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# Whole body hypothermia + melatonin vs whole body hypothermia + placebo in asphyctic newborns.

**Submission date**
29/09/2014

**Recruitment status**
No longer recruiting

**Registration date**
24/10/2014

**Overall study status**
Completed

**Last Edited**
28/10/2014

**Condition category**
Nervous System Diseases

[X] Prospectively registered
[ ] Protocol
[ ] Statistical analysis plan
[ ] Results
[ ] Individual participant data
[ ] Record updated in last year

## Plain English summary of protocol

Background and study aims
Therapeutic hypothermia is a medical treatment that lowers a patients body temperature in order to help prevent tissue damage due to a lack of oxygen. The reduction in body temperature leads to a slowing of normal metabolic, brain and muscle functions. Slowing down metabolism is known to allow at least partial recovery of body cells. Therapeutic hypothermia has been shown to reduce long-term brain damage (neurological sequelae) in infants who have been asphyxiated as they are being born, but it has to be applied within 6 hours of the babys birth to work. Melatonin is a drug most commonly used as a sleeping aid. However, it also has a number of other health benefits, including protecting against brain damage. It is a powerful antioxidant, mopping up free radicals that would otherwise damage body cells and it also reduces inflammation. Here, we want to test if giving asphyxiated newborn babies melatonin and therapeutic hypothermia together will protect the brain more against damage than if using the hypothermia on its own.

Who can participate?
Newborn babies that have had to be resuscitated for longer than 10 minutes and are showing signs of having been asphyxiated.

What does the study involve?
The newborns are randomly allocated into one of two groups. Those in group 1 are given three doses of melatonin within 6 hours of being born over a three-day period. Those in group 2 are given a placebo (dummy) drug. They all undergo therapeutic hypothermia. Blood and urine samples are taken to assess the effects of the asphyxia (measuring inflammatory biochemical markers). The extent of any brain damage is also measured using a number of tests.

What are the possible benefits and risks of participating?
The possible benefits are reduced brain damage and better scores on brain development tests in newborns treated with melatonin. The adverse effects of using melatonin are rare and include headache, irritability, dizziness or drowsiness. No serious adverse events have been described. In children side effects such as nausea, apathy, weight gain, headaches and bedwetting have been

described. Treatment with melatonin can be used for long periods of time in children without disturbing development, quality of sleep, sexual development or mental health.

Where is the study run from?
San Cecilio University Hospital, Neonatal Unit (Spain).

When is the study starting and how long is it expected to run for?
November 2014 to November 2017.

Who is funding the study?
Health General Institute: Ministry of Health, Social Services and Equality (Ministerio de Sanidad y consumo) (Spain).

Who is the main contact?
Dr Antonio Jerez Calero

# Contact information

### Type(s)
Scientific

### Contact name
Dr Antonio Jerez Calero

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# Additional identifiers

### EudraCT/CTIS number
2012-000184-24

### IRAS number

### ClinicalTrials.gov number

### Secondary identifying numbers
2012-000184-24

# Study information

### Scientific Title
Whole body hypothermia + melatonin vs whole body hypothermia + placebo in asphyctic newborns. A multicentric, randomized, controlled and double blind clinical trial

### Acronym

WBH+ M or P

## Study objectives
In asphyctic and cooled newborn we expect that melatonin administration will decrease neurolesive free radicals production and will prevent neurological damage derivated of their anti-inflammatory and oxidative effects.

## Ethics approval required
Old ethics approval format

## Ethics approval(s)
Granada Ethics Committee for Biomedical Research, 27/11/2012

## Study design
Randomized, controlled, double blind, placebo vs treatment. Multicentric design

## Primary study design
Interventional

## Secondary study design
Randomised controlled trial

## Study setting(s)
Hospital

## Study type(s)
Treatment

## Participant information sheet
Not available in web format, please use the contact details below to request a patient information sheet

## Health condition(s) or problem(s) studied
Nervous System Disease

## Interventions
Beginning within first 6 hours of life, newborns under treatment will receive a intravenous perfusion of melatonin. Dosis= 5 mg per Kilogram of weight per day. Duration of the substance treatment= 3 days (equal to hypothermia treatment period) (total doses= 3).

Other newborns will receive placebo. The neonatologist, nursing team or statistics don´t know which treatment have been administered because of a doubled blind design.

Follow up include intensive monitoring at the Neonatal Intensive Care Unit during the critical period of the illness. We´ll take blood and urine samples to determine inflammatory biochemical markers. We will also assess neurological sequelae (standardized tests of psychomotor development, testing, neuroimaging and sensory disturbances and / or refractory seizures)

## Intervention Type
Drug

### Phase
Not Applicable

### Drug/device/biological/vaccine name(s)
Melatonin

### Primary outcome measure
Better scores on neurodevelopment test in cooled newborns treated with melatonin vs placebo at 6 months and 18 months of age

### Secondary outcome measures
1. Lower plasmatic concentrations of proinflamatory biomarkers derivated of oxidative stress and neuronal damage
2. Type and of brain damaged areas obtained by Magnetic Resonance Imaging
3. Poor prognosis electroencephalographic patterns at Function Cerebral Monitor
Measured at 3-6 hours, 24 hours, 72 hours and then 7-10 days after birth

### Overall study start date
01/11/2014

### Completion date
01/11/2017

## Eligibility

### Key inclusion criteria
1. Newborns, Gestational age <36 weeks and at least ONE of the following:
1.1. Apgar test poor at 5 minutes from birth
1.2. Need for resuscitation longer than 10 minutes using positive pressure ventilation (bag and mask or endotraqueal tube)
1.3. Ph <7 or BD<16 mmol/L in the worse gasometric result at first 60 minutes from birth (cord, arterial, venous or capillary blood sample)
2. Moderate and severe hypoxic-ischemic encephalopathy:
2.1. Sarnat score >6 points

### Participant type(s)
Patient

### Age group
Neonate

### Sex
Both

### Target number of participants
36

### Key exclusion criteria
1. Birth weight <1800 g
2. Gestational age < 36 weeks

3. Newborn older than 6 hours
4. Need for surgery during first 3 days of life
5. Severe congenital malformations
6. Severe multiorganic dysfunction and refractory to treatment

**Date of first enrolment**
01/11/2014

**Date of final enrolment**
01/11/2017

# Locations

**Countries of recruitment**
Spain

**Study participating centre**
**c/Albeniz, 11 bis**
Granada
Spain
18199

# Sponsor information

**Organisation**
San Cecilio University Hospital, Neonatal Unit (Spain)

**Sponsor details**
Avda. Dr Oloriz, 16
Granada
Spain
18012

**Sponsor type**
Hospital/treatment centre

**ROR**
https://ror.org/02pnm9721

# Funder(s)

**Funder type**
Government

### Funder Name
Health General Institute: Ministry of Health, Social Services and Equality (Ministerio de Sanidad y consumo) (Spain)

## Results and Publications

### Publication and dissemination plan
Not provided at time of registration

### Intention to publish date

### Individual participant data (IPD) sharing plan

### IPD sharing plan summary
Not provided at time of registration