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Trial record **1 of 1** for: CQVA149A2313

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QVA149 Versus Fluticasone/Salmeterol in Patients With Chronic Obstructive Pulmonary Disease (COPD) (ILLUMINATE)

This study has been completed.

Sponsor:
Novartis Pharmaceuticals

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

ClinicalTrials.gov Identifier:
NCT01315249

First received: March 11, 2011
Last updated: July 9, 2013
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History of Changes

Results First Received: February 28, 2013

Study Type:	Interventional
Study Design:	Allocation: Randomized; Intervention Model: Parallel Assignment; Masking: Double Blind (Subject, Caregiver, Investigator, Outcomes Assessor); Primary Purpose: Treatment
Condition:	Chronic Obstructive Pulmonary Disease (COPD)
Interventions:	Drug: indacaterol and glycopyrronium (QVA149) Drug: Placebo to fluticasone/salmeterol Drug: fluticasone/salmeterol

	Drug: Placebo to indacaterol and glycopyrronium (QVA149)

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
All eligible patients were randomized to one of the 2 arms in a 1:1 ratio for 26 weeks of treatment.

Pre-Assignment Details

Significant events and approaches for the overall study following participant enrollment, but prior to group assignment
A total of 523 patients were randomized. A total of 522 patients (99.8%) were included in the Full analysis Set (FAS) and Safety set. One patient was excluded who was randomized in error and did not receive study medication.

Reporting Groups

	Description
QVA149	Participants received indacaterol and glycopyrronium (QVA149) and placebo to fluticasone/salmeterol.
Fluticasone/Salmeterol	Participants received fluticasone/salmeterol and placebo to indacaterol and glycopyrronium (QVA149).

Participant Flow: Overall Study

	QVA149	Fluticasone/Salmeterol
STARTED	**259**	**264**
COMPLETED	**215**	**217**
NOT COMPLETED	**44**	**47**
Adverse Event	**22**	**26**
Withdrawal by Subject	**11**	**10**

Protocol Violation	**8**	**5**
Abnormal test results	**1**	**2**
Administrative problems	**1**	**0**
inability to use device	**1**	**0**
Lack of Efficacy	**0**	**1**
Lost to Follow-up	**0**	**2**
Death	**0**	**1**

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
QVA149	Participants received indacaterol and glycopyrronium (QVA149) and placebo to fluticasone/salmeterol.
Fluticasone/Salmeterol	Participants received fluticasone/salmeterol and placebo to indacaterol and glycopyrronium (QVA149).
Total	Total of all reporting groups

Baseline Measures

	QVA149	Fluticasone/Salmeterol	Total
Number of Participants [units: participants]	**258**	**264**	**522**

Age [units: years] Mean (Standard Deviation)	**63.2 (8.16)**	**63.4 (7.71)**	**63.3 (7.93)**
Gender [units: participants]			
Female	**77**	**75**	**152**
Male	**181**	**189**	**370**

Outcome Measures

Hide All Outcome Measures

1. Primary: Forced Expiratory Volume in 1 Second Area Under the Curve (FEV1 AUC) 0-12 [Time Frame: Week 26]

Measure Type	Primary
Measure Title	Forced Expiratory Volume in 1 Second Area Under the Curve (FEV1 AUC) 0-12
Measure Description	Forced Expiratory Volume in one second (FEV1) was calculated as the volume of air forcibly exhaled in one second as measured by a spirometer. FEV1 was normalized by 12 hours (divided by time). This outcome measures absolute values at week 26. Results are obtained from linear mixed model.
Time Frame	Week 26
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.
The Full Analysis Set (FAS) included all randomized patients who received at least one dose of study drug. FAS were used to analyze all efficacy endpoints, unless otherwise stated. Following the intention-to-treat principle, patients in the FAS were analyzed according to the treatment they were randomized to.

Reporting Groups

	Description
QVA149	Participants received indacaterol and glycopyrronium (QVA149) and placebo to fluticasone/salmeterol.
Fluticasone/Salmeterol	Participants received fluticasone/salmeterol and placebo to indacaterol and glycopyrronium (QVA149).

