ClinicalTrials.gov
A service of the U.S. National Institutes of Health

Trial record **1 of 1** for: CSPH100ADE01

Previous Study | Return to List | Next Study

# Safety and Efficacy of Aliskiren + Hydrochlorothiazide (± Amlodipine 5 mg) in Patients With Moderate Hypertension (AMAZING)

**This study has been completed.**

**Sponsor:**
Novartis

**Information provided by:**
Novartis

**ClinicalTrials.gov Identifier:**
NCT00867490

First received: March 20, 2009
Last updated: May 4, 2011
Last verified: May 2011
History of Changes

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

Results First Received: January 7, 2011

| | |
|---|---|
| **Study Type:** | Interventional |
| **Study Design:** | Allocation: Non-Randomized; Endpoint Classification: Safety/Efficacy Study;<br>Intervention Model: Single Group Assignment; Masking: Open Label;<br>Primary Purpose: Treatment |
| **Condition:** | Hypertension |
| **Interventions:** | Drug: Candesartan+HCTZ - Phase 1<br>Drug: Aliskiren+HCTZ - Phase 2<br>Drug: Aliskiren+HCTZ+amlodipine - Phase 3 |

## 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 |
|---|---|
| **Candesartan+HCTZ, Aliskiren+HCTZ, Aliskiren+HCTZ+Amlodipine** | 4 weeks treatment with candesartan 32 mg plus hydrochlorothiazide (HCTZ) 25 mg (Phase 1) followed by 4 weeks treatment with aliskiren 300 mg plus HCTZ 25 mg (Phase 2) in patients with uncontrolled diastolic blood pressure (BP) in Phase 1 followed by (optional) 4 weeks treatment with aliskiren 300 mg plus HCTZ 25 mg plus amlodipine 5 mg (Phase 3) in patients with uncontrolled systolic or diastolic BP in Phase 2. |

### Participant Flow for 3 periods

**Period 1: Phase 1 - Candesartan+HCTZ**

| | Candesartan+HCTZ, Aliskiren+HCTZ, Aliskiren+HCTZ+Amlodipine |
|---|---|
| STARTED | 186 |
| COMPLETED | 176 |
| NOT COMPLETED | 10 |
| Adverse Event | 5 |
| Withdrawal by Subject | 4 |
| Administrative Problems | 1 |

**Period 2: Phase 2 - Aliskiren+HCTZ**

| | Candesartan+HCTZ, Aliskiren+HCTZ, Aliskiren+HCTZ+Amlodipine |
|---|---|
| STARTED | 123 [1] |
| COMPLETED | 120 |
| NOT COMPLETED | 3 |
| Adverse Event | 2 |
| Withdrawal by Subject | 1 |

[1] Only patients with mean sitting diastolic BP ≥ 90 mmHg at the end of Phase 1 entered this phase.

**Period 3: Phase 3 - Aliskiren+HCTZ+Amlodipine**

| | Candesartan+HCTZ, Aliskiren+HCTZ, Aliskiren+HCTZ+Amlodipine |
|---|---|
| STARTED | 61 [1] |
| COMPLETED | 61 |
| NOT COMPLETED | 0 |

[1] The first 60 patients with systolic BP ≥ 140 mmHg or diastolic BP ≥ 90 mmHg entered this phase.

## 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 |
|---|---|
| Candesartan+HCTZ, Aliskiren+HCTZ, Aliskiren+HCTZ+Amlodipine | 4 weeks treatment with candesartan 32 mg plus hydrochlorothiazide (HCTZ) 25 mg (Phase 1) followed by 4 weeks treatment with aliskiren 300 mg plus HCTZ 25 mg (Phase 2) in patients with uncontrolled diastolic blood pressure (BP) in Phase 1 followed by (optional) 4 weeks treatment with aliskiren 300 mg plus HCTZ 25 mg plus amlodipine 5 mg (Phase 3) in patients with uncontrolled systolic or diastolic BP in Phase 2. |

