Clinical trial results:
Supersaturation and precipitation of diclofenac in the stomach of healthy human volunteers

Summary

EudraCT number	2013-004636-29
Trial protocol	BE
Global end of trial date	05 October 2017

Results information

Result version number	v1 (current)
This version publication date	27 October 2023
First version publication date	27 October 2023

Trial information

Trial identification

Sponsor protocol code	DDD13DICLO

Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	-
WHO universal trial number (UTN)	-
Other trial identifiers	Clinical Trial Center UZ Leuven: S56179

Notes:

Sponsors

Sponsor organisation name	KULeuven / UZLeuven
Sponsor organisation address	Herestraat 49, Leuven, Belgium, 3000
Public contact	Drug Delivery & Disposition, KU Leuven, +32 16379105, patrick.augustijns@kuleuven.be
Scientific contact	Drug Delivery & Disposition, KU Leuven, +32 16379105, patrick.augustijns@kuleuven.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	22 May 2018
Is this the analysis of the primary completion data?	No

Global end of trial reached?	Yes
Global end of trial date	05 October 2017
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

This study aims to investigate principles of gastric supersaturation and precipitation of a weakly acidic drug in healthy human volunteers. Specifically the influence of nutritional state and coadministration of proton-pump inhibitors will be investigated.

Protection of trial subjects:

Healthy volunteers
xylocaine spray/gel during positioning and removal of nasogastric catheter

Background therapy: -	
Evidence for comparator: -	
Actual start date of recruitment	31 January 2014
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: 16
Worldwide total number of subjects	16
EEA total number of subjects	16

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)	16
From 65 to 84 years	0
85 years and over	0

Subject disposition

Recruitment

Recruitment details:

Healthy volunteers

Pre-assignment

Screening details:

Exclusion criteria
Volunteers suffering from hepatitis B/C and/or HIV infection were excluded from participation
illness at the time of the study,
medication use,
a history of acute/chronic gastrointestinal disease(s),
(possible) pregnancy,
frequent exposure to radiation during the previous year

Period 1

Period 1 title	diclofenac (overall period)
Is this the baseline period?	Yes
Allocation method	Randomised - controlled
Blinding used	Not blinded

Arms

Are arms mutually exclusive?	Yes
Arm title	cross over: fed vs fasted state

Arm description:

crossover study: administration of one tablet of Cataflam in fed state vs fasted state

Arm type	Experimental
Investigational medicinal product name	diclofenac
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Tablet
Routes of administration	Oral use

Dosage and administration details:

crossover study in which the following conditions were tested:
• Administration of one tablet of Cataflam (50 mg
diclofenac potassium) with 240 mL of tap water under
fasted state conditions.
• Administration of one tablet of Cataflam (50 mg
diclofenac potassium) with 240 mL of tap water under
fed state conditions.

Arm title	4 arm cross over

Arm description:

administration of a diclofenac potassium solution in fasted and fed state conditions with or without concomitant PPI use.

Arm type	Experimental
Investigational medicinal product name	diclofenac
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Tablet
Routes of administration	Oral use

Dosage and administration details:

dissolving one tablet of Cataflam® (50 mg diclofenac potassium) in 240 mL of tap water; the diclofenac potassium solution was orally administered
To simulate concomitant PPI use, volunteers were asked to take a tablet of Nexiam® once-daily for 3

days with the first administration 2 days prior to the study.

Arm title	diclofenac fed state

Arm description:

One tablet of Cataflam (50 mg of diclofenac potassium) was administered with 240 mL of tap water in fed state conditions.

Arm type	Experimental
Investigational medicinal product name	diclofenac
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Tablet
Routes of administration	Oral use

Dosage and administration details:

One tablet of Cataflam (50 mg of diclofenac potassium) was administered with 240 mL of tap water in fed state conditions.

Number of subjects in period 1	cross over: fed vs fasted state	4 arm cross over	diclofenac fed state
Started	6	5	5
Completed	6	5	5

Baseline characteristics

Reporting groups	
Reporting group title	cross over: fed vs fasted state
Reporting group description:	
crossover study: administration of one tablet of Cataflam in fed state vs fasted state	
Reporting group title	4 arm cross over
Reporting group description:	
administration of a diclofenac potassium solution in fasted and fed state conditions with or without concomitant PPI use.	
Reporting group title	diclofenac fed state
Reporting group description:	
One tablet of Cataflam (50 mg of diclofenac potassium) was administered with 240 mL of tap water in fed state conditions.	

Reporting group values	cross over: fed vs fasted state	4 arm cross over	diclofenac fed state
Number of subjects	6	5	5
Age categorical Units: Subjects			
Adults (18-64 years)	6	5	5
Gender categorical Units: Subjects			
Female	2	3	2
Male	4	2	3

Reporting group values	Total		
Number of subjects	16		
Age categorical Units: Subjects			
Adults (18-64 years)	16		
Gender categorical Units: Subjects			
Female	7		
Male	9		

End points

End points reporting groups

Reporting group title	cross over: fed vs fasted state
Reporting group description:	
crossover study: administration of one tablet of Cataflam in fed state vs fasted state	
Reporting group title	4 arm cross over
Reporting group description:	
administration of a diclofenac potassium solution in fasted and fed state conditions with or without concomitant PPI use.	
Reporting group title	diclofenac fed state
Reporting group description:	
One tablet of Cataflam (50 mg of diclofenac potassium) was administered with 240 mL of tap water in fed state conditions.	

Primary: diclofenac concentrations

End point title	diclofenac concentrations[1]
End point description:	

End point type	Primary
End point timeframe:	
Since we only conduct exploratory studies in a limited number of volunteers, statistical hypothesis testing is not applicable	

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: Since we only conduct exploratory studies in a limited number of volunteers, statistical hypothesis testing is not applicable

End point values	cross over: fed vs fasted state	4 arm cross over	diclofenac fed state	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	6	5	5	
Units: nM				
number (not applicable)	0	0	0	

Statistical analyses

No statistical analyses for this end point

Adverse events

Adverse events information[1]

Timeframe for reporting adverse events:

For each individual, corresponds to timeframe of study participation (from signing of informed consent until last visit).

Assessment type	Non-systematic

Dictionary used

Dictionary name	MedDRA
Dictionary version	23

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

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: The healthy volunteers did not report any adverse event during the study.

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? No

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.

Since we only conduct exploratory studies in a limited number of volunteers, statistical hypothesis testing is not applicable

Notes:

Online references

http://www.ncbi.nlm.nih.gov/pubmed/28621952

http://www.ncbi.nlm.nih.gov/pubmed/26375734

http://www.ncbi.nlm.nih.gov/pubmed/30571131