



## Clinical trial results:

### Evaluation of patients after cardiac surgery: Novel ultrasound parameters for quantification of renal perfusion & analysis of phenylephrines' effect on invasive haemodynamics and echocardiographic measures.

#### Summary

EudraCT number	2020-000573-25
Trial protocol	DK
Global end of trial date	31 May 2021

#### Results information

Result version number	v1 (current)
This version publication date	04 January 2023
First version publication date	04 January 2023

#### Trial information

##### Trial identification

Sponsor protocol code	1.1
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##### Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT04419662
WHO universal trial number (UTN)	-

Notes:

#### Sponsors

Sponsor organisation name	Aarhus University Hospital
Sponsor organisation address	Palle Juul-Jensens Boulevard 99, Aarhus N, Denmark, 8200
Public contact	Department of Anaesthesia, Aarhus University Hospital, 45 27208913, petejuhl@rm.dk
Scientific contact	Department of Anaesthesia, Aarhus University Hospital, 45 50736322, johanfhermansen@gmail.com

Notes:

#### Paediatric regulatory details

Is trial part of an agreed paediatric investigation plan (PIP)	No
Does article 45 of REGULATION (EC) No 1901/2006 apply to this trial?	No
Does article 46 of REGULATION (EC) No 1901/2006 apply to this trial?	No

Notes:

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**Results analysis stage**

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Analysis stage	Final
Date of interim/final analysis	06 August 2021
Is this the analysis of the primary completion data?	Yes
Primary completion date	31 May 2021
Global end of trial reached?	Yes
Global end of trial date	31 May 2021
Was the trial ended prematurely?	No

Notes:

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**General information about the trial**

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Main objective of the trial:

To evaluate the haemodynamic effects of phenylephrine

Please see <https://pubmed.ncbi.nlm.nih.gov/35230558/> for detailed results or contact the corresponding author: johan.hermansen@rm.dk for questions or elaborations on results. This small phase-4 study was safe and with no serious adverse events or suspected events related to the study.

Protection of trial subjects:

Patients remained sedated in study period (after surgery; as per local standard)

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	01 April 2020
Long term follow-up planned	No
Independent data monitoring committee (IDMC) involvement?	Yes

Notes:

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**Population of trial subjects**

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**Subjects enrolled per country**

Country: Number of subjects enrolled	Denmark: 31
Worldwide total number of subjects	31
EEA total number of subjects	31

Notes:

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**Subjects enrolled per age group**

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In utero	0
Preterm newborn - gestational age < 37 wk	0
Newborns (0-27 days)	0
Infants and toddlers (28 days-23 months)	0
Children (2-11 years)	0
Adolescents (12-17 years)	0
Adults (18-64 years)	9
From 65 to 84 years	22
85 years and over	0

## Subject disposition

### Recruitment

Recruitment details: -

### Pre-assignment

Screening details: -

### Pre-assignment period milestones

Number of subjects started	31
Number of subjects completed	31

### Period 1

Period 1 title	Phenylephrine
Is this the baseline period?	Yes
Allocation method	Randomised - controlled
Blinding used	Not blinded

### Arms

<b>Arm title</b>	Phenylephrine and changes in PEEP and position
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Arm description:

Changes in positive end-expiratory pressure and position, and afterwards in mean arterial pressure induced by infusion of phenylephrine.

Arm type	Experimental
Investigational medicinal product name	phenylephrine
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Solution for infusion
Routes of administration	Infusion

Dosage and administration details:

Phenylephrine 1 mg/ml at incremental infusion rates, maximum of 1 ug/kg/min

<b>Number of subjects in period 1</b>	Phenylephrine and changes in PEEP and position
Started	31
Completed	31

<b>Period 2</b>	
Period 2 title	Before/after phenylephrine
Is this the baseline period?	No
Allocation method	Randomised - controlled
Blinding used	Not blinded
<b>Arms</b>	
<b>Arm title</b>	Before/after phenylephrine
Arm description: -	
Arm type	No intervention
No investigational medicinal product assigned in this arm	

<b>Number of subjects in period 2</b>	Before/after phenylephrine
Started	31
Before/after phenylephrine	31
Completed	31

## Baseline characteristics

### Reporting groups

Reporting group title	Phenylephrine
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Reporting group description: -
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Reporting group values	Phenylephrine	Total	
Number of subjects	31	31	
Age categorical			
Units: Subjects			
In utero		0	
Preterm newborn infants (gestational age < 37 wks)		0	
Newborns (0-27 days)		0	
Infants and toddlers (28 days-23 months)		0	
Children (2-11 years)		0	
Adolescents (12-17 years)		0	
Adults (18-64 years)		0	
From 65-84 years		0	
85 years and over		0	
Age continuous			
Units: years			
median	68		
inter-quartile range (Q1-Q3)	62 to 72	-	
Gender categorical			
Cannot change to make numbers add up. The section is locked by the system.			
Units: Subjects			
Female	3	3	
Male	28	28	