**Baseline Measures**

| | Candesartan+HCTZ, Aliskiren+HCTZ, Aliskiren+HCTZ+Amlodipine |
|---|---|
| Number of Participants [units: participants] | 186 |

| | |
|---|---|
| **Age**<br>**[units: years]**<br>**Mean (Standard Deviation)** | |
| **Phase I - Candesartan+HCTZ** | **56.2 (10.62)** |
| **Phase II - Aliskiren+HCTZ** | **57.4 (10.87)** |
| **Phase III - Aliskiren+HCTZ+amlodipine** | **58.9 (10.31)** |
| **Gender, Customized [1]**<br>**[units: Participants]** | |
| **Phase I - Candesartan+HCTZ** | **78** |
| **Phase II - Aliskiren+HCTZ** | **48** |
| **Phase III - Aliskiren+HCTZ+amlodipine** | **24** |
| **Gender, Customized [2]**<br>**[units: Participants]** | |
| **Phase I - Candesartan+HCTZ** | **108** |
| **Phase II - Aliskiren+HCTZ** | **75** |
| **Phase III - Aliskiren+HCTZ+amlodipine** | **37** |

[1] Female
[2] Male

## Outcome Measures

Hide All Outcome Measures

1. Primary: Change in Mean Sitting Diastolic Blood Pressure (msDBP) During the Core Phase of the Study [ Time Frame: Baseline Phase 2 to end of Phase 2 ]

| | |
|---|---|
| **Measure Type** | Primary |
| **Measure Title** | Change in Mean Sitting Diastolic Blood Pressure (msDBP) During the Core Phase of the Study |
| **Measure Description** | The arm in which the highest sitting diastolic pressures were found at study entry was the arm used for all subsequent readings. A calibrated sphygmomanometer and appropriate size cuff were used to measure arterial sitting blood pressure (BP) at trough with the arm supported at the level of the heart. At each study visit, after having the patient in a sitting position for at least 5 minutes, systolic/diastolic blood pressure were measured 3 times at 1-2 minute intervals. A mean was calculated from the 3 measurements. A negative change indicates improvement. |
| **Time Frame** | Baseline Phase 2 to end of Phase 2 |
| **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.** |
| Intent-to-treat population (ITT): All patients who took at least one dose of aliskiren plus HCTZ who had at least one primary efficacy parameter evaluation. Patients who dropped out were included in the ITT population if there was any BP measurement available; their last available blood pressure measurement was used for the analysis. |

**Reporting Groups**

| | **Description** |
|---|---|
| **Phase 2 - Aliskiren+HCTZ** | Patients with uncontrolled mean sitting diastolic BP (msDBP ≥ 90 mm Hg) at the end of Phase 1 were treated for 4 weeks with aliskiren 300 mg plus hydrochlorothiazide (HCTZ) 25 mg in a single tablet taken orally with water in the morning between 7 and 10 am. |

**Measured Values**

| | Phase 2 - Aliskiren+HCTZ |
|---|---|
| **Number of Participants Analyzed [units: participants]** | **123** |
| **Change in Mean Sitting Diastolic Blood Pressure (msDBP) During the Core Phase of the Study [units: mmHg] Mean (95% Confidence Interval)** | **-3.12 (-4.29 to -1.95)** |

**No statistical analysis provided for Change in Mean Sitting Diastolic Blood Pressure (msDBP) During the Core Phase of the Study**

2. Primary: Change in Mean Sitting Diastolic Blood Pressure (msDBP) During the Extension Phase of the Study [ Time Frame: Baseline Phase 3 to end of Phase 3 ]

| | |
|---|---|
| **Measure Type** | Primary |
| **Measure Title** | Change in Mean Sitting Diastolic Blood Pressure (msDBP) During the Extension Phase of the Study |
| **Measure Description** | The arm in which the highest sitting diastolic pressures were found at study entry was the arm used for all subsequent readings. A calibrated sphygmomanometer and appropriate size cuff were used to measure arterial sitting blood pressure (BP) at trough with the arm supported at the level of the heart. At each study visit, after having the patient in a sitting position for at least 5 minutes, systolic/diastolic blood pressure were measured 3 times at 1-2 minute intervals. A mean was calculated from the 3 measurements. A negative change indicates improvement. |
| **Time Frame** | Baseline Phase 3 to end of Phase 3 |
| **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.** |
| Safety population: All patients who took at least one dose of aliskiren 300 mg plus HCTZ 25 mg plus amlodipine 5 mg. |

