Ultrasound imaging of uterine contractions during pregnancy and labor

Published: 24-08-2011 Last updated: 28-04-2024

The objective of this research, which is a small part of the BioMod UE_PTL project, is to determine the relation between the electrical activity and the mechanical contraction of the uterus. This can greatly contribute to comprehension of the EHG.

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Pregnancy, labour, delivery and postpartum conditions
Study type	Observational non invasive

Summary

ID

NL-OMON35727

Source ToetsingOnline

Brief title Ultrasound imaging of uterine contractions

Condition

• Pregnancy, labour, delivery and postpartum conditions

Synonym

preterm birth, threatened preterm labor

Research involving Human

Sponsors and support

Primary sponsor: Maxima Medisch Centrum Source(s) of monetary or material Support: het Europese EraSysBio project.

Intervention

Keyword: contractions, Electrohysterogram, Ultrasound, uterus

Outcome measures

Primary outcome

The first main endpoint is a protocol for imaging the myometrium during contraction using ultrasound. The results should be of a sufficient quality to permit image analysis by segmentation or cross correlation algorithms. The next step is to obtain, from this segmented myometrium, a parameter which is a good measure for the contractility of the uterus. The final endpoint is to obtain an estimate of the relation between the electrical activity and the mechanical contraction.

Secondary outcome

nvt

Study description

Background summary

Preterm labor and subsequent preterm birth are the most common pregnancy complications. One of the keys to treat preterm labor is the early detection of labor. This can be done by analyses of some parameters which are derived by the electrohysterogram (EHG). However, the EHG measures the electrical activity and gives no direct information about the resulting mechanical activity. Ultrasound imaging can be used to image the mechanical aspects of the contraction of the uterus and can thus help to interpret the EHG. Furthermore, a multiscale model will be developed by others to describe the relation between the biological phenomenon involved in uterine cell contractility and the obtained EHG signals, which is yet unknown. The ultimate goal of this total BioMod UE_PTL project is to provide the knowledge to create a clinical tool that can detect the presence of pathological uterine contractility leading to preterm labor.

Study objective

The objective of this research, which is a small part of the BioMod UE_PTL project, is to determine the relation between the electrical activity and the mechanical contraction of the uterus. This can greatly contribute to comprehension of the EHG.

Study design

Ultrasound recording on pregnant women. Simultaneous EHG recordings will be performed to determine the electrical activity.

Study burden and risks

There are no conceivable risks involved for the patients. Non-invase tests will be used, which will not affect the outcome for the patient.

Contacts

Public

Maxima Medisch Centrum

Postbus 7777 5500 MB Veldhoven NL **Scientific** Maxima Medisch Centrum

Postbus 7777 5500 MB Veldhoven NL

Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age Adults (18-64 years)

3 - Ultrasound imaging of uterine contractions during pregnancy and labor 2-05-2025

Elderly (65 years and older)

Inclusion criteria

Singleton pregnancy, >=30 weeks gestational age

Exclusion criteria

Multiple pregnancy, age < 18 year

Study design

Design

Study type: Observational non invasive		
Masking:	Open (masking not used)	
Control:	Uncontrolled	
Primary purpose:	Diagnostic	

Recruitment

ΝП

Recruitment status:	Recruitment stopped
Start date (anticipated):	29-08-2011
Enrollment:	20
Туре:	Actual

Ethics review

Approved WMO	
Date:	24-08-2011
Application type:	First submission
Review commission:	METC Maxima Medisch Centrum (Veldhoven)

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 CCMO **ID** NL37213.015.11