Measured Values

	QVA149	Fluticasone/Salmeterol
Number of Participants Analyzed [units: participants]	**212**	**216**
Forced Expiratory Volume in 1 Second Area Under the Curve (FEV1 AUC) 0-12 [units: liters] Least Squares Mean (Standard Error)	**1.69 (0.027)**	**1.56 (0.026)**

No statistical analysis provided for Forced Expiratory Volume in 1 Second Area Under the Curve (FEV1 AUC) 0-12

2. Secondary: Standardized Forced Expiratory Volume in 1 Second Area Under the Curve (FEV1 AUC) 0-12 Hours [Time Frame: Week 12]

Measure Type	Secondary
Measure Title	Standardized Forced Expiratory Volume in 1 Second Area Under the Curve (FEV1 AUC) 0-12 Hours
Measure Description	Standardized Forced Expiratory Volume in 1 Second (FEV1) was measured with spirometry conducted according to internationally accepted standards. Measurements were made between 0 and 12 hours after treatment. FEV1 was normalized by 12 hours (divided by time). This outcome measures absolute values at week 12. Results are obtained from linear mixed model.
Time Frame	Week 12
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.
The Full Analysis Set (FAS) includes all randomized patients who received at least one dose of study drug. FAS were used to analyze all efficacy endpoints, unless otherwise stated. Following the intention-to-treat principle, patients in the FAS were analyzed according to the treatment they were randomized to.

Reporting Groups

	Description
QVA149	Participants received indacaterol and glycopyrronium (QVA149) and placebo to fluticasone/salmeterol.
Fluticasone/Salmeterol	Participants received fluticasone/salmeterol and placebo to indacaterol and glycopyrronium (QVA149).

Measured Values

	QVA149	**Fluticasone/Salmeterol**
Number of Participants Analyzed [units: participants]	**255**	**261**
Standardized Forced Expiratory Volume in 1 Second Area Under the Curve (FEV1 AUC) 0-12 Hours [units: liters] Least Squares Mean (Standard Error)	**1.71 (0.023)**	**1.59 (0.022)**

No statistical analysis provided for Standardized Forced Expiratory Volume in 1 Second Area Under the Curve (FEV1 AUC) 0-12 Hours

3. Secondary: Forced Vital Capacity at All-time Points (Week 12) [Time Frame: -45 min, -15 min predose; 5 min, 30 min, 1 hr, 2hr, 4 hr, 8 hr, 12 hr post-dose on week 12]

Measure Type	Secondary

Measure Title	Forced Vital Capacity at All-time Points (Week 12)
Measure Description	Forced Vital Capacity (FVC) is the amount of air which can be forcibly exhaled from the lungs after taking the deepest breath possible. FVC was assessed via spirometry. A positive change from baseline in FVC indicates improvement in lung function. This outcome measures absolute values at -45 min, -15 min predose; 5 min, 30 min, 1 hr, 2hr, 4 hr, 8 hr, 12 hr post-dose week 12. Results are obtained from linear mixed model.
Time Frame	-45 min, -15 min predose; 5 min, 30 min, 1 hr, 2hr, 4 hr, 8 hr, 12 hr post-dose on week 12
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.
The Full Analysis Set (FAS) includes all randomized patients who received at least one dose of study drug. FAS were used to analyze all efficacy endpoints, unless otherwise stated. Following the intention-to-treat principle, patients in the FAS were analyzed according to the treatment they were randomized to.

Reporting Groups

	Description
QVA149	Participants received indacaterol and glycopyrronium (QVA149) and placebo to fluticasone/salmeterol.
Fluticasone/Salmeterol	Participants received fluticasone/salmeterol and placebo to indacaterol and glycopyrronium (QVA149).