**Reporting Groups**

| | Description |
|---|---|
| **Phase III - Aliskiren+HCTZ+Amlodipine** | The first 60 patients with uncontrolled mean sitting systolic or diastolic blood pressure (msDBP ≥ 90 mm Hg and/or msSBP ≥ 140 mm Hg) at the end of Phase 2 were offered a 4 week treatment extension with aliskiren 300 mg plus hydrochlorothiazide (HCTZ) 25 mg in a single tablet plus amlodipine 5 mg tablet. |

**Measured Values**

| | Phase III - Aliskiren+HCTZ+Amlodipine |
|---|---|
| **Number of Participants Analyzed [units: participants]** | **61** |
| **Change in Mean Sitting Diastolic Blood Pressure (msDBP) During the Extension Phase of the Study [units: mmHg] Mean (95% Confidence Interval)** | **-5.87 (-7.48 to -4.26)** |

**No statistical analysis provided for Change in Mean Sitting Diastolic Blood Pressure (msDBP) During the Extension Phase of the Study**

3. Secondary: Change in Mean Sitting Systolic Blood Pressure (msSBP) During the Core Phase of the Study [ Time Frame: Baseline Phase 2 to end of Phase 2 ]

| | |
|---|---|
| **Measure Type** | Secondary |
| **Measure Title** | Change in Mean Sitting Systolic Blood Pressure (msSBP) During the Core Phase of the Study |
| **Measure Description** | The arm in which the highest sitting diastolic pressures were found at study entry was the arm used for all subsequent readings. A calibrated sphygmomanometer and appropriate size cuff were used to measure arterial sitting blood pressure (BP) at trough with the arm supported at the level of the heart. At each study visit, after having the patient in a sitting position for at least 5 minutes, systolic/diastolic blood pressure were measured 3 times at 1-2 minute intervals. A mean was calculated from the 3 measurements. A negative change indicates improvement. |
| **Time Frame** | Baseline Phase 2 to end of Phase 2 |
| **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.** |
| Intent-to-treat population (ITT): All patients who took at least one dose of aliskiren plus HCTZ who had at least one primary efficacy parameter evaluation. Patients who dropped out were included in the ITT population if there was any BP measurement available; their last available blood pressure measurement was used for the analysis. |

**Reporting Groups**

| | **Description** |
|---|---|
| **Phase 2 - Aliskiren+HCTZ** | Patients with uncontrolled mean sitting diastolic BP (msDBP ≥ 90 mm Hg) at the end of Phase 1 were treated for 4 weeks with aliskiren 300 mg plus hydrochlorothiazide (HCTZ) 25 mg in a single tablet taken orally with water in the morning between 7 and 10 am. |

**Measured Values**

| | **Phase 2 - Aliskiren+HCTZ** |
|---|---|
| **Number of Participants Analyzed [units: participants]** | **123** |
| **Change in Mean Sitting Systolic Blood Pressure (msSBP) During the Core Phase of the Study [units: mmHg] Mean (95% Confidence Interval)** | **-2.81 (-4.81 to -0.81)** |

**No statistical analysis provided for Change in Mean Sitting Systolic Blood Pressure (msSBP) During the Core Phase of the Study**

4. Secondary: Change in Sitting Pulse Pressure During the Core Phase of the Study [ Time Frame: Baseline Phase 2 to end of Phase 2 ]

| | |
|---|---|
| **Measure Type** | Secondary |
| **Measure Title** | Change in Sitting Pulse Pressure During the Core Phase of the Study |
| **Measure Description** | Pulse pressure is systolic pressure (SP) minus diastolic pressure (DP). The arm in which the highest sitting DPs were found at study entry was the arm used for all subsequent readings. A calibrated sphygmomanometer and appropriate size cuff were used to measure arterial sitting blood pressure (BP) at trough with the arm supported at the level of the heart. At each study visit, after having the patient in a sitting position for at least 5 minutes, SP and DP were measured 3 times at 1-2 minute intervals. A mean was calculated from the 3 measurements. A negative change indicates improvement. |
| **Time Frame** | Baseline Phase 2 to end of Phase 2 |
| **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.** |
| Intent-to-treat population (ITT): All patients who took at least one dose of aliskiren plus HCTZ who had at least one primary efficacy parameter evaluation. Patients who dropped out were included in the ITT population if there was any BP measurement available; their last |

available blood pressure measurement was used for the analysis.

