

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Effect of prophylactic Caffeine on the need for oxygen duration and respiratory support in preterm neonates with weight 1250-2000 gr with RDS requiring nasal CPAP

Protocol summary

Study aim

In our study the effect of caffeine on the need for oxygen duration and respiratory support in preterm neonate with weight 1250-2000 gr with RDS requiring nasal CPAP will be investigated in two groups of caffeine given (group C) and control (group P).

Design

This study is a single blinded interventional randomized controlled clinical trial phase3 with 2 parallel groups (45 patients in each group). A Sequentially numbered computerized randomization with sealed opaque envelopes will be used for randomization.

Settings and conduct

The study sample consisted of infants with spontaneous breathing and clinical signs and symptoms of RDS, and requiring nasal CPAP admitted to the Neonatal intensive care unit (NICU) at Alzahra and Shahid Beheshti hospitals in Isfahan- Iran. After considering the inclusion and exclusion criteria, the neonate, randomized to caffeine (group C) and control (group P). In the caffeine group (C), caffeine will start on the 1st day of life and will continue until discontinuation of CPAP and oxygen administration. In control group, no caffeine or placebo will use.

Participants/Inclusion and exclusion criteria

The inclusion criteria included newborns with a gestational age less than 36 weeks and 6 days; newborns with spontaneous breathing and clinical signs and symptoms of RDS and requiring nasal CPAP. The exclusion criteria are infants who have major congenital anomalies; asphyxia; occurrence of apnea and need to mechanical ventilation in first 24 hours of birth; congenital cyanotic heart disease and sepsis in the first seven days of birth

Intervention groups

In the caffeine given group (C), 20 mg/kg caffeine as loading dose was begun then each day, 10 mg/kg as maintenance dose was used until discontinuation of

CPAP and oxygen administration. In control group, no caffeine was used.

Main outcome variables

The duration of respiratory support with oxygen and CPAP

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20170627034782N2**

Registration date: **2019-12-12, 1398/09/21**

Registration timing: **registered_while_recruiting**

Last update: **2019-12-12, 1398/09/21**

Update count: **0**

Registration date

2019-12-12, 1398/09/21

Registrant information

Name

Ramin Iranpour

Name of organization / entity

Isfahan University of Medical Sciences

Country

Iran (Islamic Republic of)

Phone

+98 31 3386 8247

Email address

iranpour@med.mui.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2019-11-11, 1398/08/20

Expected recruitment end date

2020-06-09, 1399/03/20

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effect of prophylactic Caffeine on the need for oxygen duration and respiratory support in preterm neonates with weight 1250-2000 gr with RDS requiring nasal CPAP

Public title

Effect of prophylactic Caffeine on duration of respiratory support in preterm neonates with RDS

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Newborns with a gestational age less than 36 weeks and 6 days Birth weight between 1250 and 2000 gram Spontaneous breathing and clinical signs and symptoms of RDS Requiring nasal CPAP

Exclusion criteria:

Major congenital anomalies Asphyxia Occurrence of apnea and need to mechanical ventilation in first 24 hours of birth Congenital cyanotic heart disease Sepsis in the first seven days of birth

Age

From **1 day** old to **1 day** old

Gender

Both

Phase

3

Groups that have been masked

- Participant

Sample size

Target sample size: **45**

Randomization (investigator's opinion)

Randomized

Randomization description

Sequentially numbered computerized randomization, sealed opaque envelopes

Blinding (investigator's opinion)

Single blinded

Blinding description

Only neonates who participate in the study do not know how to prescribe medicine

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Iran National committee for Ethics in Biomedical Research

Street address

Research deputy, Isfahan University of Medical Sciences, Hezarjerib Blvd

City

Isfahan

Province

Isfahan

Postal code

8184757851

Approval date

2019-10-09, 1398/07/17

Ethics committee reference number

IR.MUI.MED.REC.1398.355

Health conditions studied

1

Description of health condition studied

neonatal respiratory distress syndrome

ICD-10 code

P22.0

ICD-10 code description

Respiratory distress syndrome of newborn

Primary outcomes

1

Description

Duration of respiratory support with nasal CPAP

Timepoint

Hourly, since birth till discontinuation of nasal CPAP

Method of measurement

Report in special charts of neonatal intensive care unit every hour

Secondary outcomes

1

Description

Apnea of prematurity

Timepoint

Hourly, since birth till discharge

Method of measurement

Cardio-respiratory monitoring in daily recorded sheet

2

Description

Duration of oxygen need

Timepoint

Hourly, since birth till discharge
Method of measurement
Daily recorded sheet

3

Description
Duration of hospitalization
Timepoint
Daily
Method of measurement
Daily recorded sheet

4

Description
Patent ductus arteriosus
Timepoint
Daily
Method of measurement
Cardiac exam and echocardiography if necessary

5

Description
Chronic lung disease
Timepoint
Daily
Method of measurement
Physical exam and chest-xray

