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Trial record **1 of 1** for: CLCZ696B2225

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Evaluation of Drug-drug Interaction Between LCZ696 and Sildenafil in Subjects With Mild to Moderate Hypertension

This study has been completed.

Sponsor:
Novartis Pharmaceuticals

Information provided by (Responsible Party):
Novartis (Novartis Pharmaceuticals)

ClinicalTrials.gov Identifier:
NCT01601470

First received: May 16, 2012
Last updated: October 6, 2015
Last verified: October 2015
History of Changes

Full Text View | Tabular View | **Study Results** | Disclaimer | How to Read a Study Record

Results First Received: July 11, 2015

Study Type:	Interventional
Study Design:	Endpoint Classification: Pharmacokinetics Study; Intervention Model: Single Group Assignment; Masking: Open Label
Condition:	Mild to Moderate Hypertension
Interventions:	Drug: LCZ696 Drug: Sildenafil

Participant Flow

Hide Participant Flow

Recruitment Details

Key information relevant to the recruitment process for the overall study, such as dates of the recruitment period and locations
No text entered.

Pre-Assignment Details

Significant events and approaches for the overall study following participant enrollment, but prior to group assignment
No text entered.

Reporting Groups

	Description
Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil	During Treatment Period 1, on study Day 1, participants received a single dose of sildenafil followed by a wash out on Day 2. In Period 2 (study Days 3-7), participants received LCZ696 once daily. In Period 3, on study Day 8, participants received LCZ696, co-administered at the same time with a single dose of sildenafil.

Participant Flow for 3 periods

Period 1: Period 1 - Sildenafil

	Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil
STARTED	28
PK Analysis Set	28
Safety Set	28
COMPLETED	28
NOT COMPLETED	0

Period 2: Period 2 - LCZ696

	Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil
STARTED	28
PK Analysis Set	27
Safety Set	27
COMPLETED	27
NOT COMPLETED	1
Physician Decision	1

Period 3: Period 3 - LCZ696+Sildenafil

	Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil
STARTED	27
PK Analysis Set	27
Safety Set	27
COMPLETED	27
NOT COMPLETED	0

Baseline Characteristics

Hide Baseline Characteristics

Population Description

Explanation of how the number of participants for analysis was determined. Includes whether analysis was per protocol, intention to treat, or another method. Also provides relevant details such as imputation technique, as appropriate.
No text entered.

Reporting Groups

	Description
Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil	During Treatment Period 1, on study Day 1, participants received a single dose of sildenafil followed by a wash out on Day 2. In Period 2 (study Days 3-7), participants received LCZ696 once daily. In Period 3, on study Day 8, participants received LCZ696, co-administered at the same time with a single dose of sildenafil.

Baseline Measures

	Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil
Number of Participants [units: participants]	**28**
Age [units: Years] Mean (Standard Deviation)	**51.8 (8.5)**
Gender [units: Participants]	
Female	**0**
Male	**28**

Outcome Measures

Hide All Outcome Measures

1. Primary: Area Under the Plasma Concentration-time Curve From Time Zero to the End of the Dosing Interval (AUCtau) of LCZ696 Analytes [Time Frame: From pre-dose on day 1 until 12 hours post dose on day 8]

Measure Type	Primary

Measure Title	Area Under the Plasma Concentration-time Curve From Time Zero to the End of the Dosing Interval (AUCtau) of LCZ696 Analytes
Measure Description	The effect of co-administration of sildenafil on the pharmacokinetics of LCZ696 (analytes of LCZ696: AHU377, LBQ657 and valsartan) was assessed. Blood samples were collected at pre-dose and 0.5, 1, 1.5, 2, 3, 4, 6, 8, 12 hours post-dose from day 1 to day 7, 24 hours post-dose from day 7, and day 8 at 0.5, 1, 1.5, 2, 3, 4, 6, 8, 12 hours post-dose. AUC is a mathematically-derived value from all measurements. AUC is a measure of the area under the curve that is obtained from plotting the plasma concentration by time point. All time-points were used to derive the single PK parameters.
Time Frame	From pre-dose on day 1 until 12 hours post dose on day 8
Safety Issue	No

Population Description

Explanation of how the number of participants for analysis was determined. Includes whether analysis was per protocol, intention to treat, or another method. Also provides relevant details such as imputation technique, as appropriate.
PK Analysis Set (Period 3): This set included participants with evaluable PK data and without any protocol deviations which could impact the PK data.

Reporting Groups

	Description
Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil	During Treatment Period 1, on study Day 1, participants received a single dose of sildenafil followed by a wash out on Day 2. In Period 2 (study Days 3-7), participants received LCZ696 once daily. In Period 3, on study Day 8, participants received LCZ696, co-administered at the same time with a single dose of sildenafil.

Measured Values

	Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil
Number of Participants Analyzed [units: participants]	**27**

Area Under the Plasma Concentration-time Curve From Time Zero to the End of the Dosing Interval (AUCtau) of LCZ696 Analytes [units: h*ng/mL] Mean (Standard Deviation)	
AHU377	**3700 (912)**
LBQ657	**147000 (31000)**
valsartan	**23600 (9500)**

No statistical analysis provided for Area Under the Plasma Concentration-time Curve From Time Zero to the End of the Dosing Interval (AUCtau) of LCZ696 Analytes

2. Primary: Maximum Plasma Concentration Following Drug Administration at Steady State (Cmax,ss) of LCZ696 Analytes (AHU377, LBQ657 and Valsartan) [Time Frame: From pre-dose on day 1 until 12 hours post dose on day 8]

Measure Type	Primary
Measure Title	Maximum Plasma Concentration Following Drug Administration at Steady State (Cmax,ss) of LCZ696 Analytes (AHU377, LBQ657 and Valsartan)
Measure Description	The effect of co-administration of sildenafil on the pharmacokinetics of LCZ696 (analytes of LCZ696: AHU377, LBQ657 and valsartan) was assessed. Blood samples were collected at pre-dose and 0.5, 1, 1.5, 2, 3, 4, 6, 8, 12 hours post-dose from day 1 to day 7, 24 hours post-dose from day 7, and day 8 at 0.5, 1, 1.5, 2, 3, 4, 6, 8, 12 hours post-dose. Cmax is a mathematically-derived value from all measurements. Cmax is a measure of the area under the curve that is obtained from plotting the plasma concentration by time point. All time-points were used to derive the single PK parameters.
Time Frame	From pre-dose on day 1 until 12 hours post dose on day 8
Safety Issue	No

Population Description

Explanation of how the number of participants for analysis was determined. Includes whether analysis was per protocol, intention to treat, or another method. Also provides relevant details such as imputation technique, as appropriate.

PK Analysis Set (Period 3): This set included participants with evaluable PK data and without any protocol deviations which could impact the PK data.

Reporting Groups

	Description
Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil	During Treatment Period 1, on study Day 1, participants received a single dose of sildenafil followed by a wash out on Day 2. In Period 2 (study Days 3-7), participants received LCZ696 once daily. In Period 3, on study Day 8, participants received LCZ696, co-administered at the same time with a single dose of sildenafil.

Measured Values

	Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil
Number of Participants Analyzed [units: participants]	**27**
Maximum Plasma Concentration Following Drug Administration at Steady State (Cmax,ss) of LCZ696 Analytes (AHU377, LBQ657 and Valsartan) [units: ng/mL] Mean (Standard Deviation)	
AHU377	**2310 (1020)**
LBQ696	**14000 (2420)**
valsartan	**3350 (1480)**

No statistical analysis provided for Maximum Plasma Concentration Following Drug Administration at Steady State (Cmax,ss) of LCZ696 Analytes (AHU377, LBQ657 and Valsartan)

3. Primary: Minimum Plasma Concentration Following Drug Administration at Steady State (Cmin,ss) of LCZ696 Analytes (AHU377, LBQ696 and Valsartan) [Time Frame: From pre-dose on day 1 until 12 hours post dose on day 8]

Measure Type	Primary
Measure Title	Minimum Plasma Concentration Following Drug Administration at Steady State (Cmin,ss) of LCZ696 Analytes (AHU377, LBQ696 and Valsartan)
Measure Description	The effect of co-administration of sildenafil on the pharmacokinetics of LCZ696 (analytes of LCZ696: AHU377, LBQ657 and valsartan) was assessed. Blood samples were collected at pre-dose and 0.5, 1, 1.5, 2, 3, 4, 6, 8, 12 hours post-dose from day 1 to day 7, 24 hours post-dose from day 7, day 8 at 0.5, 1, 1.5, 2, 3, 4, 6, 8, 12 hours post-dose. Cmin is a mathematically-derived value from all measurements. Cmin is a measure of the area under the curve that is obtained from plotting the plasma concentration by time point. All time-points were used to derive the single PK parameters.
Time Frame	From pre-dose on day 1 until 12 hours post dose on day 8
Safety Issue	No

Population Description

Explanation of how the number of participants for analysis was determined. Includes whether analysis was per protocol, intention to treat, or another method. Also provides relevant details such as imputation technique, as appropriate.
PK Analysis Set (Period 3): This set included participants with evaluable PK data and without any protocol deviations which could impact the PK data.

Reporting Groups

	Description
Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil	During Treatment Period 1, on study Day 1, participants received a single dose of sildenafil followed by a wash out on Day 2. In Period 2 (study Days 3-7), participants received LCZ696 once daily. In Period 3, on study Day 8, participants received LCZ696, co-administered at the same time with a single dose of sildenafil.

Measured Values

	Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil

Number of Participants Analyzed [units: participants]	**27**
Minimum Plasma Concentration Following Drug Administration at Steady State (Cmin,ss) of LCZ696 Analytes (AHU377, LBQ696 and Valsartan) [units: ng/mL] Mean (Standard Deviation)	
AHU377	**0.0 (0.0)**
LBQ657	**2170 (733)**
valsartan	**197 (96.9)**

No statistical analysis provided for Minimum Plasma Concentration Following Drug Administration at Steady State (Cmin,ss) of LCZ696 Analytes (AHU377, LBQ696 and Valsartan)

4. Primary: Time to Reach the Maximum Concentration After Drug Administration (Tmax) of LCZ696 Analytes (AHU377, LBQ657 and Valsartan) [Time Frame: From pre-dose on day 1 until 12 hours post dose on day 8]

Measure Type	Primary
Measure Title	Time to Reach the Maximum Concentration After Drug Administration (Tmax) of LCZ696 Analytes (AHU377, LBQ657 and Valsartan)
Measure Description	The effect of co-administration of sildenafil on the pharmacokinetics of LCZ696 (analytes of LCZ696: AHU377, LBQ657 and valsartan) was assessed. Blood samples were collected at pre-dose and 0.5, 1, 1.5, 2, 3, 4, 6, 8, 12 hours post-dose from day 1 to day 7, 24 hours post-dose from day 7, day 8 at 0.5, 1, 1.5, 2, 3, 4, 6, 8, 12 hours post-dose. Tmax is a mathematically-derived value from all measurements. Tmax is a measure of the area under the curve that is obtained from plotting the plasma concentration by time point. All time-points were used to derive the single PK parameters.
Time Frame	From pre-dose on day 1 until 12 hours post dose on day 8
Safety Issue	No

Population Description

Explanation of how the number of participants for analysis was determined. Includes whether analysis was per protocol, intention to treat, or another method. Also provides relevant details such as imputation technique, as appropriate.
PK Analysis Set (Period 3): This set included participants with evaluable PK data and without any protocol deviations which could impact the PK data.

Reporting Groups

	Description
Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil	During Treatment Period 1, on study Day 1, participants received a single dose of sildenafil followed by a wash out on Day 2. In Period 2 (study Days 3-7), participants received LCZ696 once daily. In Period 3, on study Day 8, participants received LCZ696, co-administered at the same time with a single dose of sildenafil.

Measured Values

	Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil
Number of Participants Analyzed **[units: participants]**	**27**
Time to Reach the Maximum Concentration After Drug Administration (Tmax) of LCZ696 Analytes (AHU377, LBQ657 and Valsartan) **[units: hours]** **Median (Full Range)**	
AHU377	**1.00** **(0.500 to 4.00)**
LBQ657	**3.00** **(1.50 to 6.00)**
valsartan	**2.00** **(1.50 to 4.00)**

No statistical analysis provided for Time to Reach the Maximum Concentration After Drug Administration (Tmax) of LCZ696 Analytes (AHU377, LBQ657 and Valsartan)

5. Primary: Area Under the Plasma Concentration-time Curve From Time Zero to Infinity (AUCinf) of Sildenafil and N-desmethyl-sildenafil Analytes [Time Frame: From pre-dose on day 1 until 12 hours post dose on day 8]

Measure Type	Primary
Measure Title	Area Under the Plasma Concentration-time Curve From Time Zero to Infinity (AUCinf) of Sildenafil and N-desmethyl-sildenafil Analytes
Measure Description	The effect of co-administration of LCZ696 on the pharmacokinetics of Sildenafil and N-desmethyl-sildenafil was assessed. Blood samples were collected at pre-dose and 0.5, 1, 1.5, 2, 3, 4, 6, 8, 12 hours post-dose from day 1 to day 7, 24 hours post-dose from day 7, day 8 at 0.5, 1, 1.5, 2, 3, 4, 6, 8, 12 hours post-dose. AUC is a mathematically-derived value from all measurements. AUC is a measure of the area under the curve that is obtained from plotting the plasma concentration by time point. All time-points were used to derive the single PK parameters.
Time Frame	From pre-dose on day 1 until 12 hours post dose on day 8
Safety Issue	No

Population Description

Explanation of how the number of participants for analysis was determined. Includes whether analysis was per protocol, intention to treat, or another method. Also provides relevant details such as imputation technique, as appropriate.
PK Analysis Set (Period 3): This set included participants with evaluable PK data and without any protocol deviations which could impact the PK data.

Reporting Groups

	Description
Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil	During Treatment Period 1, on study Day 1, participants received a single dose of sildenafil followed by a wash out on Day 2. In Period 2 (study Days 3-7), participants received LCZ696 once daily. In Period 3, on study Day 8, participants received LCZ696, co-administered at the same time with a single dose of sildenafil.

Measured Values

	Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil
Number of Participants Analyzed [units: participants]	**27**
Area Under the Plasma Concentration-time Curve From Time Zero to Infinity (AUCinf) of Sildenafil and N-desmethyl-sildenafil Analytes [units: h*ng/mL] Mean (Standard Deviation)	
Sildenafil	**629 (303)**
N-desmethyl-sildenafil	**325 (143)**

No statistical analysis provided for Area Under the Plasma Concentration-time Curve From Time Zero to Infinity (AUCinf) of Sildenafil and N-desmethyl-sildenafil Analytes

6. Primary: Area Under the Plasma Concentration-time Curve From Time Zero to the Time of the Last Quantifiable Concentration (AUClast) of Sildenafil and N-desmethyl-sildenafil Analytes [Time Frame: From pre-dose on day 1 until 12 hours post dose on day 8]

Measure Type	Primary
Measure Title	Area Under the Plasma Concentration-time Curve From Time Zero to the Time of the Last Quantifiable Concentration (AUClast) of Sildenafil and N-desmethyl-sildenafil Analytes
Measure Description	The effect of co-administration of LCZ696 on the pharmacokinetics of Sildenafil and N-desmethyl-sildenafil was assessed. Blood samples were collected at pre-dose and 0.5, 1, 1.5, 2, 3, 4, 6, 8, 12 hours post-dose from day 1 to day 7, 24 hours post-dose from day 7, day 8 at 0.5, 1, 1.5, 2, 3, 4, 6, 8, 12 hours post-dose. AUC is a mathematically-derived value from all measurements. AUC is a measure of the area under the curve that is obtained from plotting the plasma concentration by time point. All time-points were used to derive the single PK parameters.
Time Frame	From pre-dose on day 1 until 12 hours post dose on day 8
Safety Issue	No

Population Description

Explanation of how the number of participants for analysis was determined. Includes whether analysis was per protocol, intention to treat, or another method. Also provides relevant details such as imputation technique, as appropriate.
PK Analysis Set (Period 3): This set included participants with evaluable PK data and without any protocol deviations which could impact the PK data.

Reporting Groups

	Description
Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil	During Treatment Period 1, on study Day 1, participants received a single dose of sildenafil followed by a wash out on Day 2. In Period 2 (study Days 3-7), participants received LCZ696 once daily. In Period 3, on study Day 8, participants received LCZ696, co-administered at the same time with a single dose of sildenafil.

Measured Values

	Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil
Number of Participants Analyzed **[units: participants]**	**27**
Area Under the Plasma Concentration-time Curve From Time Zero to the Time of the Last Quantifiable Concentration (AUClast) of Sildenafil and N-desmethyl-sildenafil Analytes **[units: h*ng/mL]** **Mean (Standard Deviation)**	
Sildenafil	**612 (297)**
N-desmethyl-sildenafil	**305 (133)**

No statistical analysis provided for Area Under the Plasma Concentration-time Curve From Time Zero to the Time of the Last Quantifiable Concentration (AUClast) of Sildenafil and N-desmethyl-sildenafil Analytes

7. Primary: Terminal Elimination Half-life (T1/2) of Sildenafil and N-desmethyl-sildenafil Analytes [Time Frame: From pre-dose on day 1 until 12 hours post dose on day 8]

Measure Type	Primary
Measure Title	Terminal Elimination Half-life (T1/2) of Sildenafil and N-desmethyl-sildenafil Analytes
Measure Description	The effect of co-administration of LCZ696 on the pharmacokinetics of Sildenafil and N-desmethyl-sildenafil was assessed. Blood samples were collected at pre-dose and 0.5, 1, 1.5, 2, 3, 4, 6, 8, 12 hours post-dose from day 1 to day 7, 24 hours post-dose from day 7, day 8 at 0.5, 1, 1.5, 2, 3, 4, 6, 8, 12 hours post-dose. T1/2 is a mathematically-derived value from all measurements. T1/2 is a measure of the area under the curve that is obtained from plotting the plasma concentration by time point. All time-points were used to derive the single PK parameters.
Time Frame	From pre-dose on day 1 until 12 hours post dose on day 8
Safety Issue	No

Population Description

Explanation of how the number of participants for analysis was determined. Includes whether analysis was per protocol, intention to treat, or another method. Also provides relevant details such as imputation technique, as appropriate.
PK Analysis Set (Period 3): This set included participants with evaluable PK data and without any protocol deviations which could impact the PK data.

Reporting Groups

	Description
Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil	During Treatment Period 1, on study Day 1, participants received a single dose of sildenafil followed by a wash out on Day 2. In Period 2 (study Days 3-7), participants received LCZ696 once daily. In Period 3, on study Day 8, participants received LCZ696, co-administered at the same time with a single dose of sildenafil.

Measured Values

	Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil
Number of Participants Analyzed [units: participants]	**27**
Terminal Elimination Half-life (T1/2) of Sildenafil and N-desmethyl-sildenafil Analytes [units: hours] Mean (Standard Deviation)	
Sildenafil	**3.84 (1.11)**
N-desmethyl-sildenafil	**6.20 (1.90)**

No statistical analysis provided for Terminal Elimination Half-life (T1/2) of Sildenafil and N-desmethyl-sildenafil Analytes

8. Primary: Maximum Plasma Concentration Following Drug Administration (Cmax) of Sildenafil and N-desmethyl-sildenafil Analytes [Time Frame: From pre-dose on day 1 until 12 hours post dose on day 8]

Measure Type	Primary
Measure Title	Maximum Plasma Concentration Following Drug Administration (Cmax) of Sildenafil and N-desmethyl-sildenafil Analytes
Measure Description	The effect of co-administration of LCZ696 on the pharmacokinetics of Sildenafil and N-desmethyl-sildenafil was assessed. Blood samples were collected at pre-dose and 0.5, 1, 1.5, 2, 3, 4, 6, 8, 12 hours post-dose from day 1 to day 7, 24 hours post-dose from day 7, day 8 at 0.5, 1, 1.5, 2, 3, 4, 6, 8, 12 hours post-dose. All time-points were used to mathematically derive the single PK parameter.
Time Frame	From pre-dose on day 1 until 12 hours post dose on day 8
Safety Issue	No

Population Description

Explanation of how the number of participants for analysis was determined. Includes whether analysis was per protocol, intention to treat, or

another method. Also provides relevant details such as imputation technique, as appropriate.
PK Analysis Set (Period 3): This set included participants with evaluable PK data and without any protocol deviations which could impact the PK data.

Reporting Groups

	Description
Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil	During Treatment Period 1, on study Day 1, participants received a single dose of sildenafil followed by a wash out on Day 2. In Period 2 (study Days 3-7), participants received LCZ696 once daily. In Period 3, on study Day 8, participants received LCZ696, co-administered at the same time with a single dose of sildenafil.