**Reporting Groups**

| | Description |
|---|---|
| **Phase 2 - Aliskiren+HCTZ** | Patients with uncontrolled mean sitting diastolic BP (msDBP ≥ 90 mm Hg) at the end of Phase 1 were treated for 4 weeks with aliskiren 300 mg plus hydrochlorothiazide (HCTZ) 25 mg in a single tablet taken orally with water in the morning between 7 and 10 am. |

**Measured Values**

| | Phase 2 - Aliskiren+HCTZ |
|---|---|
| **Number of Participants Analyzed [units: participants]** | **123** |
| **Change in Sitting Pulse Pressure During the Core Phase of the Study [units: mmHg] Mean (95% Confidence Interval)** | **0.31 (-1.39 to 2.01)** |

**No statistical analysis provided for Change in Sitting Pulse Pressure During the Core Phase of the Study**

5. Secondary: Change in Sitting Pulse Rate During the Core Phase of the Study [ Time Frame: Baseline Phase 2 to end of Phase 2 ]

| | |
|---|---|
| **Measure Type** | Secondary |
| **Measure Title** | Change in Sitting Pulse Rate During the Core Phase of the Study |
| **Measure Description** | Pulse rate was measured once for 30 seconds just prior to blood pressure measurements in the sitting position. |
| **Time Frame** | Baseline Phase 2 to end of Phase 2 |
| **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.** |
| Intent-to-treat population (ITT): All patients who took at least one dose of aliskiren plus HCTZ who had at least one primary efficacy parameter evaluation. Patients who dropped out were included in the ITT population if there was any BP measurement available; their last available blood pressure measurement was used for the analysis. |

**Reporting Groups**

| | Description |
|---|---|
| **Phase 2 - Aliskiren+HCTZ** | Patients with uncontrolled mean sitting diastolic BP (msDBP ≥ 90 mm Hg) at the end of Phase 1 were treated for 4 weeks with aliskiren 300 mg plus hydrochlorothiazide (HCTZ) 25 mg in a single tablet taken orally with water in the morning between 7 and 10 am. |

**Measured Values**

| | Phase 2 - Aliskiren+HCTZ |
|---|---|
| **Number of Participants Analyzed [units: participants]** | **123** |
| **Change in Sitting Pulse Rate During the Core Phase of the Study [units: BPM (beats per minute)] Mean (95% Confidence Interval)** | **0.27 (-1.15 to 1.69)** |

**No statistical analysis provided for Change in Sitting Pulse Rate During the Core Phase of the Study**

6. Secondary: Percentage of Patients Who Achieved Normalized Blood Pressure During the Core Phase of the Study [ Time Frame: Baseline Phase 2 to end of Phase 2 ]

| | |
|---|---|
| **Measure Type** | Secondary |
| **Measure Title** | Percentage of Patients Who Achieved Normalized Blood Pressure During the Core Phase of the Study |
| **Measure Description** | Normalized blood pressure was defined as a msSBP < 140 mmHg and/or a msDBP < 90 mmHg. |
| **Time Frame** | Baseline Phase 2 to end of Phase 2 |
| **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.** |
| Intent-to-treat population (ITT): All patients who took at least one dose of aliskiren plus HCTZ who had at least one primary efficacy parameter evaluation. Patients who dropped out were included in the ITT population if there was any BP measurement available; their last available blood pressure measurement was used for the analysis. |

**Reporting Groups**

| | **Description** |
|---|---|
| **Phase 2 - Aliskiren+HCTZ** | Patients with uncontrolled mean sitting diastolic BP (msDBP ≥ 90 mm Hg) at the end of Phase 1 were treated for 4 weeks with aliskiren 300 mg plus hydrochlorothiazide (HCTZ) 25 mg in a single tablet taken orally with water in the morning between 7 and 10 am. |

**Measured Values**

| | **Phase 2 - Aliskiren+HCTZ** |
|---|---|
| **Number of Participants Analyzed [units: participants]** | **123** |
| **Percentage of Patients Who Achieved Normalized Blood Pressure During the Core Phase of the Study [units: Percentage of patients]** | |
| **msSBP < 140 mmHg** | **37.4** |
| **msDBP < 90 mmHg** | **33.3** |

**No statistical analysis provided for Percentage of Patients Who Achieved Normalized Blood Pressure During the Core Phase of the Study**

7. Secondary: Percentage of Patients Who Achieved a Protocol-defined Blood Pressure Response During the Core Phase of the Study [ Time Frame: Baseline Phase 2 to end of Phase 2 ]

| | |
|---|---|
| **Measure Type** | Secondary |
| **Measure Title** | Percentage of Patients Who Achieved a Protocol-defined Blood Pressure Response During the Core Phase of the Study |
| **Measure Description** | Blood pressure response was defined as msSBP < 140 mmHg or a 20 mmHg decrease in msSBP at the end of Phase 2 compared to Baseline in Phase 2 or a msDBP < 90 mmHg or a 10 mmHg decrease in msDBP at the end of Phase 2 compared to Baseline in Phase 2. |
| **Time Frame** | Baseline Phase 2 to end of Phase 2 |
| **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.** |
| Intent-to-treat population (ITT): All patients who took at least one dose of aliskiren plus HCTZ who had at least one primary efficacy |

parameter evaluation. Patients who dropped out were included in the ITT population if there was any BP measurement available; their last available blood pressure measurement was used for the analysis.

**Reporting Groups**

| | Description |
|---|---|
| **Phase 2 - Aliskiren+HCTZ** | Patients with uncontrolled mean sitting diastolic BP (msDBP ≥ 90 mm Hg) at the end of Phase 1 were treated for 4 weeks with aliskiren 300 mg plus hydrochlorothiazide (HCTZ) 25 mg in a single tablet taken orally with water in the morning between 7 and 10 am. |

**Measured Values**

| | Phase 2 - Aliskiren+HCTZ |
|---|---|
| **Number of Participants Analyzed [units: participants]** | **123** |
| **Percentage of Patients Who Achieved a Protocol-defined Blood Pressure Response During the Core Phase of the Study [units: Percentage of patients]** | |
| **msSBP response** | **37.4** |
| **msDBP response** | **34.1** |

**No statistical analysis provided for Percentage of Patients Who Achieved a Protocol-defined Blood Pressure Response During the Core Phase of the Study**

8. Secondary: Change in Mean Sitting Systolic Blood Pressure (msSBP) During the Extension Phase of the Study [ Time Frame: Baseline Phase 3 to end of Phase 3 ]

| | |
|---|---|
| **Measure Type** | Secondary |
| **Measure Title** | Change in Mean Sitting Systolic Blood Pressure (msSBP) During the Extension Phase of the Study |
| **Measure Description** | The arm in which the highest sitting diastolic pressures were found at study entry was the arm used for all subsequent readings. A calibrated sphygmomanometer and appropriate size cuff were used to measure arterial sitting blood pressure (BP) at trough with the arm supported at the level of the heart. At each study visit, after having the patient in a sitting position for at least 5 minutes, systolic/diastolic blood pressure were measured 3 times at 1-2 minute intervals. A mean was calculated from the 3 measurements. A negative change indicates improvement. |
| **Time Frame** | Baseline Phase 3 to end of Phase 3 |
| **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.** |
| Safety population: All patients who took at least one dose of aliskiren 300 mg plus HCTZ 25 mg plus amlodipine 5 mg. |

**Reporting Groups**

| | Description |
|---|---|
| **Phase III - Aliskiren+HCTZ+Amlodipine** | The first 60 patients with uncontrolled mean sitting systolic or diastolic blood pressure (msDBP ≥ 90 mm Hg and/or msSBP ≥ 140 mm Hg) at the end of Phase 2 were offered a 4 week treatment extension with aliskiren 300 mg plus hydrochlorothiazide (HCTZ) 25 mg in a single tablet plus amlodipine 5 mg tablet. |

**Measured Values**

| | Phase III - Aliskiren+HCTZ+Amlodipine |
|---|---|

| | |
|---|---|
| **Number of Participants Analyzed [units: participants]** | **61** |
| **Change in Mean Sitting Systolic Blood Pressure (msSBP) During the Extension Phase of the Study [units: mmHg] Mean (95% Confidence Interval)** | **-9.20 (-11.86 to -6.54)** |

**No statistical analysis provided for Change in Mean Sitting Systolic Blood Pressure (msSBP) During the Extension Phase of the Study**

9. Secondary: Change in Sitting Pulse Pressure During the Extension Phase of the Study [ Time Frame: Baseline Phase 3 to end of Phase 3 ]

| | |
|---|---|
| **Measure Type** | Secondary |
| **Measure Title** | Change in Sitting Pulse Pressure During the Extension Phase of the Study |
| **Measure Description** | Pulse pressure is systolic pressure (SP) minus diastolic pressure (DP). The arm in which the highest sitting DPs were found at study entry was the arm used for all subsequent readings. A calibrated sphygmomanometer and appropriate size cuff were used to measure arterial sitting blood pressure (BP) at trough with the arm supported at the level of the heart. At each study visit, after having the patient in a sitting position for at least 5 minutes, SP and DP were measured 3 times at 1-2 minute intervals. A mean was calculated from the 3 measurements. A negative change indicates improvement. |
| **Time Frame** | Baseline Phase 3 to end of Phase 3 |
| **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.** |
| Safety population: All patients who took at least one dose of aliskiren 300 mg plus HCTZ 25 mg plus amlodipine 5 mg. |

**Reporting Groups**

| | **Description** |
|---|---|
| **Phase III - Aliskiren+HCTZ+Amlodipine** | The first 60 patients with uncontrolled mean sitting systolic or diastolic blood pressure (msDBP ≥ 90 mm Hg and/or msSBP ≥ 140 mm Hg) at the end of Phase 2 were offered a 4 week treatment extension with aliskiren 300 mg plus hydrochlorothiazide (HCTZ) 25 mg in a single tablet plus amlodipine 5 mg tablet. |

**Measured Values**

| | **Phase III - Aliskiren+HCTZ+Amlodipine** |
|---|---|
| **Number of Participants Analyzed [units: participants]** | **61** |
| **Change in Sitting Pulse Pressure During the Extension Phase of the Study [units: mmHg] Mean (95% Confidence Interval)** | **-3.33 (-5.40 to -1.27)** |

**No statistical analysis provided for Change in Sitting Pulse Pressure During the Extension Phase of the Study**

10. Secondary: Change in Sitting Pulse Rate During the Extension Phase of the Study [ Time Frame: Baseline Phase 3 to end of Phase 3 ]

| | |
|---|---|
| **Measure Type** | Secondary |
| **Measure Title** | Change in Sitting Pulse Rate During the Extension Phase of the Study |
| **Measure Description** | Pulse rate was measured once for 30 seconds just prior to blood pressure measurements in the sitting position. |

| | |
|---|---|
| **Time Frame** | Baseline Phase 3 to end of Phase 3 |
| **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.** |
| Safety population: All patients who took at least one dose of aliskiren 300 mg plus HCTZ 25 mg plus amlodipine 5 mg. |

**Reporting Groups**

| | **Description** |
|---|---|
| **Phase III - Aliskiren+HCTZ+Amlodipine** | The first 60 patients with uncontrolled mean sitting systolic or diastolic blood pressure (msDBP ≥ 90 mm Hg and/or msSBP ≥ 140 mm Hg) at the end of Phase 2 were offered a 4 week treatment extension with aliskiren 300 mg plus hydrochlorothiazide (HCTZ) 25 mg in a single tablet plus amlodipine 5 mg tablet. |

**Measured Values**

| | **Phase III - Aliskiren+HCTZ+Amlodipine** |
|---|---|
| **Number of Participants Analyzed [units: participants]** | **61** |
| **Change in Sitting Pulse Rate During the Extension Phase of the Study [units: BPM (beats per minute)] Mean (95% Confidence Interval)** | **0.03 (-1.82 to 1.89)** |

**No statistical analysis provided for Change in Sitting Pulse Rate During the Extension Phase of the Study**

11. Secondary: Percentage of Patients Who Achieved Normalized Blood Pressure During the Core Phase of the Study [ Time Frame: Baseline Phase 3 to end of Phase 3 ]

| | |
|---|---|
| **Measure Type** | Secondary |
| **Measure Title** | Percentage of Patients Who Achieved Normalized Blood Pressure During the Core Phase of the Study |
| **Measure Description** | Normalized was defined as a msSBP < 140 mm Hg and/or a msDBP < 90 mm Hg. |
| **Time Frame** | Baseline Phase 3 to end of Phase 3 |
| **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.** |
| Safety population: All patients who took at least one dose of aliskiren 300 mg plus HCTZ 25 mg plus amlodipine 5 mg. |