Measured Values

	QVA149	**Fluticasone/Salmeterol**
Number of Participants Analyzed [units: participants]	**230**	**237**
Forced Vital Capacity at All-time Points (Week 12) [units: liters] Least Squares Mean (Standard Error)		

-45 minutes (n=230 QVA149; 237 flut/salm)	**3.37 (0.046)**	**3.16 (0.044)**
-15 minutes (n=228 QVA149; 235 flut/salm)	**3.37 (0.047)**	**3.17 (0.045)**
5 minutes (n=229 QVA149; 236 flut/salm)	**3.44 (0.048)**	**3.20 (0.046)**
30 minutes (n=229 QVA149; 235 flut/salm)	**3.48 (0.048)**	**3.23 (0.046)**
1 hour (n=228 QVA149; 236 flut/salm)	**3.49 (0.049)**	**3.26 (0.047)**
2 hours (n=229 QVA149; 237 flut/salm)	**3.54 (0.048)**	**3.31 (0.046)**
4 hours (n=228 QVA149; 237 flut/salm)	**3.49 (0.050)**	**3.33 (0.048)**
8 hours (n=228 QVA149; 237 flut/salm)	**3.46 (0.048)**	**3.27 (0.046)**
12 hours (n=228 QVA149; 236 flut/salm)	**3.45 (0.050)**	**3.26 (0.049)**

No statistical analysis provided for Forced Vital Capacity at All-time Points (Week 12)

4. Secondary: Forced Vital Capacity at All-time Points (Week 26) [Time Frame: -45 min, -15 min predose; 5 min, 30 min, 1 hr, 2hr, 4 hr, 8 hr, 12 hr post-dose on week 26]

Measure Type	Secondary
Measure Title	Forced Vital Capacity at All-time Points (Week 26)
Measure Description	Forced Vital Capacity (FVC) is the amount of air which can be forcibly exhaled from the lungs after taking the deepest breath possible. FVC was assessed via spirometry. A positive change from baseline in FVC indicates improvement in lung function. This outcome measures absolute values at -45 min, -15 min predose; 5 min, 30 min, 1 hr, 2hr, 4 hr, 8 hr, 12 hr post-dose on week 26. Results are obtained from linear mixed model.
Time Frame	-45 min, -15 min predose; 5 min, 30 min, 1 hr, 2hr, 4 hr, 8 hr, 12 hr post-dose on week 26
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.

The Full Analysis Set (FAS) includes all randomized patients who received at least one dose of study drug. FAS were used to analyze all efficacy endpoints, unless otherwise stated. Following the intention-to-treat principle, patients in the FAS were analyzed according to the treatment they were randomized to.

Reporting Groups

	Description
QVA149	Participants received indacaterol and glycopyrronium (QVA149) and placebo to fluticasone/salmeterol.
Fluticasone/Salmeterol	Participants received fluticasone/salmeterol and placebo to indacaterol and glycopyrronium (QVA149).

Measured Values

	QVA149	Fluticasone/Salmeterol
Number of Participants Analyzed [units: participants]	**213**	**216**
Forced Vital Capacity at All-time Points (Week 26) [units: liters] Least Squares Mean (Standard Error)		
-45 minutes (n=213 QVA149; 216 flut/salm)	**3.32 (0.047)**	**3.13 (0.045)**
-15 minutes (n=213 QVA149; 215 flut/salm)	**3.33 (0.044)**	**3.12 (0.043)**
5 minutes (n=212 QVA149; 215 flut/salm)	**3.42 (0.051)**	**3.17 (0.049)**
30 minutes (n=212 QVA149; 214 flut/salm)	**3.47 (0.053)**	**3.23 (0.051)**
1 hour (n=212 QVA149; 216 flut/salm)	**3.50 (0.051)**	**3.23 (0.049)**
2 hours (n=212 QVA149; 216 flut/salm)	**3.51 (0.051)**	**3.29 (0.049)**
4 hours (n=212 QVA149; 215 flut/salm)	**3.45 (0.053)**	**3.28 (0.050)**
8 hours (n=212 QVA149; 216 flut/salm)	**3.40 (0.053)**	**3.21 (0.050)**

12 hours (n=211 QVA149; 213 flut/salm)	**3.40 (0.053)**	**3.18 (0.051)**

No statistical analysis provided for Forced Vital Capacity at All-time Points (Week 26)

