The influence of controlled dehydration and the antidiuretic hormone on blood coagulation

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Primary objective is: - To evaluate the effects of (controlled) dehydration on coagulation and fibrinolytic parameters.Secondary objectives are:- To evaluate whether the response of coagulation and fibrinolytic parameters to dehydration is mediated...

Ethical review	Approved WMO
Status	Pending
Health condition type	Other condition
Study type	Observational non invasive

Summary

ID

NL-OMON35836

Source
ToetsingOnline

Brief title
ADH study- part 2

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: SKWOSZ stichting klinisch wetenschappelijk onderzoek slotervaartziekenhuis

Intervention

Keyword: ADH, coagulation, dehydration, fibrinolysis

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 osmolality, plasma osmolality, 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. 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.

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 (controlled) dehydration on coagulation and fibrinolytic parameters.

Secondary objectives are:
- To evaluate whether the response of coagulation and fibrinolytic parameters to dehydration is mediated by ADH.

Study design

Clinical controlled trial/pilot study

Study burden and risks

healthy volunteers: No fluidintake for a long period of time can lead to symptoms of dehydration such as dry mouth and headache. These symptoms are harmless, especially given the short duration of the test, and will disappear after drinking normally when the test is stopped. If the weight decreases by more than 5%, the test will be stopped immediately. The bloodpressure will be closely monitored, both in standing and supine position. Throughout the trial, a research physician and a nurse are present during the water deprivation test.

DI patients: patients with diabetes insipidus, when not drinking sufficiently, have a greater chance of getting symptoms of dehydration such as dry mouth and headache. We ask these patients to continuesly drink enough fluids, as much as the body indicates. Nevertheless, when the DI patient experiences severe symptoms of dehydration such as weight loss of more than 2.5-3.0 kg or when they no longer producing urine, they will be instructed to immediately use the synthetic ADH and contact the study doctor or the emergency room at the Slotervaart hospital.

Contacts

Public
Slotervaartziekenhuis

Louwesweg 6
1066 EC Amsterdam
NL
Scientific
Slotervaartziekenhuis

Louwesweg 6
1066 EC Amsterdam
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. Diagnosis of central diabetes insipidus (DI). (only for patients)

Exclusion criteria

a. Strong suspection of an infection of any cause
b. Primary polydipsia and diabetes insipidus (for the healthy volunteers).
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:	Pending
Start date (anticipated):	01-07-2011
Enrollment:	12
Type:	Anticipated

Ethics review

Approved WMO

Date:	09-08-2011
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	NL36972.048.11