Clinical trial results:
Cardiac and renal interactions during the treatment of decompensated heart failure: diuretics versus ultrafiltration (CRUF Trial)

Summary

EudraCT number	2009-017589-22
Trial protocol	BE
Global end of trial date	21 October 2011

Results information

Result version number	v1 (current)
This version publication date	30 July 2021
First version publication date	30 July 2021
Summary attachment (see zip file)	Statement of discontinuation (2009-017589-22.docx)

Trial information

Trial identification

Sponsor protocol code	AGO/2009/013

Additional study identifiers

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

Notes:

Sponsors

Sponsor organisation name	Ghent University Hospital
Sponsor organisation address	Corneel Heymanslaan 10, Ghent, Belgium, 9000
Public contact	Hiruz CTU, Ghent University Hospital, +32 93320500, hiruz.ctu@uzgent.be
Scientific contact	Hiruz CTU, Ghent University Hospital, +32 93320500, hiruz.ctu@uzgent.be

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	21 October 2011
Is this the analysis of the primary completion data?	Yes
Primary completion date	21 October 2011
Global end of trial reached?	Yes
Global end of trial date	21 October 2011
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

To understand cardiorenal interactions when treated with ultrafiltration versus diuretics for decompensated heart failure to better select patients who will benefit from ultrafiltration in the future.
To determine if there are differences in:
a. Influence on renal congestion of diuretics versus ultrafiltration; intra-abdominal pressure as a parameter of renal congestion,
b. Influence of diuretics versus ultrafiltration on plasma refill rate: plasma hematocrit as a measure of dilution
c. Influence of diuretics versus ultrafiltration on echocardiographic filling parameters and hydration state via bioelectrical impedance.
d. Influence on urinary potassium/sodium excretion with diuretics versus ultrafiltration.
e. Impact on a new renal biomarker: urinary and plasma NGAL (vs creatinine, cystatin C, measured urinary creat clearance) for detection acute renal insufficiency when administering diuretics versus ultrafiltration.

Protection of trial subjects:

Ethics review and approval, informed consent, supportive care and routine monitoring.

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	15 April 2010
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	Belgium: 1
Worldwide total number of subjects	1
EEA total number of subjects	1

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)	0
From 65 to 84 years	1
85 years and over	0

Subject disposition

Recruitment

Recruitment details:

1 patient was screened in the period from 15-04-2010 till 21-10-2011. 1 patient was enrolled in the diuretics group. Due to limitations of the system, the number of patients that entered ultrafiltration group was defined as 1, the number of completion as 0. End of Trial notification was dated 21/10/2011 and submitted to EC and CA 21/10/2011.

Pre-assignment

Screening details:

Inclusion criteria:
Severe systolic heart failure, ejection fraction < 40% and admission with acute decompensated heart failure: NYHA
class III-IV + 1 of the following: Vena Jugularis distension >6cm - Diastolic function echo: E/E'medial >15, lateral>12 - RX thorax: pulmonary edema-pleural fluid.
Minimum 18 years of age

Period 1

Period 1 title	Overall Trial (overall period)
Is this the baseline period?	Yes
Allocation method	Non-randomised - controlled
Blinding used	Not blinded

Arms

Are arms mutually exclusive?	No
Arm title	ultrafiltration group

Arm description:

No patients were enrolled in the ultrafiltration group. Due to technical limitations of the system the number of subjects that started this arm was defined as 1 and the number of patients that completed the arm was defined as 0.

Procedure: Ultrafiltration through double lumen catheter, via central vein.

Arm type	procedure

No investigational medicinal product assigned in this arm

Arm title	diuretics group

Arm description: -

Arm type	Active comparator
Investigational medicinal product name	Bumetanide
Investigational medicinal product code	CAS 28395031
Other name	Burinex
Pharmaceutical forms	Injection
Routes of administration	Intravenous use

Dosage and administration details:

Maximum duration of treatment of a subject: 72 hours
Maximum dose allowed: Dose per day, 1 mg/h milligram(s)/hour

Number of subjects in period 1	ultrafiltration group	diuretics group
Started	1	1
Completed	0	1
Not completed	1	0
No patients were enrolled in this study arm.	1	-

Baseline characteristics

Reporting groups

Reporting group title	ultrafiltration group

Reporting group description:

No patients were enrolled in the ultrafiltration group. Due to technical limitations of the system the number of subjects that started this arm was defined as 1 and the number of patients that completed the arm was defined as 0.

Procedure: Ultrafiltration through double lumen catheter, via central vein.

