenhuis

Louwesweg 6
Amsterdam 1066EC
NL
Scientific
Slotervaartziekenhuis

Louwesweg 6
Amsterdam 1066EC
NL

Trial sites

Listed location countries

Netherlands

Eligibility criteria

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

Inclusion criteria

a. Adults * 18 years old.
b. Able to provide informed consent.
c. Confirmed infection of any cause (for 6 patients)

Exclusion criteria

a. Strong suspection of an infection of any cause (for 6 patients) see definition of infection
b. Primary polydipsia and diabetes insipidus.
c. Untreated thyroid and adrenal hormone abnormalities.
d. Pregnancy or puerperium.
e. Common etiologies of the syndrome of inappropriate antidiuretic hormone (SIADH); Active malignancy, inflammatory diseases (multiple sclerosis, meningitis, systemic lupus erythematosus), acquired immuno- deficiency syndrome (AIDS), infections (tuberculosis, pneumonia, empyema) (only for those 6 patients without signs of infection), cystic fibrosis, drugs (Selective serotonine reuptake inhibitors, tricyclic antidepressants, carbamazepine, clofibrate, narcotics, antipsychotic drugs, cytotoxic drugs)
f. Potentiation of AVP antidiuretic effects: desmopressin, vasopressin, oxytocin, prostaglandin synthesis inhibitors

Study design

Design

Study type: Observational non invasive

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

Recruitment

NL

Recruitment status:	Will not start
Enrollment:	12
Type:	Anticipated

Ethics review

Approved WMO

Date:	10-07-2013
Application type:	First submission
Review commission:	METC Slotervaartziekenhuis en Reade (Amsterdam)

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	NL44955.048.13