5. Secondary: Focal Score of the Transitional Dyspnea Index (TDI) [Time Frame: 12 weeks and 26 weeks]

Measure Type	Secondary
Measure Title	Focal Score of the Transitional Dyspnea Index (TDI)
Measure Description	Transition Dyspnea Index (TDI) captures changes from baseline. The TDI score is based on three domains with each domain scored from -3 (major deterioration) to +3 (major improvement), to give an overall score of -9 to +9, a negative score indicating a deterioration from baseline. A TDI focal score of 1 is considered to be a clinically significant improvement.
Time Frame	12 weeks and 26 weeks
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.
The Full Analysis Set (FAS) includes all randomized patients who received at least one dose of study drug. FAS were used to analyze all efficacy endpoints, unless otherwise stated. Following the intention-to-treat principle, patients in the FAS were analyzed according to the treatment they were randomized to.

Reporting Groups

	Description
QVA149	Participants received indacaterol and glycopyrronium (QVA149) and placebo to fluticasone/salmeterol.
Fluticasone/Salmeterol	Participants received fluticasone/salmeterol and placebo to indacaterol and glycopyrronium (QVA149).

Measured Values

	QVA149	Fluticasone/Salmeterol
Number of Participants Analyzed [units: participants]	**224**	**236**
Focal Score of the Transitional Dyspnea Index (TDI) [units: units on a scale] Least Squares Mean (Standard Error)		
12 weeks (n=224 QVA149; 236 flut/salm)	**2.03 (0.388)**	**1.45 (0.374)**
26 weeks (n=212 QVA149; 213 flut/salm)	**2.36 (0.388)**	**1.60 (0.376)**

No statistical analysis provided for Focal Score of the Transitional Dyspnea Index (TDI)

6. Secondary: Total Score of the St. George's Respiratory Questionnaire (SGRQ-C) [Time Frame: 12 weeks and 26 weeks]

Measure Type	Secondary
Measure Title	Total Score of the St. George's Respiratory Questionnaire (SGRQ-C)
Measure Description	The total score of the St. George's Respiratory Questionnaire (SGRQ-C) is a health related quality of life questionnaire consisting of 51 items in three components: symptoms, activity, and impacts. The lowest possible value is zero and the highest 100. Higher values correspond to greater impairment in quality of life.
Time Frame	12 weeks and 26 weeks
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.
The Full Analysis Set (FAS) includes all randomized patients who received at least one dose of study drug. FAS were used to analyze all efficacy endpoints, unless otherwise stated. Following the intention-to-treat principle, patients in the FAS were analyzed according to the treatment they were randomized to.

Reporting Groups

	Description
QVA149	Participants received indacaterol and glycopyrronium (QVA149) and placebo to fluticasone/salmeterol.
Fluticasone/Salmeterol	Participants received fluticasone/salmeterol and placebo to indacaterol and glycopyrronium (QVA149).

Measured Values

	QVA149	Fluticasone/Salmeterol
Number of Participants Analyzed [units: participants]	**230**	**238**
Total Score of the St. George's Respiratory Questionnaire (SGRQ-C) [units: units on a scale] Least Squares Mean (Standard Error)		
12 weeks (n=230 QVA149; 238 flut/salm)	**36.74 (1.175)**	**36.03 (1.132)**
26 weeks (n=211 QVA149; 216 flut/salm)	**35.45 (1.448)**	**36.68 (1.386)**

No statistical analysis provided for Total Score of the St. George's Respiratory Questionnaire (SGRQ-C)

7. Secondary: Mean Change From Baseline in Daily Number of Puffs of Rescue Medication [Time Frame: Baseline, 12 weeks and 26 weeks]

Measure Type	Secondary
Measure Title	Mean Change From Baseline in Daily Number of Puffs of Rescue Medication
Measure Description	Participants maintained a diary to record the daily number of puffs of rescue medication used to treat COPD symptoms.
Time Frame	Baseline, 12 weeks and 26 weeks
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.
The Full Analysis Set (FAS) includes all randomized patients who received at least one dose of study drug. FAS were used to analyze all efficacy endpoints, unless otherwise stated. Following the intention-to-treat principle, patients in the FAS were analyzed according to the treatment they were randomized to.

Reporting Groups

	Description
QVA149	Participants received indacaterol and glycopyrronium (QVA149) and placebo to fluticasone/salmeterol.
Fluticasone/Salmeterol	Participants received fluticasone/salmeterol and placebo to indacaterol and glycopyrronium (QVA149).