Reporting group title	diuretics group

Reporting group description: -

Reporting group values	ultrafiltration group	diuretics group	Total
Number of subjects	1	1	1
Age categorical Units: Subjects			
In utero	0	0	0
Preterm newborn infants (gestational age < 37 wks)	0	0	0
Newborns (0-27 days)	0	0	0
Infants and toddlers (28 days-23 months)	0	0	0
Children (2-11 years)	0	0	0
Adolescents (12-17 years)	0	0	0
Adults (18-64 years)	0	0	0
From 65-84 years	1	1	1
85 years and over	0	0	0
Gender categorical Units: Subjects			
Female	0	0	0
Male	1	1	1

End points

End points reporting groups

Reporting group title	ultrafiltration group

Reporting group description:

No patients were enrolled in the ultrafiltration group. Due to technical limitations of the system the number of subjects that started this arm was defined as 1 and the number of patients that completed the arm was defined as 0.

Procedure: Ultrafiltration through double lumen catheter, via central vein.

Reporting group title	diuretics group

Reporting group description: -

Primary: Incidence of AKI and determining factors in patients with acute decompensated heart failure with treated with ultrafiltration versus diuretics

End point title	Incidence of AKI and determining factors in patients with acute decompensated heart failure with treated with ultrafiltration versus diuretics[1]

End point description:

End point type	Primary

End point timeframe:

At 6 months

Notes:

[1] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.
Justification: No statistical analysis available.

End point values	ultrafiltration group	diuretics group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	0[2]	1		
Units: probability				
number (not applicable)		0		

Notes:

[2] - No patients were enrolled in this group.

Statistical analyses

No statistical analyses for this end point

Secondary: Combined endpoint of mortality/rehospitalisation-urgent outpatient visit due to heart failure

End point title	Combined endpoint of mortality/rehospitalisation-urgent outpatient visit due to heart failure

End point description:

End point type	Secondary

End point timeframe:

At 6 months

End point values	ultrafiltration group	diuretics group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	0[3]	1		
Units: N/A		0		

Notes:

[3] - No patients were enrolled in this group.

Statistical analyses

No statistical analyses for this end point

Secondary: Determination of the value of Neutrophil gelatinase-associated lipocalin (NGAL) to predict AKI in acute decompensated heart failure (vs creatinine, Cystatin C,measured urinary creatinine clearance) in patients treated with diuretics vs ultrafiltration.

End point title	Determination of the value of Neutrophil gelatinase-associated lipocalin (NGAL) to predict AKI in acute decompensated heart failure (vs creatinine, Cystatin C,measured urinary creatinine clearance) in patients treated with diuretics vs ultrafiltration.

End point description:

End point type	Secondary

End point timeframe:

At 48h after treatment start

End point values	ultrafiltration group	diuretics group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	0[4]	1		
Units: NGAL value				
number (not applicable)		0		

Notes:

[4] - No patients were enrolled in this group.

Statistical analyses

No statistical analyses for this end point

Secondary: Kidney function measured by creatinine

End point title	Kidney function measured by creatinine

End point description:

End point type	Secondary

End point timeframe:

After 28 days and 6 months

End point values	ultrafiltration group	diuretics group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	0[5]	1		
Units: creatinine				
number (not applicable)		0		

Notes:

[5] - No patients were enrolled in this group.

Statistical analyses

No statistical analyses for this end point

Adverse events

Adverse events information[1]

Timeframe for reporting adverse events:

Overall study

Assessment type	Non-systematic

Dictionary used

Dictionary name	MedDRA
Dictionary version	12.1

Reporting groups

Reporting group title	diuretics group

Reporting group description: -

Serious adverse events	diuretics group		
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 1 (0.00%)		
number of deaths (all causes)	0		
number of deaths resulting from adverse events			

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

Non-serious adverse events	diuretics group		
Total subjects affected by non-serious adverse events			
subjects affected / exposed	0 / 1 (0.00%)		

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: No non-serious adverse events were recorded for the participating patients.

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
27 May 2010	Reasons for the substantial amendment: changes in interpretation of scientific documents/value of the trial, changes in conduct or management of the trial. Reasons for substantial amendment: Amendment of an inclusion criterion Brief description of the changes: Change of one inclusion criterion: age minimum 18 years instead of patients between 18 and 75 years

Notes:

Interruptions (globally)

Were there any global interruptions to the trial? No

Limitations and caveats

Limitations of the trial such as small numbers of subjects analysed or technical problems leading to unreliable data.

Given the poor inclusion, the study was discontinued.

Notes: