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Trial record **1 of 1** for: CNVA237A2316

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Efficacy, Safety and Tolerability of the Co-administration of NVA237 Plus Indacaterol Once Daily Versus Indacaterol Once Daily in Patients With Moderate to Severe Chronic Obstructive Pulmonary Disease (COPD) (GLOW6)

This study has been completed.

Sponsor:
Novartis Pharmaceuticals

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

ClinicalTrials.gov Identifier:
NCT01604278

First received: May 21, 2012
Last updated: November 12, 2014
Last verified: November 2014
History of Changes

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Results First Received: July 28, 2014

Study Type:	Interventional
Study Design:	Allocation: Randomized; Endpoint Classification: Safety/Efficacy Study; Intervention Model: Parallel Assignment; Masking: Double Blind (Subject, Caregiver, Investigator); Primary Purpose: Treatment
Condition:	Chronic Obstructive Pulmonary Disease (COPD)
Interventions:	Drug: NVA237 50 µg and indacaterol 150 µg Drug: Placebo to NVA237 and indacaterol 150 µg

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
The number of patients randomized was 449. Of these participants, the Full Analysis Set (FAS) comprised 446 participants who received at least one dose of study drug and had no major deviations which led to removal from the FAS. The Safety Set included 447 participants who received at least one dose of study drug.

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
NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via single dose dry powder inhaler (SDDPI) plus NVA237 50 ug once daily delivered via SDDPI
Placebo to NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via SDDPI plus placebo to NVA237 delivered via SDDPI

Participant Flow: Overall Study

	NVA237 + Indacaterol	Placebo to NVA237 + Indacaterol
STARTED	**226**	**223**
Safety Set	**226**	**221** [1]
Full Analysis Set	**226**	**220** [2]
COMPLETED	**212**	**210**
NOT COMPLETED	**14**	**13**

Lack of Efficacy	**0**	**1**
Lost to Follow-up	**1**	**0**
Administrative problems	**2**	**1**
Withdrawal by Subject	**3**	**3**
Adverse Event	**3**	**5**
Protocol Deviation	**5**	**3**

[1] Two randomized participants who did not receive study drug were excluded from this set.
[2] Three randomized participants excluded: 2 who did not receive study drug; 1 with a major deviation.

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.
The baseline characteristics table was based on the safety set.

Reporting Groups

	Description
NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via single dose dry powder inhaler (SDDPI) plus NVA237 50 ug once daily delivered via SDDPI
Placebo to NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via SDDPI plus placebo to NVA237 delivered via SDDPI
Total	Total of all reporting groups

Baseline Measures

	NVA237 + Indacaterol	Placebo to NVA237 + Indacaterol	Total
Number of Participants [units: participants]	**226**	**221**	**447**
Age [units: Years] Mean (Standard Deviation)	**63.4 (8.44)**	**64.1 (7.67)**	**63.7 (8.07)**
Gender [units: Participants]			
Female	**46**	**35**	**81**
Male	**180**	**186**	**366**

Outcome Measures

Hide All Outcome Measures

1. Primary: Trough Forced Expiratory Volume at 1 Second (FEV1) [Time Frame: 12 weeks]

Measure Type	Primary
Measure Title	Trough Forced Expiratory Volume at 1 Second (FEV1)
Measure Description	Centralized spirometry according to internationally accepted standards was used. The model contained treatment, baseline smoking status and baseline inhaled corticosteroid (ICS) use as fixed effects with the baseline measurement of FEV1, FEV1 prior to inhalation of short acting bronchodilators and FEV1 post inhalation of short acting bronchodilator as covariates and center nested in region as a random effect. If trough FEV1 was missing at week 12, the latest non-missing pre-dose trough FEV1 (the mean of 45 and 15 min pre-dose measurements) from day 29, 57 or 84) was carried forward. These measurements had to have been taken before the next dose of study medication. FEV1 measurements within 6 hours of rescue medication use or within 7 days of systemic corticosteroid use were not included in the analysis.
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.
Only participants from the full analysis set, who had outcome measure data with applicable fixed effects/covariates according to the analysis model, were analyzed.

Reporting Groups

	Description
NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via single dose dry powder inhaler (SDDPI) plus NVA237 50 ug once daily delivered via SDDPI
Placebo to NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via SDDPI plus placebo to NVA237 delivered via SDDPI

Measured Values

	NVA237 + Indacaterol	**Placebo to NVA237 + Indacaterol**
Number of Participants Analyzed [units: participants]	**214**	**214**
Trough Forced Expiratory Volume at 1 Second (FEV1) [units: Liters] Least Squares Mean (Standard Error)	**1.499 (0.0135)**	**1.436 (0.0136)**

No statistical analysis provided for Trough Forced Expiratory Volume at 1 Second (FEV1)

2. Secondary: FEV(1) Area Under the Curve (AUC) During 30 Minutes to 4 Hours Post Dose [Time Frame: 12 weeks]

Measure Type	Secondary

Measure Title	FEV(1) Area Under the Curve (AUC) During 30 Minutes to 4 Hours Post Dose
Measure Description	Centralized spirometry was used according to internationally accepted standards was used. The trapezoidal rule was applied to calculate FEV1 Area Under the Curve (AUC) and then normalized to the length of time. Whether the participants had complete or incomplete FEV1 assessments in respective time ranges, their AUCs were calculated based on the existing FEV1 measurements (i.e., the missing FEV1 measurements were not interpolated). Specifically, for those participants who had a FEV1 assessment at only one time-point, their AUC was approximated by the observed FEV1. FEV1 measurements within 6 hours of rescue medication use or within 7 days of systemic corticosteroid use were not included in the analysis.
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.
Only participants from the full analysis set, who had outcome measure data with applicable fixed effects/covariates according to the analysis model, were analyzed.

Reporting Groups

	Description
NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via single dose dry powder inhaler (SDDPI) plus NVA237 50 ug once daily delivered via SDDPI
Placebo to NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via SDDPI plus placebo to NVA237 delivered via SDDPI

Measured Values

	NVA237 + Indacaterol	Placebo to NVA237 + Indacaterol
Number of Participants Analyzed [units: participants]	**208**	**208**
FEV(1) Area Under the Curve (AUC) During 30 Minutes to 4 Hours Post Dose		

[units: Liters] **Least Squares Mean (Standard Error)**	**1.641 (0.0132)**	**1.530 (0.0134)**

No statistical analysis provided for FEV(1) Area Under the Curve (AUC) During 30 Minutes to 4 Hours Post Dose

3. Secondary: Peak FEV1 During 30 Minutes to 4 Hours Post-dose at 12 Weeks [Time Frame: 12 weeks]

Measure Type	Secondary
Measure Title	Peak FEV1 During 30 Minutes to 4 Hours Post-dose at 12 Weeks
Measure Description	Centralized spirometry was used according to internationally accepted standards was used. Peak FEV1 was defined as the maximum FEV1 during the first 4 hours post morning dosing. The model contained treatment, baseline smoking status and baseline ICS use as fixed effects with the baseline measurement of FEV1, FEV1 prior to inhalation of short acting bronchodilators and FEV1 post inhalation of short acting bronchodilator as covariates and center nested in a region as a random effect. If all FEV1 measurements were missing from 30 minutes onward, the peak FEV1 was not calculated. FEV1 measurements within 6 hours of rescue medication use or within 7 days of systemic corticosteroid use were not included in the analysis.
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.
Only participants from the full analysis set, who had outcome measure data with applicable fixed effects/covariates according to the analysis model, were analyzed.

Reporting Groups

	Description
NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via single dose dry powder inhaler (SDDPI) plus NVA237 50 ug once daily delivered via SDDPI

Placebo to NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via SDDPI plus placebo to NVA237 delivered via SDDPI

Measured Values

	NVA237 + Indacaterol	Placebo to NVA237 + Indacaterol
Number of Participants Analyzed [units: participants]	**208**	**208**
Peak FEV1 During 30 Minutes to 4 Hours Post-dose at 12 Weeks [units: Liters] Least Squares Mean (Standard Error)	**1.702 (0.0137)**	**1.596 (0.0138)**

No statistical analysis provided for Peak FEV1 During 30 Minutes to 4 Hours Post-dose at 12 Weeks