6

Description
Pneumothorax
Timepoint
Hourly, since birth till discharge
Method of measurement
Physical exam and chest-xray

7

Description
Nosocomial infection
Timepoint
Daily
Method of measurement
Blood culture

8

Description
Seizure
Timepoint
Daily
Method of measurement
Daily recorded sheet

9

Description
Time to full enteral feed
Timepoint
Daily

Method of measurement
Daily recorded sheet

10

Description
Intraventricular hemorrhage
Timepoint
Third day of life
Method of measurement
Brain sonography

11

Description
Necrotizing enterocolitis
Timepoint
Daily
Method of measurement
Physical exam and abdominal-xray

Intervention groups

1

Description
Intervention group: In the caffeine given group (C), the premature neonate with a weight between 1250-2000 germ and spontaneous breathing with clinical signs and symptoms of RDS and requiring nasal CPAP, 20 mg/kg caffeine as loading dose will be begun (parenteral) and then each day, 10 mg/kg as maintenance dose will be used until discontinuation of CPAP and oxygen administration .

Category
Treatment - Drugs

2

Description
Control group: In control group (P), the premature neonate with a weight between 1250-2000 germ and spontaneous breathing with clinical signs and symptoms of RDS and requiring nasal CPAP no caffeine or placebo was used.

Category
Treatment - Drugs

Recruitment centers

1

Recruitment center
Name of recruitment center
Al-zahra hospital, Isfahan
Full name of responsible person
Ramin Iranpour
Street address
No.16, Sout Resalat St., Mardavij Ave.
City
Isfahan
Province

Isfahan
Postal code
8168967893
Phone
+98 31 3668 1555
Email
iranpour@med.mui.ac.ir
Web page address
<https://mui.ac.ir>

2

Recruitment center

Name of recruitment center
Beheshti Hospital, Isfahan
Full name of responsible person
Ramin Iranpour
Street address
No.16, Sout Resalat St., Mardavij Ave.
City
Isfahan
Province
Isfahan
Postal code
8168967893
Phone
+98 31 3668 1555
Email
iranpour@med.mui.ac.ir
Web page address
<https://mui.ac.ir>

Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Esfahan University of Medical Sciences
Full name of responsible person
Bahram Nasr esfahani
Street address
Hezrjerib Ave, Isfahan University of Medical Sciences,
Isfahan Medical faculty
City
Isfahan
Province
Isfahan
Postal code
7346181746
Phone
+98 31 3792 9096
Fax
+98 31 3668 8597
Email
finance@med.mui.ac.ir

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?

Yes

Title of funding source

Esfahan University of Medical Sciences
Proportion provided by this source
100
Public or private sector
Public
Domestic or foreign origin
Domestic
Category of foreign source of funding
empty
Country of origin
Type of organization providing the funding
Academic

Person responsible for general inquiries

Contact

Name of organization / entity
Esfahan University of Medical Sciences
Full name of responsible person
Ramin Iranpour
Position
Associate professor of Pediatrics in Isfahan medical
faculty
Latest degree
Subspecialist
Other areas of specialty/work
Pediatrics
Street address
No. 16, Sout Resalat St, Mardavij Ave
City
Isfahan
Province
Isfahan
Postal code
8168967893
Phone
+98 31 3668 1555
Email
ramin.iranpour@gmail.com

Person responsible for scientific inquiries

Contact

Name of organization / entity
Esfahan University of Medical Sciences
Full name of responsible person
Ramin Iranpour
Position
Associate professor of Pediatrics in Isfahan Medical
Faculty
Latest degree
Subspecialist
Other areas of specialty/work
Pediatrics
Street address
No. 16, Sout Resalat St, Mardavij Ave
City
Isfahan
Province
Isfahan
Postal code

8168967893

Phone

+98 31 3668 1555

Email

ramin.iranpour@gmail.com

Person responsible for updating data

Contact

Name of organization / entity

Esfahan University of Medical Sciences

Full name of responsible person

Ramin Iranpour

Position

Associate professor of Pediatrics in Isfahan Medical Faculty

Latest degree

Subspecialist

Other areas of specialty/work

Pediatrics

Street address

No. 16, Sout Resalat St, Mardavij Ave

City

Isfahan

Province

Isfahan

Postal code

8168967893

Phone

+98 31 3668 1555

Email

ramin.iranpour@gmail.com

Sharing plan

Deidentified Individual Participant Data Set (IPD)

Undecided - It is not yet known if there will be a plan to make this available

Study Protocol

Undecided - It is not yet known if there will be a plan to make this available

Statistical Analysis Plan

No - There is not a plan to make this available

Informed Consent Form

Undecided - It is not yet known if there will be a plan to make this available

Clinical Study Report

Undecided - It is not yet known if there will be a plan to make this available

Analytic Code

Not applicable

Data Dictionary

Not applicable