

Swaddling and problems with the way a baby's hip joint forms

Submission date 04/11/2020	Recruitment status No longer recruiting	<input type="checkbox"/> Prospectively registered
		<input checked="" type="checkbox"/> Protocol
Registration date 10/11/2020	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan
		<input checked="" type="checkbox"/> Results
Last Edited 10/03/2022	Condition category Musculoskeletal Diseases	<input type="checkbox"/> Individual participant data

Plain English summary of protocol

Background and study aims

Developmental dysplasia of the hip (DDH) is a problem with the way a baby's hip joint forms. Sometimes the condition starts before the baby is born, and sometimes it happens after birth, as the child grows. It can affect one hip or both. DDH is a major health problem that can lead to lifelong disability if the diagnosis is missed in the first weeks of life. Mongolia is the first Asian country that launched a universal ultrasound hip screening for DDH in newborns. All DDH cases are followed up on monthly basis by hip ultrasound and treated with a simple splint if necessary. In the country, swaddling is an ancient practice and nowadays it still remains common child care in the first months of life. The Mongolian traditional way of swaddling technique involves tight, prolonged wrapping from the head or neck down in two to three layers of thin cotton cloth, covered by layers of thick blankets and binding with 2-3 ties. This practice requires a tight wrapping with stretched legs and the hips are held in an adducted position, which may play a role in the development of DDH. This hypothesis is going to be tested in this study.

Who can participate?

All newborns with physiologically immature hip

What does the study involve?

The term newborns with Graf Type 2a hip (physiologically immature) are randomly allocated to one of two groups. The intervention/non-swaddling group are instructed not to swaddle at all. The control/swaddling group are swaddled in the common traditional Mongolian method. Both groups are followed up by Graf's method of hip ultrasound at 4-6 week intervals until healing according to Mongolian national guideline. All infants in need of therapy (Graf type 2a-, 2c or worse) are treated with a Tübingen splint. At around 12 months of age, all children are re-checked by Graf's method of hip ultrasound.

What are the possible benefits and risks of participating?

There are no risks for the participants. All babies will be examined and controlled until healing by an experienced pediatricians' team regularly for free.

Where is the study run from?

National Center for Maternal Child Health (Mongolia)

When is the study starting and how long is it expected to run for?
March 2018 to March 2022

Who is funding the study?
Swiss-Mongolian Pediatric Project (SMOPP)

Who is the main contact?
Dr Munkhtulga Ulziibat, umunhtulga@gmail.com

Contact information

Type(s)

Public

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Additional identifiers

Protocol serial number

05/SMOPP

Study information

Scientific Title

Traditional Mongolian swaddling and developmental dysplasia of the hip: a randomized controlled trial

Study objectives

Mongolian traditional prolonged swaddling where arms and legs are extended and hips are in adduction position increases the risk for DDH.

Ethics approval required

Old ethics approval format

Ethics approval(s)

1. Approved 29/01/2019, Institutional Review Board at the National Center for Maternal and Child Health (Khuvigalchdyn Street, Bayangol District, Ulaanbaatar, 16060, Mongolia; +976-11-362886; baylag.m@gmail.com), ref: 04/2019
2. Approved 26/01/2019, Ethical Review Committee of Ministry of Health, Mongolia (Ulaanbaatar city 14210, Sukhbaatar District, Olympic Street 2, Governmental building VIII, Mongolia; +976-11-263695; moh@moh.gov.mn), ref: 133/2019

Study design

Interventional randomized controlled trial

Primary study design

Interventional

Study type(s)

Prevention

Health condition(s) or problem(s) studied

Developmental dysplasia of the hip

Interventions

The "swaddling" group are swaddled in the common traditional Mongolian technique while the "non-swaddling" group are instructed not to swaddle at all.

Traditional swaddling in Mongolia is as follows: swaddling is a tightly wrapping (2 adult fingers pass under the cloth) of a baby in several layers of cloth, covered by one warmer blanket from head and neck to toe in a straight position after birth for day and night time. Two or three ropes are used across a baby's body for binding to avoid unwrapping. Since the non-swaddling group have to be provided with alternatives to the readily available swaddling clothes and blankets, the control group are given a blanket and several cotton sheets at the time of recruitment. All enrollees are followed up on monthly basis for 12 months until healing (Graf Type 1) by hip ultrasound and treated with an extension and abduction Tubingen splint if necessary.

Randomization: On the first days after birth, all eligible newborns are screened using Graf's method of ultrasound according to Mongolian National Guideline. After the screening all newborns, a list of all newborns with Graf Type 2a hips are generated on a daily basis. All term newborns with Graf Type 2a cases (physiologically immature) of the data collector /neonatologist are eligible for the study.

Randomization sequence is created using Excel 2007 (Microsoft, Redmond, WA, USA) with a 1:1 allocation using random block sizes of 4 by an independent researcher with no clinical involvement in the trial. After the consent obtaining, details of the allocated group are given on colored cards contained in sequentially numbered and sealed envelopes. These are prepared by the principal investigator and kept in an agreed location on the post-delivery ward.

Randomization takes place before discharge when the data collector/neonatologist gives detailed consultation on usual postnatal care of newborns. Corresponding envelopes are opened after the enrolled newborns completed all baseline assessments and it is time to allocate the intervention. Whereas parents allocated to the swaddling group and the research assistants are aware of the allocated arm, the outcome assessor/radiologist are kept blinded to the allocation.

Intervention Type

Other

Primary outcome(s)

Graf's alpha angle measured by ultrasound at baseline, 4-6 weeks, 8-10 weeks, 12-14 weeks, 16-18 weeks, 50-54 weeks

Key secondary outcome(s)

There are no secondary outcome measures

Completion date

25/03/2022

Eligibility

Key inclusion criteria

1. Term newborns with confirmed Type 2a hips
2. Parents who are able to return for the scheduled follow-up ultrasound examination during the study period
3. Willing to give informed consent
4. Newborns without any symptoms and complaints

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Neonate

Sex

All

Total final enrolment

80

Key exclusion criteria

1. Newborns with obvious congenital abnormalities (with clear medical consequences)
2. Newborns with needs for intensive care treatment
3. Newborns with low (2499g or less) weight

Date of first enrolment

02/08/2019

Date of final enrolment

25/03/2021

Locations

Countries of recruitment

Mongolia

Study participating centre

National Center for Maternal and Child Health

Khuvisgalchdyn Street

Bayangol District

Ulaanbaatar

Mongolia

16060

Sponsor information

Organisation

National Center for Maternal and Child Health

ROR

<https://ror.org/05d2zbe90>

Funder(s)

Funder type

Government

Funder Name

Swiss Mongolian Pediatric Project (SMOPP)

Results and Publications

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

Will individual participant data be available (including data dictionaries)? yes

What data in particular will be shared? All of the individual participant data collected during the trial, after deidentification

What other documents will be available? Study Protocol

When will data be available (start and end dates)? End of recruitment and Immediately following publication.

With whom? Researchers who provide a methodologically sound proposal.

For what types of analyses? To achieve aims in the approved proposal

By what mechanism will data be made available? Proposals should be directed to umunhtulga@yahoo.com. To gain access, data requestors will need to sign a data access agreement. Data are available for 5 years at a third party website (www.ehemut.mn)

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		13/10/2021	10/03/2022	Yes	No
Participant information sheet			02/12/2020	No	Yes
Protocol file	version v1	29/06/2019	02/12/2020	No	No