Measured Values

	QVA149	**Fluticasone/Salmeterol**
Number of Participants Analyzed [units: participants]	**253**	**259**
Mean Change From Baseline in Daily Number of Puffs of Rescue Medication [units: puffs] Least Squares Mean (Standard Error)		
Weeks 1 to12	**-2.18 (0.187)**	**-1.90 (0.184)**
Weeks 1 to 26	**-2.32 (0.194)**	**-1.93 (0.191)**

No statistical analysis provided for Mean Change From Baseline in Daily Number of Puffs of Rescue Medication

8. Secondary: Change From Baseline in Symptom Scores Reported Using the Ediary [Time Frame: 12 weeks and 26 weeks]

Measure Type	Secondary
Measure Title	Change From Baseline in Symptom Scores Reported Using the Ediary
Measure Description	Participants maintained an ediary to record daily symptom scores (AM and PM) over 12 weeks and 26 weeks of treatment. This analysis compares the mean symptom scores over 12 weeks and 26 weeks compared to baseline. The diary records morning and evening daily clinical symptoms including cough, wheezing, shortness of breath, sputum volume, sputum purulence, night time awakenings and rescue medication use. Scale ranges: ranges are 0 to 3 with varying scale descriptions that pertain to the question being asked. 0 is the minimum score = “none” or “No symptoms” or “never” or “No” 1. = mild, a little 2. = moderate 3. = severe For the scale range provided, high values represent a worse outcome.
Time Frame	12 weeks and 26 weeks
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.
The Full Analysis Set (FAS) includes all randomized patients who received at least one dose of study drug. FAS were used to analyze all efficacy endpoints, unless otherwise stated. Following the intention-to-treat principle, patients in the FAS were analyzed according to the treatment they were randomized to.

Reporting Groups

	Description
QVA149	Participants received indacaterol and glycopyrronium (QVA149) and placebo to fluticasone/salmeterol.
Fluticasone/Salmeterol	Participants received fluticasone/salmeterol and placebo to indacaterol and glycopyrronium (QVA149).

Measured Values

	QVA149	**Fluticasone/Salmeterol**

Number of Participants Analyzed [units: participants]	**253**	**259**
Change From Baseline in Symptom Scores Reported Using the Ediary [units: units on a scale] Least Squares Mean (Standard Error)		
Weeks 1-12	**-1.08 (0.135)**	**-1.17 (0.133)**
Weeks 1-26	**-1.28 (0.140)**	**-1.24 (0.138)**

No statistical analysis provided for Change From Baseline in Symptom Scores Reported Using the Ediary

9. Secondary: Inspiratory Capacity (IC) at All-time Points (12 Weeks) [Time Frame: 12 weeks]

Measure Type	Secondary
Measure Title	Inspiratory Capacity (IC) at All-time Points (12 Weeks)
Measure Description	After 12 weeks of treatment, Inspiratory Capacity (IC) was measured via spirometry, conducted according to internationally accepted standards. The mean of 3 acceptable measurements was calculated and reported in liters.
Time Frame	12 weeks
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.
Inspiratory capacity was measured for a subset of patients QVA149 group: (78 patients (30.2%)) at baseline and 49-73 patients contributing observations at post-baseline visits. flut/salm group: (86 patients (32.6%)) at baseline and 60-79 patients contributing observations at post-baseline visits.

Reporting Groups

	Description
QVA149	Participants received indacaterol and glycopyrronium (QVA149) and placebo to fluticasone/salmeterol.
Fluticasone/Salmeterol	Participants received fluticasone/salmeterol and placebo to indacaterol and glycopyrronium (QVA149).

Measured Values

	QVA149	Fluticasone/Salmeterol
Number of Participants Analyzed [units: participants]	**58**	**72**
Inspiratory Capacity (IC) at All-time Points (12 Weeks) [units: Liters] Least Squares Mean (Standard Error)		
-20 minutes (n=51 QVA149; 65 flut/salm)	**2.39 (0.081)**	**2.31 (0.073)**
25 minutes (n=56 QVA149; 71 flut/salm)	**2.55 (0.075)**	**2.42 (0.068)**
1 hour (n=59 QVA149; 68 flut/salm)	**2.54 (0.079)**	**2.43 (0.072)**
3 hours (n=54 QVA149; 67 flut/salm)	**2.52 (0.086)**	**2.45 (0.079)**
7 hours (n=58 QVA149; 67 flut/salm)	**2.42 (0.080)**	**2.41 (0.073)**
11 hours (n=49 QVA149; 72 flut/salm)	**2.40 (0.079)**	**2.34 (0.070)**

No statistical analysis provided for Inspiratory Capacity (IC) at All-time Points (12 Weeks)

10. Secondary: Inspiratory Capacity (IC) at All-time Points (26 Weeks) [Time Frame: 26 weeks]

Measure Type	Secondary
Measure Title	Inspiratory Capacity (IC) at All-time Points (26 Weeks)
Measure Description	After 26 weeks of treatment, Inspiratory Capacity (IC) was measured via spirometry, conducted according to internationally accepted standards. The mean of 3 acceptable measurements was calculated and reported in liters.

Time Frame	26 weeks
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.
Inspiratory capacity was measured for a subset of patients QVA149 group: (78 patients (30.2%)) at baseline and 49-73 patients contributing observations at post-baseline visits. flut/salm group: (86 patients (32.6%)) at baseline and 60-79 patients contributing observations at post-baseline visits.

Reporting Groups

	Description
QVA149	Participants received indacaterol and glycopyrronium (QVA149) and placebo to fluticasone/salmeterol.
Fluticasone/Salmeterol	Participants received fluticasone/salmeterol and placebo to indacaterol and glycopyrronium (QVA149).

Measured Values

	QVA149	**Fluticasone/Salmeterol**
Number of Participants Analyzed [units: participants]	**58**	**66**
Inspiratory Capacity (IC) at All-time Points (26 Weeks) [units: Liters] Least Squares Mean (Standard Error)		
-20 minutes (n=53 QVA149; 63 flut/salm)	**2.25 (0.079)**	**2.22 (0.071)**
25 minutes (n=58 QVA149; 63 flut/salm)	**2.41 (0.088)**	**2.34 (0.080)**
1 hour (n=53 QVA149; 63 flut/salm)	**2.38 (0.087)**	**2.35 (0.079)**
3 hours (n=52 QVA149; 60 flut/salm)	**2.33 (0.090)**	**2.32 (0.080)**

7 hours (n=56 QVA149; 61 flut/salm)	**2.40 (0.82)**	**2.30 (0.075)**
11 hours (n=57 QVA149; 66 flut/salm)	**2.37 (0.084)**	**2.27 (0.075)**

No statistical analysis provided for Inspiratory Capacity (IC) at All-time Points (26 Weeks)

11. Secondary: Number of Participants With Adverse Events [Time Frame: 26 weeks]

Measure Type	Secondary
Measure Title	Number of Participants With Adverse Events
Measure Description	The assessment of safety was based on Adverse Events. A summary of adverse events is presented with this outcome, additional details are provided in Adverse Events Section.
Time Frame	26 weeks
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 set includes all participants who received at least one dose of study drug.

Reporting Groups

	Description
QVA149	Participants received indacaterol and glycopyrronium (QVA149) and placebo to fluticasone/salmeterol.
Fluticasone/Salmeterol	Participants received fluticasone/salmeterol and placebo to indacaterol and glycopyrronium (QVA149).

Measured Values

	QVA149	**Fluticasone/Salmeterol**

Number of Participants Analyzed [units: participants]	**258**	**264**
Number of Participants With Adverse Events [units: participants]		
Any Adverse Event	**143**	**159**
Death	**0**	**1**
Serious Adverse Events	**13**	**14**
Discontinued due to Adverse Events	**22**	**27**
Discontinued due to Serious Adverse Events	**5**	**9**
Discontinued due to non-Serious Adverse Events	**17**	**18**

No statistical analysis provided for Number of Participants With Adverse Events

Serious Adverse Events

Hide Serious Adverse Events

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

Reporting Groups

	Description
QVA149	Participants received indacaterol and glycopyrronium (QVA149) and placebo to fluticasone/salmeterol.
Fluticasone/Salmeterol	Participants received fluticasone/salmeterol and placebo to indacaterol and glycopyrronium (QVA149).