4. Secondary: FEV1 at Individual Time-points [Time Frame: Day 1, Day 29, Day 57 and Days 84/85]

Measure Type	Secondary
Measure Title	FEV1 at Individual Time-points
Measure Description	Centralized spirometry according to internationally accepted standards was used. FEV1 was measured at all post-dose time points up to 4 hours, and at 23 hours 15 minutes and 23 hours 45 minutes, by visit. The model contained treatment, baseline smoking status and baseline ICS use as fixed effects with the baseline measurement of FEV1, FEV1 prior to inhaltion of short acting bronchodilators and FEV1 post inhaltion of short acting bronchodilators as covariates and center nested in region as a random effect. FEV1 measurements within 6 hours of rescue medication use or within 7 days of systemic corticosteroid use were not included in the analysis.
Time Frame	Day 1, Day 29, Day 57 and Days 84/85
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.
Full Analysis Set

Reporting Groups

	Description
NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via single dose dry powder inhaler (SDDPI) plus NVA237 50 ug once daily delivered via SDDPI
Placebo to NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via SDDPI plus placebo to NVA237 delivered via SDDPI

Measured Values

	NVA237 + Indacaterol	Placebo to NVA237 + Indacaterol
Number of Participants Analyzed [units: participants]	**226**	**220**
FEV1 at Individual Time-points [units: Liters] Least Squares Mean (Standard Error)		
Day 1, 30 minutes (min) post dose (n=208,199)	**1.544 (0.0086)**	**1.467 (0.0088)**
Day 1, 1 hour (h) post dose (n=214,209)	**1.589 (0.0102)**	**1.479 (0.0104)**
Day 1, 2 h post dose (n=212,207)	**1.626 (0.0114)**	**1.506 (0.0117)**
Day 1, 4 h post dose (n=206,213)	**1.630 (0.0122)**	**1.518 (0.0122)**
Day 1, 23 h 15 min post dose (n=201,203)	**1.481 (0.0118)**	**1.409 (0.0118)**
Day 1, 23 h 45 min post dose (n=213,204)	**1.502 (0.0109)**	**1.425 (0.0112)**
Day 29, 45 min pre-dose (n=198,202)	**1.491 (0.0150)**	**1.438 (0.0150)**
Day 29, 15 min pre-dose (n=198,200)	**1.524 (0.0156)**	**1.470 (0.0155)**
Day 29, 30 min post dose (n=202,201)	**1.617 (0.0152)**	**1.508 (0.0154)**

Day 29, 1 h post dose (n=200,199)	**1.648 (0.0144)**	**1.524 (0.0145)**
Day 56, 45 min pre-dose (n=201,202)	**1.482 (0.0145)**	**1.418 (0.0146)**
Day 56, 15 min pre-dose (n=199,198)	**1.509 (0.0148)**	**1.443 (0.0149)**
Day 56, 30 min post dose (n=200,200)	**1.606 (0.0144)**	**1.495 (0.0146)**
Day 56, 1 h post dose (n=197,204)	**1.634 (0.0149)**	**1.520 (0.0148)**
Days 84/85, 45 min pre-dose (n=201,206)	**1.459 (0.0127)**	**1.411 (0.0126)**
Days 84/85, 15 min pre-dose (n=190,196)	**1.476 (0.0129)**	**1.439 (0.0129)**
Days 84/85, 30 min post dose (n=198,199)	**1.604 (0.0125)**	**1.514 (0.0126)**
Days 84/85, 1 h post dose (n=201,200)	**1.638 (0.0125)**	**1.514 (0.0126)**
Days 84/85, 2 h post dose (n=198,201)	**1.665 (0.0139)**	**1.542 (0.0139)**
Days 84/85, 4 h post dose (n=200,198)	**1.620 (0.0162)**	**1.529 (0.0165)**
Days 84/85, 23 h 15 min post dose (n=193,188)	**1.474 (0.0139)**	**1.426 (0.0143)**
Days 84/85, 23 h 45 min post dose (n=197,199)	**1.508 (0.0147)**	**1.452 (0.0148)**