**Reporting Groups**

| | **Description** |
|---|---|
| **Phase III - Aliskiren+HCTZ+Amlodipine** | The first 60 patients with uncontrolled mean sitting systolic or diastolic blood pressure (msDBP ≥ 90 mm Hg and/or msSBP ≥ 140 mm Hg) at the end of Phase 2 were offered a 4 week treatment extension with aliskiren 300 mg plus hydrochlorothiazide (HCTZ) 25 mg in a single tablet plus amlodipine 5 mg tablet. |

**Measured Values**

| | **Phase III - Aliskiren+HCTZ+Amlodipine** |
|---|---|
| **Number of Participants Analyzed** | |

| | |
|---|---|
| **[units: participants]** | **61** |
| **Percentage of Patients Who Achieved Normalized Blood Pressure During the Core Phase of the Study [units: Percentage of patients]** | |
| **msSBP < 140 mmHg** | **54.1** |
| **msDBP < 90 mmHg** | **44.3** |

**No statistical analysis provided for Percentage of Patients Who Achieved Normalized Blood Pressure During the Core Phase of the Study**

12. Secondary: Percentage of Patients Who Achieved a Protocol-defined Blood Pressure Response During the Core Phase of the Study [ Time Frame: Baseline Phase 3 to end of Phase 3 ]

| | |
|---|---|
| **Measure Type** | Secondary |
| **Measure Title** | Percentage of Patients Who Achieved a Protocol-defined Blood Pressure Response During the Core Phase of the Study |
| **Measure Description** | Blood pressure response was defined as msSBP < 140 mmHg or a 20 mmHg decrease in msSBP at the end of Phase 2 compared to Baseline in Phase 2 or a msDBP < 90 mmHg or a 10 mmHg decrease in msDBP at the end of Phase 2 compared to Baseline in Phase 2. |
| **Time Frame** | Baseline Phase 3 to end of Phase 3 |
| **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.** |
| Safety population: All patients who took at least one dose of aliskiren 300 mg plus HCTZ 25 mg plus amlodipine 5 mg. |

**Reporting Groups**

| | **Description** |
|---|---|
| **Phase III - Aliskiren+HCTZ+Amlodipine** | The first 60 patients with uncontrolled mean sitting systolic or diastolic blood pressure (msDBP ≥ 90 mm Hg and/or msSBP ≥ 140 mm Hg) at the end of Phase 2 were offered a 4 week treatment extension with aliskiren 300 mg plus hydrochlorothiazide (HCTZ) 25 mg in a single tablet plus amlodipine 5 mg tablet. |

**Measured Values**

| | **Phase III - Aliskiren+HCTZ+Amlodipine** |
|---|---|
| **Number of Participants Analyzed [units: participants]** | **61** |
| **Percentage of Patients Who Achieved a Protocol-defined Blood Pressure Response During the Core Phase of the Study [units: Percentage of patients]** | |
| **msSBP response** | **54.1** |
| **msDBP response** | **47.5** |

**No statistical analysis provided for Percentage of Patients Who Achieved a Protocol-defined Blood Pressure Response During the Core Phase of the Study**

## Serious Adverse Events

Hide Serious Adverse Events

| | |
|---|---|
| **Time Frame** | No text entered. |
| **Additional Description** | No text entered. |

**Reporting Groups**

| | Description |
|---|---|
| **Phase 1 - Candesartan+HCTZ** | 4 weeks treatment with candesartan 32 mg (two 16 mg tablets) plus hydrochlorothiazide (HCTZ) 25 mg (two 12.5 mg tablets) taken orally with water in the morning between 7 and 10 am. |
| **Phase 2 - Aliskiren+HCTZ** | Patients with uncontrolled mean sitting diastolic BP (msDBP ≥ 90 mm Hg) at the end of Phase 1 were treated for 4 weeks with aliskiren 300 mg plus hydrochlorothiazide (HCTZ) 25 mg in a single tablet taken orally with water in the morning between 7 and 10 am. |
| **Phase 3 - Aliskiren+HCTZ+Amlodipine** | The first 60 patients with uncontrolled mean sitting systolic or diastolic blood pressure (msDBP ≥ 90 mm Hg and/or msSBP ≥ 140 mm Hg) at the end of Phase 2 were offered a 4 week treatment extension with aliskiren 300 mg plus hydrochlorothiazide (HCTZ) 25 mg in a single tablet plus amlodipine 5 mg tablet taken orally with water in the morning between 7 and 10 am. |

