

Influence of different lipid emulsions on glucose uptake and mitochondrial function in healthy adults

Gepubliceerd: 21-10-2008 Laatste bijgewerkt: 13-12-2022

We hypothesized that FFA loading could impair mitochondrial function and that the potency of FFA to disturb mitochondrial function and glucose uptake would depend on the degree of desaturation of the fatty acids infused.

Ethische beoordeling	Positief advies
Status	Werving gestopt
Type aandoening	-
Onderzoekstype	Interventie onderzoek

Samenvatting

ID

NL-OMON21580

Bron

Nationaal Trial Register

Verkorte titel

IV Lipid study

Aandoening

Diabetes, Insulin resistance and mitochondrial dysfunction

Ondersteuning

Primaire sponsor: Department of Endocrinology and Metabolism, Academic Medical Center Amsterdam, the Netherlands.

Overige ondersteuning: fund = initiator = sponsor

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

- Peripheral glucose uptake (Rd)

- Resting, adp-stimulated and uncoupled mitochondrial respiration rates

Toelichting onderzoek

Achtergrond van het onderzoek

Recently, disturbed mitochondrial function was shown to be associated with free fatty acid (FFA)- and obesity induced insulin resistance. Different types of FFA can have differential effects on glucose metabolism. Therefore we evaluate the effects of elevated plasma monounsaturated vs. polyunsaturated fatty acids on glucose metabolism and mitochondrial function.

Doel van het onderzoek

We hypothesized that FFA loading could impair mitochondrial function and that the potency of FFA to disturb mitochondrial function and glucose uptake would depend on the degree of desaturation of the fatty acids infused.

Onderzoeksopzet

Participants were studied in balanced assignment on three different occasions (each two weeks apart) during a 6 hours infusion of Intralipid®, Clinoleic®, or saline 0.9% intravenously

Onderzoeksproduct en/of interventie

Infusion with with to different lipid emulsion respectively Intralipid® and Clinoleic®, versus Saline. Each patient is his own control.

Contactpersonen

Publiek

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Wetenschappelijk

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

1. Healthy male volunteer
2. Caucasian
3. Age between 18-35 years
4. Normal BMI (20-24.9 kg/m²)
5. VO₂ max (90-110% predicted value according to Jones formula)
6. Stable weight during 3 months before participation and during participation
7. Normal physical activity with at least 2 times per week sport activities
8. Non-smoking

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

1. Fasting blood glucose > 5,6 mmol/L or abnormal OGTT (2-hour value after oral ingestion of 75 g, glucose >7.8 mmol/l) Fasting insulin concentration >50 pmol/l

2. BMI > 25 and BMI < 20
3. DM type II in first degree relatives
4. All chronic diseases
5. Drug use
6. Dyslipidaemia
7. Abnormal liver or renal function

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Cross-over
Toewijzing:	Niet-gerandomiseerd
Blinding:	Enkelblind
Controle:	Actieve controle groep

Deelname

Nederland	
Status:	Werving gestopt
(Verwachte) startdatum:	05-12-2005
Aantal proefpersonen:	10
Type:	Werkelijke startdatum

Ethische beoordeling

Positief advies	
Datum:	21-10-2008
Soort:	Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

Geen registraties gevonden.

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL1439
NTR-old	NTR1500
Ander register	: MEC 05/295
ISRCTN	ISRCTN wordt niet meer aangevraagd

Resultaten

Samenvatting resultaten

N/A