Clinical trial results:
Effects of mannitol on delayed graft function after cadaveric renal transplantation

Summary

EudraCT number	2014-005391-29
Trial protocol	AT
Global end of trial date	01 July 2018

Results information

Result version number	v1 (current)
This version publication date	14 May 2021
First version publication date	14 May 2021
Summary attachment (see zip file)	Mannitol_BMC (Mannitol_BMC.pdf)

Trial information

Trial identification

Sponsor protocol code	2021/2014

Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT02705573
WHO universal trial number (UTN)	-

Notes:

Sponsors

Sponsor organisation name	Medical University of Vienna
Sponsor organisation address	Spitalgasse 23, Vienna, Austria,
Public contact	Head Office, Medical University of Vienna, 0043 14040041020, sekretariat-anaesthesie@meduniwien.ac.at
Scientific contact	Head Office, Medical University of Vienna, 0043 14040041020, sekretariat-anaesthesie@meduniwien.ac.at

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:

Results analysis stage

Analysis stage	Final
Date of interim/final analysis	12 October 2018
Is this the analysis of the primary completion data?	Yes
Primary completion date	01 July 2018
Global end of trial reached?	Yes
Global end of trial date	01 July 2018
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

Effects of mannitol on delayed graft function after cadaveric renal transplantation

Protection of trial subjects:

Blinded follow-up within 24 hours after surgery

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	10 January 2018
Long term follow-up planned	No
Independent data monitoring committee (IDMC) involvement?	No

Notes:

Population of trial subjects

Subjects enrolled per country

Country: Number of subjects enrolled	Austria: 34
Worldwide total number of subjects	34
EEA total number of subjects	34

Notes:

Subjects enrolled per age group

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)	24
From 65 to 84 years	10
85 years and over	0

Subject disposition

Recruitment

Recruitment details:

Recruitment period: January 2018 and July 2018; Recruitment territories: Austria

Pre-assignment

Screening details:

Patients with end-stage renal disease between 18 and 80 years of age undergoing deceased donor renal transplantation were eligible.
Exclusion criterion was a known allergy to mannitol.

Period 1

Period 1 title	Overall Trial (overall period)
Is this the baseline period?	Yes
Allocation method	Randomised - controlled
Blinding used	Double blind
Roles blinded	Subject, Investigator, Monitor, Data analyst, Carer, Assessor

Blinding implementation details:

IMP was prepared and blinded by the hospital pharmacy "Bad Ischl".

Arms

Are arms mutually exclusive?	Yes
Arm title	Mannitol

Arm description:

Patients assigned to this group received a solution of 20% mannitol after reperfusion of the graft.

Arm type	Experimental
Investigational medicinal product name	Mannitol 20% or NaCl 0-9%
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Solution for injection
Routes of administration	Intravenous use

Dosage and administration details:

20% mannitol solution (blinded)
Dosage: 5mL/KG
Administration: 100ml of 20% study medication were given as bolus after reperfusion of the graft, the remaining infusion was given until end of surgery

Arm title	NaCl

Arm description:

Patients assigned to this group recieved 0.9% NaCl solution after reperfusion of the graft.

Arm type	Placebo
Investigational medicinal product name	Mannitol 20% or NaCl 0-9%
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Solution for injection
Routes of administration	Intravenous use

Dosage and administration details:

0.9% NaCL (blinded)
Dosage: 5mL/KG
Administration: 100ml of study solution were given as bolus after reperfusion of the graft, the remaining infusion was given until end of surgery

Number of subjects in period 1	Mannitol	NaCl
Started	17	17
Completed	16	16
Not completed	1	1
Adverse event, serious fatal	1	-
Lost to follow-up	-	1

Baseline characteristics

Reporting groups	
Reporting group title	Mannitol
Reporting group description:	
Patients assigned to this group received a solution of 20% mannitol after reperfusion of the graft.	
Reporting group title	NaCl
Reporting group description:	
Patients assigned to this group recieved 0.9% NaCl solution after reperfusion of the graft.	

Reporting group values	Mannitol	NaCl	Total
Number of subjects	17	17	34
Age categorical Units: Subjects			
Adults (18-64 years)	10	14	24
From 65-84 years	7	3	10
Age continuous Units: years			
median	62	53	
inter-quartile range (Q1-Q3)	57 to 71	45 to 68	-
Gender categorical Units: Subjects			
Female	7	7	14
Male	10	10	20

End points

End points reporting groups

Reporting group title	Mannitol
Reporting group description: Patients assigned to this group received a solution of 20% mannitol after reperfusion of the graft.	
Reporting group title	NaCl
Reporting group description: Patients assigned to this group recieved 0.9% NaCl solution after reperfusion of the graft.	

Primary: Differences in a set of biomarkers

End point title	Differences in a set of biomarkers
End point description:	
End point type	Primary
End point timeframe: within 24 hours after graft reperfusion	

End point values	Mannitol	NaCl		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	16[1]	16[2]		
Units: pg/mL				
median (inter-quartile range (Q1-Q3))	3492 (3040 to 4910)	3828 (3299 to 6556)		

Notes:

[1] - 1 patient died within the study period

[2] - loss of follow up in 1 patient

Statistical analyses

Statistical analysis title	Mixed Linear Model for biomarker concentrations
Comparison groups	Mannitol v NaCl
Number of subjects included in analysis	32
Analysis specification	Pre-specified
Analysis type	superiority
P-value	< 0.05
Method	Mixed models analysis
Parameter estimate	Median difference (final values)

Adverse events

Adverse events information[1]	
Timeframe for reporting adverse events: Within 24 hours after renal graft reperfussion	
Assessment type	Systematic

Dictionary used	
Dictionary name	MedDRA
Dictionary version	19.1

Reporting groups	
Reporting group title	Arm 1
Reporting group description: Mannitol administration	
Reporting group title	Arm 2
Reporting group description: Placebo administration	

Notes:

[1] - There are no non-serious adverse events recorded for these results. It is expected that there will be at least one non-serious adverse event reported.
Justification: There are no non-serious adverse events recorded for these results. It is expected that there will be at least one non-serious adverse event reported. Either resolve this issue or provide a justification.

Serious adverse events	Arm 1	Arm 2	
Total subjects affected by serious adverse events			
subjects affected / exposed	1 / 17 (5.88%)	1 / 17 (5.88%)	
number of deaths (all causes)	1	0	
number of deaths resulting from adverse events	0	0	
Vascular disorders			
Pulmonary embolism			
subjects affected / exposed	1 / 17 (5.88%)	0 / 17 (0.00%)	
occurrences causally related to treatment / all	0 / 1	0 / 0	
deaths causally related to treatment / all	0 / 1	0 / 0	
Cardiac disorders			
Cardiac Arrest			
subjects affected / exposed	0 / 17 (0.00%)	1 / 17 (5.88%)	
occurrences causally related to treatment / all	0 / 0	0 / 1	
deaths causally related to treatment / all	0 / 0	0 / 0	

Frequency threshold for reporting non-serious adverse events: 0 %

Non-serious adverse events	Arm 1	Arm 2	
Total subjects affected by non-serious adverse events			
subjects affected / exposed	0 / 17 (0.00%)	0 / 17 (0.00%)	

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
06 December 2017	Amendment to the protocol: Change of the primary endpoint. Change of the sample size.

Notes:

Interruptions (globally)

Were there any global interruptions to the trial? No

Limitations and caveats

None reported

Online references

http://www.ncbi.nlm.nih.gov/pubmed/32723374