The influence of chronic exposure to low glucose and its degradationproducts dialysate on the peritoneal membrane.

No registrations found.

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

Summary

ID

NL-OMON23879

Source
NTR

Health condition

peritoneal dialysis for end-stage renal failure. Peritonitis. Glucose exposure

Sponsors and support

Primary sponsor: Academic Medical Center
Source(s) of monetary or material Support: Baxter Healthcare

Intervention

Outcome measures

Primary outcome

incidence and severity of peritonitis

Secondary outcome

effects on the peritoneal membrane

Study description

Background summary

Death and renal transplantation are the main reasons for discontinuation of peritoneal dialysis, but peritonitis and membrane problems, such as ultrafiltration failure and encapsulating peritoneal sclerosis are also important reasons for discontinuation. Membrane failure can be caused by peritonitis and by the continuous exposure to dialysis solutions. Only few quantitative data is available on possible relationships between the severity of peritonitis and/or causative micro-organisms and the induction of membrane failure, although encapsulating peritoneal sclerosis is often preceded by a period of slowly resolving or recurrent peritonitis . The clinical observation that membrane failure can occur in some long-term patients who never had peritonitis, points to the importance of exposure to dialysis solutions. These are regarded bioincompatible, because of the extremely high glucose concentrations, presence of glucose degradation products (GDP), lactate and acidity.
Very little studies on glucose toxicity have been done in PD patients. We found that the effluent concentration of the advanced glycosylation end product pentosidine inc eased with the duration of PD Davies et al. reported that CAPD patients with an increase in the dialysate/plasma concentration of creatinine during follow-up of 5 years had a larger peritoneal exposure to glucose (and GDPs), than the ones without this complication.
The aim of the study is to investigate whether a reduced peritoneal exposure to glucose and thereby to glucose degradation products influences the incidence and severity of peritonitis, estimated by effluent leucocyte counts, and whether these effects are associated with peritoneal membrane characteristics after recovery from the acute infection in patients treated with chronic peritoneal dialysis.
An analysis will be done in two AMC cohorts. The first cohort comprises every peritonitis episode in each patient since 1979 till today. The data-base contains the causative micro-organism from every episode, the severity of inflammatory reaction, antibiotic treatment and the time-course. The 2nd cohort is on the yearly performed standard peritoneal permeability analysis (SPA), performed since 1990 in all patients willing to participate. The data-base contains the results on peritoneal transport of low molecular weight solutes, fluid kinetics and transport of macromolecules. Two cohorts will be compared: one from the period 1990-1997 (period 1) and the other one from the period 2005-2011 (period 2) with regard to the incidence and severity of peritonitis and its effects on the peritoneal membrane characteristics, including effluent biomarkers. In period 1 all patients were only treated with conventional dialysis solutions, high in glucose degradation products . In period 2 all patients received a more biocompatible solution.

Study objective

A reduced peritoneal exposure to glucose and thereby to glucose degradation products will influence the incidence and severity of peritonitis and may modify peritoneal membrane characteristics.

Study design

2013: submission of abstracts on the first results to ADC congress.
2014: submission of a paper.
2015: submission of the final report, including biomarkers

Intervention

no intervention

Contacts

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Eligibility criteria

Inclusion criteria

Retrospective analysis in a database consisting of data collected in the past, that were obtained in normal clinisal patient care.

Exclusion criteria

Incomplete data

Study design

Design

Study type:	Observational non invasive
Intervention model:	Other
Masking:	Open (masking not used)
Control:	N/A , unknown

Recruitment

NL

Recruitment status:	Other
Start date (anticipated):	01-06-2013
Enrollment:	100
Type:	Unknown

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	NL3823
NTR-old	NTR3989
Other	Baxter Healthcare : 12CEPPDEU1002

Register	ID
ISRCTN	ISRCTN wordt niet meer aangevraagd.

Study results

Summary results

The PI has 500 publications in scientific journals and an H index of 52