### Subject analysis sets

Subject analysis set title	Phenylephrine
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Subject analysis set type	Full analysis
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Subject analysis set description:
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All patients
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Reporting group values	Phenylephrine		
Number of subjects	31		
Age categorical			
Units: Subjects			
In utero			
Preterm newborn infants (gestational age < 37 wks)			
Newborns (0-27 days)			
Infants and toddlers (28 days-23 months)			
Children (2-11 years)			
Adolescents (12-17 years)			

Adults (18-64 years) From 65-84 years 85 years and over			
Age continuous Units: years median inter-quartile range (Q1-Q3)			
Gender categorical			
Cannot change to make numbers add up. The section is locked by the system.			
Units: Subjects			
Female	2		
Male	29		

## End points

### End points reporting groups

Reporting group title	Phenylephrine and changes in PEEP and position
Reporting group description: Changes in positive end-expiratory pressure and position, and afterwards in mean arterial pressure induced by infusion of phenylephrine.	
Reporting group title	Before/after phenylephrine
Reporting group description: -	
Subject analysis set title	Phenylephrine
Subject analysis set type	Full analysis
Subject analysis set description: All patients	

### Primary: Resistive index

End point title	Resistive index
End point description: View link for more details	
End point type	Primary
End point timeframe: 1 hour	

End point values	Phenylephrine and changes in PEEP and position	Before/after phenylephrine	Phenylephrine	
Subject group type	Reporting group	Reporting group	Subject analysis set	
Number of subjects analysed	31	31	31	
Units: noon unit				
median (confidence interval 95%)	0.63 (0.61 to 0.66)	0.64 (0.62 to 0.67)	0.64 (0.62 to 0.67)	

Attachments (see zip file)	table.png table 2.png
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### Statistical analyses

Statistical analysis title	Mixed models analysis
Comparison groups	Phenylephrine and changes in PEEP and position v Before/after phenylephrine

Number of subjects included in analysis	62
Analysis specification	Pre-specified
Analysis type	equivalence <sup>[1]</sup>
P-value	< 0.05
Method	Mixed models analysis

Notes:

[1] - Patient characteristics are presented as medians (interquartile range (IQR)) or proportions (percentage). A repeated measures multilevel mixed-effects linear regression model with an interaction term between PEEP and position was used for the first part of the study and for phenylephrine infusion in the second part of the study. Marginal means or medians (with 95% confidence interval (95% CI)) and effects of PEEP, position and phenylephrine were calculated in the model.

## Secondary: RVSI

End point title	RVSI
End point description:	
View link for more details	
End point type	Secondary
End point timeframe:	
1 hour	

End point values	Phenylephrine			
Subject group type	Subject analysis set			
Number of subjects analysed	31			
Units: noon unit				
median (confidence interval 95%)	0.16 (0.11 to 0.21)			

## Statistical analyses

No statistical analyses for this end point

## Secondary: PPF

End point title	PPF
End point description:	
View link for more details	
End point type	Secondary
End point timeframe:	
1 hour	



<b>End point values</b>	Phenylephrine			
Subject group type	Subject analysis set			
Number of subjects analysed	31			
Units: noon unit				
median (confidence interval 95%)	0.18 (0.16 to 0.20)			

## Statistical analyses

No statistical analyses for this end point

## Adverse events

### Adverse events information

Timeframe for reporting adverse events:

1 day

Assessment type	Systematic
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### Dictionary used

Dictionary name	MedDRA
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Dictionary version	10
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### Reporting groups

Reporting group title	Phenylephrine
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Reporting group description:

One patient was on an x-ray taken before the study found to have an infiltrate that had to be followed. On follow-up this was not suspected to be malignant. No further actions were taken.

Serious adverse events	Phenylephrine		
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 31 (0.00%)		
number of deaths (all causes)	0		
number of deaths resulting from adverse events	0		

Frequency threshold for reporting non-serious adverse events: 5 %

Non-serious adverse events	Phenylephrine		
Total subjects affected by non-serious adverse events			
subjects affected / exposed	1 / 31 (3.23%)		
Respiratory, thoracic and mediastinal disorders			
Chest X-ray abnormal			
subjects affected / exposed	1 / 31 (3.23%)		
occurrences (all)	1		

## More information

### Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? No

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### Interruptions (globally)

Were there any global interruptions to the trial? No

### Limitations and caveats

None reported

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### Online references

<http://www.ncbi.nlm.nih.gov/pubmed/35230558>