X chromosome inactivation in human embryos obtained after either IVF or IVF/ICSI

Gepubliceerd: 25-04-2008 Laatst bijgewerkt: 18-08-2022

The ICSI procedure interferes with the process of X chromosome inactivation in human embryos

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

Samenvatting

ID

NL-OMON25839

Bron
Nationaal Trial Register

Verkorte titel
N/A

Aandoening

IVF, ICSI, X chromosome inactivation, X chromosoom inactivatie

Ondersteuning

Primaire sponsor: Academic hospital Maastricht, the Netherlands
Overige ondersteuning: self-financing research

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

X chromosome inactivation pattern in human surplus embryos

Toelichting onderzoek

Achtergrond van het onderzoek

There is concern that in-vitro culture of embryos and/or the ICSI technique might have an adverse effect on embryonic development via epigenetic alterations. In a previous study from our group using blastocysts resulting from surplus embryos obtained after either standard IVF or IVF/ICSI we found a clear sex related growth difference in human blastocysts originating from IVF/ICSI, but not in blastocysts originating from standard IVF. It is as yet unknown which mechanism is responsible for our findings. In in vitro produced female bovine blastocysts it has been shown that both X chromosomes were active while dosage compensation by X-chromosome inactivation did occur in in vivo generated embryos. Therefore, we hypothesize 1) that the process of X-inactivation has a time pattern in human preimplantation embryos comparable with that of the already investigated animal species, and 2) that the ICSI procedure might interfere with the process of X-inactivation in human embryos.

Doel van het onderzoek

The ICSI procedure interferes with the process of X chromosome inactivation in human embryos

Onderzoeksopzet

Human surplus embryos at several stages of development (ranging between 8-cell and blastocyst stage) will be collected and analysed for the X chromosome inactivation status.

Onderzoeksproduct en/of interventie

The intervention on the embryos is intracytoplasmic sperm injection (ICSI), which is compared with conventional IVF. ICSI is a regular intervention used in case of male subfertility, where one spermatozoon is injected into an oocyte, while in IVF the spermatozoa and the oocyte are brought together within a culture dish.

Contactpersonen

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Wetenschappelijk

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

1. Human surplus embryos, not suitable for transfer or cryopreservation, originating from an IVF or ICSI treatment

2. Informed consent from patients

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

1. Abnormal fertilized embryos

2. Presence of multinucleated blastomeres

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Anders

Controle: N.v.t. / onbekend

Deelname

Nederland

Status:	Werving gestart
(Verwachte) startdatum:	01-05-2008
Aantal proefpersonen:	420
Type:	Verwachte startdatum

Ethische beoordeling

Positief advies

Datum:	25-04-2008
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	NL1253
NTR-old	NTR1299
Ander register	CCMO : P05.1655C
ISRCTN	ISRCTN wordt niet meer aangevraagd.

Resultaten

Samenvatting resultaten
N/A