Measured Values

	Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil
Number of Participants Analyzed [units: participants]	**27**
Maximum Plasma Concentration Following Drug Administration (Cmax) of Sildenafil and N-desmethyl-sildenafil Analytes [units: ng/mL] Mean (Standard Deviation)	
Sildenafil	**189 (99.6)**
N-desmethyl-sildenafil	**84.6 (39.3)**

No statistical analysis provided for Maximum Plasma Concentration Following Drug Administration (Cmax) of Sildenafil and N-desmethyl-sildenafil Analytes

9. Primary: Time to Reach the Maximum Concentration After Drug Administration (Tmax) of Sildenafil and N-desmethyl-sildenafil Analytes [Time Frame: From pre-dose on day 1 until 12 hours post dose on day 8]

Measure Type	Primary
Measure Title	Time to Reach the Maximum Concentration After Drug Administration (Tmax) of Sildenafil and N-desmethyl-sildenafil Analytes
Measure Description	The effect of co-administration of LCZ696 on the pharmacokinetics of Sildenafil and N-desmethyl-sildenafil will be assessed. 8pre-dose and 0.5, 1, 1.5, 2, 3, 4, 6, 8, 12 hours post-dose from day 1 to day 7, 24 hours post-dose from day 7, day 8 at 0.5, 1, 1.5, 2, 3, 4, 6, 8, 12 hours post-dose. All time-points were used to mathematically derive the single PK parameter.
Time Frame	From pre-dose on day 1 until 12 hours post dose on day 8
Safety Issue	No

Population Description

Explanation of how the number of participants for analysis was determined. Includes whether analysis was per protocol, intention to treat, or another method. Also provides relevant details such as imputation technique, as appropriate.
PK Analysis Set (Period 3): This set included participants with evaluable PK data and without any protocol deviations which could impact the PK data.

Reporting Groups

	Description
Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil	During Treatment Period 1, on study Day 1, participants received a single dose of sildenafil followed by a wash out on Day 2. In Period 2 (study Days 3-7), participants received LCZ696 once daily. In Period 3, on study Day 8, participants received LCZ696, co-administered at the same time with a single dose of sildenafil.

Measured Values

	Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil
Number of Participants Analyzed [units: participants]	**27**

Time to Reach the Maximum Concentration After Drug Administration (Tmax) of Sildenafil and N-desmethyl-sildenafil Analytes **[units: hours]** **Median (Full Range)**	
Sildenafil	**1.00** **(0.500 to 3.00)**
N-desmethyl-sildenafil	**1.00** **(0.500 to 3.00)**

No statistical analysis provided for Time to Reach the Maximum Concentration After Drug Administration (Tmax) of Sildenafil and N-desmethyl-sildenafil Analytes

10. Secondary: Adverse Events, Serious Adverse Events and Deaths Were Monitored From Screening to End of Study [Time Frame: From the screening visit until 30 days past the final study assessment]

Measure Type	Secondary
Measure Title	Adverse Events, Serious Adverse Events and Deaths Were Monitored From Screening to End of Study
Measure Description	Number of patients with adverse events, serious adverse events and death
Time Frame	From the screening visit until 30 days past the final study assessment
Safety Issue	Yes

Population Description

Explanation of how the number of participants for analysis was determined. Includes whether analysis was per protocol, intention to treat, or another method. Also provides relevant details such as imputation technique, as appropriate.
Safety Analysis Set: This set included participants who received at least one dose of study drug.

Reporting Groups

	Description

Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil	During Treatment Period 1, on study Day 1, participants received a single dose of sildenafil followed by a wash out on Day 2. In Period 2 (study Days 3-7), participants received LCZ696 once daily. In Period 3, on study Day 8, participants received LCZ696, co-administered at the same time with a single dose of sildenafil.

Measured Values

	Period 1:Sildenafil;Period 2:LCZ696;Period 3:LCZ696+Sildenafil
Number of Participants Analyzed [units: participants]	**28**
Adverse Events, Serious Adverse Events and Deaths Were Monitored From Screening to End of Study [units: Participants]	
Adverse Events (Serious and non-serious)	**17**
Serious Adverse Events	**0**
Deaths	**0**

No statistical analysis provided for Adverse Events, Serious Adverse Events and Deaths Were Monitored From Screening to End of Study

Serious Adverse Events

Hide Serious Adverse Events

Time Frame	No text entered.
Additional Description	No text entered.

Reporting Groups

	Description
Period 1: Sildenafil	During Treatment Period 1, on study Day 1, participants received a single dose of sildenafil followed by wash out on Day 2.
Period 2: LCZ696	In Period 2 (study Days 3-7), participants received LCZ696 once daily.
Period 3: LCZ696 + Sildenafil	In Period 3, on study Day 8, participants received LCZ696 , co-administered at the same time with a single dose of sildenafil.

