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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

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Additional identifiers

Clinical Trials Information System (CTIS)
2012-000184-24

Protocol serial number
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

Study type(s)
Treatment

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(s)
Better scores on neurodevelopment test in cooled newborns treated with melatonin vs placebo at 6 months and 18 months of age

Key secondary outcome(s))

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

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

Healthy volunteers allowed
No

Age group
Neonate

Sex
All

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)

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

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes