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# Patent ductus arteriosus (PDA) treatment in premature infants

| Submission date | Recruitment status | [_] Prospectively registered |
|---|---|---|
| 10/02/2017 | No longer recruiting | [_] Protocol |
| **Registration date** | **Overall study status** | [_] Statistical analysis plan |
| 17/02/2017 | Completed | [X] Results |
| **Last Edited** | **Condition category** | [_] Individual participant data |
| 11/10/2017 | Circulatory System | |

## Plain English summary of protocol

Background and study aims
Patent ductus arteriosus (PDA) occurs when a blood vessel in the heart does not close after birth. For most babies, this vessel closes in the first few days after birth. However, when babies are born early the blood vessel can remain open as it is unable to close on its own. This can cause the baby to have to work harder to breathe and prevent the baby from gaining weight. A PDA can be closed in a preterm baby over the first 48 hours by being given ibuprofen (an anti-inflammatory (swelling) medication) through a needle in a vein. Studies have shown this to be safe way to close the PDA and prevent babies from requiring surgery. In some countries, the medication is not available through a needle in the vein and therefore studies need to be done to see if medication being given through the mouth is safe and effective. Using paracetamol (a commonly used pain medication) to close PDA has been suggested as an alternative. This study aims to compare two different types of medication (ibuprofen and paracetamol) that are given to babies by mouth to see how well they work at closing the PDA.

Who can participate?
Premature infants and newborns that weigh less than 1500 grams

What does the study involve?
Participants are allocated to one of two groups. Those in the first group are given a syrup form of paracetamol by mouth every six hours for three days. Those in the second group are given a syrup form of ibuprofen once daily for three days. Participants are followed up with an echocardiogram (a scan that uses sound waves to create a picture of the heart) after 24 hours to see if the PDA has closed. If the PDA has not closed yet, participants will receive a second course of the same medicine. If the PDA has not closed after the second course of medicine, they are given the other medicine.

What are the possible benefits and risks of participating?
Participants will benefit from having the PDA closed. There are no risks to participating.

Where is the study run from?
University of Jordan Hospital (Jordan)

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

Who is funding the study?
University of Jordan (Jordan)

Who is the main contact?
Dr Manar Al-lawama

# Contact information

### Type(s)
Scientific


### Contact name
Dr Manar Al-lawama

### ORCID ID
http://orcid.org/0000-0001-9313-112X

### Contact details
Queen Rania Street
Amman
Jordan
11943


# Additional identifiers

### EudraCT/CTIS number

### IRAS number

### ClinicalTrials.gov number

### Secondary identifying numbers
01

# Study information

### Scientific Title
Oral paracetamol versus oral ibuprofen for the treatment of patent ductus arteriosus in preterm infants: A randomized trial

### Study objectives
Oral ibuprofen is better than oral paracetamol in treating patent ductus arteriosus in preterm infants.

### Ethics approval required
Old ethics approval format

## Ethics approval(s)
Jordan University Hospital IRB Committee, 09/11/2014, ref: 108/2014/IRB J

## Study design
Single-centre randomised controlled trial

## Primary study design
Interventional

## Secondary study design
Randomised parallel trial

## Study setting(s)
Hospital

## Study type(s)
Treatment

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

## Health condition(s) or problem(s) studied
Patent ductus arteriosus (PDA)

## Interventions
Participants are randomly allocated to receiving either oral paracetamol or oral ibuprofen. Randomisation is done through a computer generated numbers placed in opaque envelopes with sequential numbers.

Group 1 (oral paracetamol): Participants receive 10 mg/kg/dose of paracetamol orally (as a syrup) followed by 1-2 cc 0/9% saline every six hours for three days.

Group 2 (oral ibuprofen group): Participants receive 10mg/kg/dose of ibuprofen orally (as a syrup) followed by 1-2 cc 0.9% saline once daily for three days.

An echocardiogram is done within 24 hours of last treatment dose to assess the PDA. If the treatment fails, another course of the same assigned drug is given. If the treatment fails after the second course of the same drug, the patient will receive the drug from the other group. Participants are followed up if there are respiratory distress symptoms.

## Intervention Type
Drug

## Phase
Not Applicable

## Drug/device/biological/vaccine name(s)
1. Paracetamol 2. Ibuprofen

## Primary outcome measure

1. Closure of PDA is measured by an echocadiograph within 24 hours post treatment
2. Mortality is assessed through daily follow up of the patients and their medical records.

### Secondary outcome measures
1. Respiratory distress syndrome (RDS) is measured using physical examination for clinical signs of respiratory distress and chest X-ray finding at baseline
2. Bronchopulmonary dysplasia (BPD) is measured using clinical examination of the patient for the need of respiratory support or supplemented oxygen at 36 weeks post conceptional age
3. Mechanical ventilation (MV) is measured using clinical examination and reviewing patient record any time during hospital stay until discharge
4. Necrotizing enterocolitis (NEC) is measured using abdominal X-ray for the presence of pneumatosis intistinalis any time during hospital stay
5. Retinopathy of prematurity (ROP) is measured using binocular indirect ophthalmoscopy exam at 32 weeks post conceptional age for premature infants born < 28 weeks gestation or at 4 weeks chronological age for premature infants born > 28 weeks gestation
6. Intraventricular hemorrhage (IVH) is measured using trans-fontanel cranial ultrasound at 7 days of age
7. Periventricular leukomalacia (PVL) is measured using trans-fontanel cranial ultrasound at one month of age

### Overall study start date
01/06/2014

### Completion date
18/02/2017

## Eligibility

### Key inclusion criteria
1. Premature infants born 32 weeks gestation or earlier
2. Newborns with birth weight 1500 g or under

### Participant type(s)
Patient

### Age group
Neonate

### Sex
Both

### Target number of participants
10

### Key exclusion criteria
1. Ductal dependent congenital heart diseases
2. Major congenital malformation
3. Grade 3-4 intraventricular hemorrhage
4. Renal impairment defined as Creatinine > 1.5 mg/dl
5. Pulmonary hemorrhage

6. Thrombocytopenia < 60.000 /mm 3
7. Elevated Alanine transaminase (ALT)

### Date of first enrolment
01/03/2015

### Date of final enrolment
31/10/2016

## Locations

### Countries of recruitment
Jordan

### Study participating centre
**Jordan University Hospital**
Queen Rania Street
Amman
Jordan
11943

## Sponsor information

### Organisation
University of Jordan

### Sponsor details
Queen Rania Street
Amman
Jordan
11942

### Sponsor type
University/education

### Website
www.ju.edu.jo

### ROR
https://ror.org/05k89ew48

## Funder(s)

**Funder type**
University/education

**Funder Name**
University of Jordan

**Alternative Name(s)**
UJ

**Funding Body Type**
Government organisation

**Funding Body Subtype**
Local government

**Location**
Jordan

# Results and Publications

**Publication and dissemination plan**
Planned publication in a high-impact peer reviewed journal by April 2017.

**Intention to publish date**
30/04/2017

**Individual participant data (IPD) sharing plan**
The current data sharing plans for the current study are unknown and will be made available at a later date.

**IPD sharing plan summary**
Data sharing statement to be made available at a later date

**Study outputs**

| Output type | Details | Date created | Date added | Peer reviewed? | Patient-facing? |
|---|---|---|---|---|---|
| Results article | results | 01/02/2018 | | Yes | No |