**Serious Adverse Events**

| | Phase 1 - Candesartan+HCTZ | Phase 2 - Aliskiren+HCTZ | Phase 3 - Aliskiren+HCTZ+Amlodipine |
|---|---|---|---|
| **Total, serious adverse events** | | | |
| **# participants affected / at risk** | **1/186 (0.54%)** | **2/123 (1.63%)** | **0/61 (0.00%)** |
| **Cardiac disorders** | | | |
| **Acute myocardial infarction † 1** | | | |
| **# participants affected / at risk** | **1/186 (0.54%)** | **0/123 (0.00%)** | **0/61 (0.00%)** |
| **Gastrointestinal disorders** | | | |
| **Colitis ischaemic † 1** | | | |
| **# participants affected / at risk** | **0/186 (0.00%)** | **1/123 (0.81%)** | **0/61 (0.00%)** |
| **Metabolism and nutrition disorders** | | | |
| **Diabetes mellitus † 1** | | | |
| **# participants affected / at risk** | **0/186 (0.00%)** | **1/123 (0.81%)** | **0/61 (0.00%)** |

† Events were collected by systematic assessment
1 Term from vocabulary, MedDRA

## 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 |
|---|---|

| | |
|---|---|
| **Phase 1 - Candesartan+HCTZ** | 4 weeks treatment with candesartan 32 mg (two 16 mg tablets) plus hydrochlorothiazide (HCTZ) 25 mg (two 12.5 mg tablets) taken orally with water in the morning between 7 and 10 am. |
| **Phase 2 - Aliskiren+HCTZ** | Patients with uncontrolled mean sitting diastolic BP (msDBP ≥ 90 mm Hg) at the end of Phase 1 were treated for 4 weeks with aliskiren 300 mg plus hydrochlorothiazide (HCTZ) 25 mg in a single tablet taken orally with water in the morning between 7 and 10 am. |
| **Phase 3 - Aliskiren+HCTZ+Amlodipine** | The first 60 patients with uncontrolled mean sitting systolic or diastolic blood pressure (msDBP ≥ 90 mm Hg and/or msSBP ≥ 140 mm Hg) at the end of Phase 2 were offered a 4 week treatment extension with aliskiren 300 mg plus hydrochlorothiazide (HCTZ) 25 mg in a single tablet plus amlodipine 5 mg tablet taken orally with water in the morning between 7 and 10 am. |

### Other Adverse Events

| | Phase 1 - Candesartan+HCTZ | Phase 2 - Aliskiren+HCTZ | Phase 3 - Aliskiren+HCTZ+Amlodipine |
|---|---|---|---|
| **Total, other (not including serious) adverse events** | | | |
| **# participants affected / at risk** | **0/186 (0.00%)** | **0/123 (0.00%)** | **0/61 (0.00%)** |

## 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** |
|---|
| The Phases of this study were entered in separate tables for outcomes and the Phases for SAEs and the AEs were entered all in one table. |

## 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:<br>☐ 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.<br>☐ 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.<br>Other disclosure agreement that restricts the right of the PI to discuss or publish trial results after the trial is completed.<br>☑ **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. |

**Results Point of Contact:**

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

**No publications provided by Novartis**

**Publications automatically indexed to this study:**

Schweizer J, Ulmer HJ, Benduhn H, Klebs S. Efficacy and tolerability of aliskiren 300 mg/hydrochlorothiazide 25 mg (± amlodipine 5 mg) in hypertensive patients not controlled by candesartan 32 mg plus HCT 25 mg. Curr Med Res Opin. 2011 Jan;27(1):131-40. doi: 10.1185/03007995.2010.537318. Epub 2010 Nov 30.

| | |
|---|---|
| Responsible Party: | External Affairs, Novartis |
| ClinicalTrials.gov Identifier: | NCT00867490 History of Changes |
| Other Study ID Numbers: | **CSPH100ADE01** |
| Study First Received: | March 20, 2009 |
| Results First Received: | January 7, 2011 |
| Last Updated: | May 4, 2011 |
| Health Authority: | Germany: Federal Institute for Drugs and Medical Devices |