Serious Adverse Events

	QVA149	Fluticasone/Salmeterol
Total, serious adverse events		
# participants affected / at risk	**13/258 (5.04%)**	**14/264 (5.30%)**
Cardiac disorders		
Acute coronary syndrome † [1]		
# participants affected / at risk	**0/258 (0.00%)**	**1/264 (0.38%)**
Acute myocardial infarction † [1]		
# participants affected / at risk	**1/258 (0.39%)**	**0/264 (0.00%)**
Angina pectoris † [1]		
# participants affected / at risk	**1/258 (0.39%)**	**0/264 (0.00%)**
Atrial fibrillation † [1]		
# participants affected / at risk	**1/258 (0.39%)**	**0/264 (0.00%)**
Coronary artery stenosis † [1]		
# participants affected / at risk	**1/258 (0.39%)**	**0/264 (0.00%)**
Gastrointestinal disorders		
Dyspepsia † [1]		
# participants affected / at risk	**1/258 (0.39%)**	**0/264 (0.00%)**
Dysphagia † [1]		
# participants affected / at risk	**1/258 (0.39%)**	**0/264 (0.00%)**
Infections and infestations		
Abscess limb † [1]		
# participants affected / at risk	**0/258 (0.00%)**	**1/264 (0.38%)**
Bronchitis † [1]		
# participants affected / at risk	**0/258 (0.00%)**	**1/264 (0.38%)**
Nasopharyngitis † [1]		

# participants affected / at risk	0/258 (0.00%)	1/264 (0.38%)
Pneumonia † [1]		
# participants affected / at risk	0/258 (0.00%)	2/264 (0.76%)
Injury, poisoning and procedural complications		
Contusion † [1]		
# participants affected / at risk	1/258 (0.39%)	0/264 (0.00%)
Metabolism and nutrition disorders		
Diabetes mellitus † [1]		
# participants affected / at risk	1/258 (0.39%)	0/264 (0.00%)
Musculoskeletal and connective tissue disorders		
Myopathy † [1]		
# participants affected / at risk	1/258 (0.39%)	0/264 (0.00%)
Neoplasms benign, malignant and unspecified (incl cysts and polyps)		
Colon cancer † [1]		
# participants affected / at risk	0/258 (0.00%)	1/264 (0.38%)
Lung adenocarcinoma † [1]		
# participants affected / at risk	0/258 (0.00%)	1/264 (0.38%)
Oesophageal carcinoma † [1]		
# participants affected / at risk	1/258 (0.39%)	0/264 (0.00%)
Rectal cancer † [1]		
# participants affected / at risk	1/258 (0.39%)	0/264 (0.00%)
Small cell lung cancer stage unspecified † [1]		
# participants affected / at risk	0/258 (0.00%)	1/264 (0.38%)
Nervous system disorders		
Carotid artery occlusion † [1]		

# participants affected / at risk	0/258 (0.00%)	1/264 (0.38%)
Carotid artery stenosis † [1]		
# participants affected / at risk	1/258 (0.39%)	0/264 (0.00%)
Ischaemic stroke † [1]		
# participants affected / at risk	0/258 (0.00%)	1/264 (0.38%)
Reproductive system and breast disorders		
Benign prostatic hyperplasia † [1]		
# participants affected / at risk	1/258 (0.39%)	0/264 (0.00%)
Epididymitis † [1]		
# participants affected / at risk	0/258 (0.00%)	1/264 (0.38%)
Respiratory, thoracic and mediastinal disorders		
Acute respiratory failure † [1]		
# participants affected / at risk	1/258 (0.39%)	0/264 (0.00%)
Chronic obstructive pulmonary disease † [1]		
# participants affected / at risk	1/258 (0.39%)	3/264 (1.14%)
Dyspnoea † [1]		
# participants affected / at risk	1/258 (0.39%)	0/264 (0.00%)
Pleural effusion † [1]		
# participants affected / at risk	1/258 (0.39%)	1/264 (0.38%)
Skin and subcutaneous tissue disorders		
Skin ulcer † [1]		
# participants affected / at risk	0/258 (0.00%)	1/264 (0.38%)
Vascular disorders		
Peripheral artery aneurysm † [1]		
# participants affected / at risk	0/258 (0.00%)	1/264 (0.38%)