Serious Adverse Events

	Period 1: Sildenafil	Period 2: LCZ696	Period 3: LCZ696 + Sildenafil
Total, serious adverse events			
# participants affected / at risk	**0/28 (0.00%)**	**0/27 (0.00%)**	**0/27 (0.00%)**

Other Adverse Events

Hide Other Adverse Events

Time Frame	No text entered.
Additional Description	No text entered.

Frequency Threshold

Threshold above which other adverse events are reported	5%

Reporting Groups

	Description
Period 1: Sildenafil	During Treatment Period 1, on study Day 1, participants received a single dose of sildenafil followed by wash out on Day 2.
Period 2: LCZ696	In Period 2 (study Days 3-7), participants received LCZ696 once daily.

Period 3: LCZ696 + Sildenafil	In Period 3, on study Day 8, participants received LCZ696 , co-administered at the same time with a single dose of sildenafil.

Other Adverse Events

	Period 1: Sildenafil	Period 2: LCZ696	Period 3: LCZ696 + Sildenafil
Total, other (not including serious) adverse events			
# participants affected / at risk	**7/28 (25.00%)**	**5/27 (18.52%)**	**6/27 (22.22%)**
Eye disorders			
EYE IRRITATION † [1]			
# participants affected / at risk	**2/28 (7.14%)**	**0/27 (0.00%)**	**0/27 (0.00%)**
Gastrointestinal disorders			
DIARRHOEA † [1]			
# participants affected / at risk	**0/28 (0.00%)**	**3/27 (11.11%)**	**1/27 (3.70%)**
Nervous system disorders			
DIZZINESS † [1]			
# participants affected / at risk	**0/28 (0.00%)**	**2/27 (7.41%)**	**3/27 (11.11%)**
HEADACHE † [1]			
# participants affected / at risk	**3/28 (10.71%)**	**0/27 (0.00%)**	**2/27 (7.41%)**
Renal and urinary disorders			
POLLAKIURIA † [1]			
# participants affected / at risk	**0/28 (0.00%)**	**2/27 (7.41%)**	**0/27 (0.00%)**
Respiratory, thoracic and mediastinal disorders			
NASAL CONGESTION † [1]			
# participants affected / at risk	**2/28 (7.14%)**	**0/27 (0.00%)**	**0/27 (0.00%)**

† Events were collected by systematic assessment

1 Term from vocabulary, MedDRA

Limitations and Caveats

Hide Limitations and Caveats

Limitations of the study, such as early termination leading to small numbers of participants analyzed and technical problems with measurement leading to unreliable or uninterpretable data
No text entered.

More Information

Hide More Information

Certain Agreements:

Principal Investigators are **NOT** employed by the organization sponsoring the study.
There **IS** an agreement between Principal Investigators and the Sponsor (or its agents) that restricts the PI's rights to discuss or publish trial results after the trial is completed.
The agreement is: ☐ The only disclosure restriction on the PI is that the sponsor can review results communications prior to public release and can embargo communications regarding trial results for a period that is **less than or equal to 60 days**. The sponsor cannot require changes to the communication and cannot extend the embargo. ☐ The only disclosure restriction on the PI is that the sponsor can review results communications prior to public release and can embargo communications regarding trial results for a period that is **more than 60 days but less than or equal to 180 days**. The sponsor cannot require changes to the communication and cannot extend the embargo. ☑ Other disclosure agreement that restricts the right of the PI to discuss or publish trial results after the trial is completed. **Restriction Description:** The terms and conditions of Novartis' agreements with its investigators may vary. However, Novartis does not prohibit any investigator from publishing. Any publications from a single-site are postponed until the publication of the pooled data (i.e., data from all sites) in the clinical trial or disclosure of trial results in their entirety.

Results Point of Contact:

Name/Title: Study Director
Organization: Novartis Pharmaceuticals
phone: 862-778-8300

No publications provided

Responsible Party:	Novartis (Novartis Pharmaceuticals)
ClinicalTrials.gov Identifier:	NCT01601470 History of Changes
Other Study ID Numbers:	**CLCZ696B2225**
	2012-001632-64 (EudraCT Number)
Study First Received:	May 16, 2012
Results First Received:	July 11, 2015
Last Updated:	October 6, 2015
Health Authority:	Germany: Federal Institute for Drugs and Medicinal Products