Venous insufficiency † 1		
# participants affected / at risk	**0/258 (0.00%)**	**1/264 (0.38%)**
Venous thrombosis limb † 1		
# participants affected / at risk	**1/258 (0.39%)**	**0/264 (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
QVA149	Participants received indacaterol and glycopyrronium (QVA149) and placebo to fluticasone/salmeterol.
Fluticasone/Salmeterol	Participants received fluticasone/salmeterol and placebo to indacaterol and glycopyrronium (QVA149).

Other Adverse Events

	QVA149	**Fluticasone/Salmeterol**
Total, other (not including serious) adverse events		
# participants affected / at risk	**73/258 (28.29%)**	**82/264 (31.06%)**

Infections and infestations		
Nasopharyngitis † 1		
# participants affected / at risk	**37/258 (14.34%)**	**29/264 (10.98%)**
Respiratory, thoracic and mediastinal disorders		
Chronic obstructive pulmonary disease † 1		
# participants affected / at risk	**44/258 (17.05%)**	**60/264 (22.73%)**

† 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.

Results Point of Contact:

Name/Title: Study Director
Organization: Novartis
phone: 41 61 324 1111

No publications provided by Novartis

Publications automatically indexed to this study:

Vogelmeier CF, Bateman ED, Pallante J, Alagappan VK, D'Andrea P, Chen H, Banerji D. Efficacy and safety of once-daily QVA149 compared with twice-daily salmeterol-fluticasone in patients with chronic obstructive pulmonary disease (ILLUMINATE): a randomised, double-blind, parallel group study. Lancet Respir Med. 2013 Mar;1(1):51-60. doi: 10.1016/S2213-2600(12)70052-8. Epub 2012 Dec 6. Erratum in: Lancet Respir Med. 2013 Apr;1(2):101.

Responsible Party:	Novartis (Novartis Pharmaceuticals)
ClinicalTrials.gov Identifier:	NCT01315249 History of Changes
Other Study ID Numbers:	**CQVA149A2313** 2010-023621-37 (EudraCT Number)
Study First Received:	March 11, 2011
Results First Received:	February 28, 2013
Last Updated:	July 9, 2013
Health Authority:	United States: Food and Drug Administration

Belgium: Federal Agency for Medicines and Health Products, FAMHP
Belgium: Federal Agency for Medicinal Products and Health Products
Belgium: Institutional Review Board
Belgium: Ministry of Social Affairs, Public Health and the Environment
Belgium: The Federal Public Service (FPS) Health, Food Chain Safety and Environment
Czech Republic: Ethics Committee
Czech Republic: State Institute for Drug Control
Estonia: The State Agency of Medicine
Hungary: National Institute of Pharmacy
Germany: Ethics Commission
Germany: Federal Institute for Drugs and Medical Devices
Germany: Federal Ministry of Education and Research
Germany: Federal Ministry of Food, Agriculture and Consumer Protection
Germany: German Institute of Medical Documentation and Information
Germany: Ministry of Health
Germany: Paul-Ehrlich-Institut
Korea: Food and Drug Administration
Lithuania: Bioethics Committee
Lithuania: State Medicine Control Agency - Ministry of Health
South Korea: Institutional Review Board
South Korea: Korea Food and Drug Administration (KFDA)
Norway: Data Protection Authority
Norway: Directorate of Health
Norway: Norwegian Institute of Public Health
Norway: Norwegian Medicines Agency
Norway: Norwegian Social Science Data Services
Norway:National Committee for Medical and Health Research Ethics
Spain: Comité Ético de Investigación Clínica
Spain: Ethics Committee
Spain: Ministry of Health
Spain: Ministry of Health and Consumption
Spain: Spanish Agency of Medicines