No statistical analysis provided for FEV1 at Individual Time-points

5. Secondary: Forced Vital Capacity (FVC) at Individual Time-points [Time Frame: Day 1, Day 29, Day 57 and Days 84/85]

Measure Type	Secondary
Measure Title	Forced Vital Capacity (FVC) at Individual Time-points
Measure Description	FVC was calculated at each time point up to 4 hours post-dose and at 23 hours 15 minutes and 23 hours 45 minutes, by visit. The model contained treatment, baseline smoking status and baseline ICS use as fixed effects with the baseline measurement of FVC, FEV1 prior to inhaltion of short acting bronchodilators and FEV1 post inhaltion of short acting bronchodilators as covariates and center nested in region as a random effect. FVC measurements within 6 hours of rescue medication use or within 7 days of systemic corticosteroid use were set to missing.

Time Frame	Day 1, Day 29, Day 57 and Days 84/85
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.
Only participants from the full analysis set, who had outcome measure data with applicable fixed effects/covariates according to the analysis model, were analyzed.

Reporting Groups

	Description
NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via single dose dry powder inhaler (SDDPI) plus NVA237 50 ug once daily delivered via SDDPI
Placebo to NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via SDDPI plus placebo to NVA237 delivered via SDDPI

Measured Values

	NVA237 + Indacaterol	Placebo to NVA237 + Indacaterol
Number of Participants Analyzed [units: participants]	**226**	**220**
Forced Vital Capacity (FVC) at Individual Time-points [units: Liters] Least Squares Mean (Standard Error)		
Day 1, 30 min post dose (n=208,199)	**3.214 (0.0181)**	**3.135 (0.0186)**
Day 1, 1 h post dose (n=214,209)	**3.295 (0.0260)**	**3.182 (0.0264)**
Day 1, 2 h post dose (n=212,207)	**3.325 (0.0229)**	**3.200 (0.0234)**
Day 1, 4 h post dose (n=206,213)	**3.340 (0.0239)**	**3.218 (0.0238)**
Day 1, 23 h 15 min post dose (n=201,203)	**3.155 (0.0267)**	**3.039 (0.0268)**

Day 1, 23 h 45 min post dose (n=213,204)	**3.201 (0.0257)**	**3.095 (0.0263)**
Day 29, 45 min pre-dose (n=198,202)	**3.146 (0.0299)**	**3.043 (0.0299)**
Day 29, 15 min pre-dose (n=198,200)	**3.184 (0.0315)**	**3.092 (0.0314)**
Day 29, 30 min post dose (n=202,201)	**3.316 (0.0338)**	**3.201 (0.0341)**
Day 29, 1 h post dose (n=200,199)	**3.362 (0.0336)**	**3.197 (0.0337)**
Day 56, 45 min pre-dose (n=201,202)	**3.102 (0.0302)**	**3.015 (0.0303)**
Day 56, 15 min pre-dose (n=199,198)	**3.156 (0.0321)**	**3.086 (0.0322)**
Day 56, 30 min post dose (n=200,200)	**3.282 (0.0316)**	**3.190 (0.0319)**
Day 56, 1 h post dose (n=197,204)	**3.327 (0.0323)**	**3.219 (0.0321)**
Days 84/85, 45 min pre-dose (n=201,206)	**3.052 (0.0280)**	**3.016 (0.0279)**
Days 84/85, 15 min pre-dose (n=190,196)	**3.064 (0.0256)**	**3.012 (0.0254)**
Days 84/85, 30 min post dose (n=198,199)	**3.246 (0.0262)**	**3.162 (0.0264)**
Days 84/85, 1 h post dose (n=201,200)	**3.312 (0.0291)**	**3.179 (0.0294)**
Days 84/85, 2 h post dose (n=198,201)	**3.318 (0.0261)**	**3.181 (0.0261)**
Days 84/85, 4 h post dose (n=200,198)	**3.251 (0.0292)**	**3.161 (0.0297)**
Days 84/85, 23 h 15 min post dose (n=193,188)	**3.123 (0.0285)**	**3.050 (0.0292)**
Days 84/85, 23 h 45 min post dose (n=197,199)	**3.136 (0.0256)**	**3.047 (0.0258)**

No statistical analysis provided for Forced Vital Capacity (FVC) at Individual Time-points

6. Secondary: Inspiratory Capacity (IC) at Individual Time-points [Time Frame: Day 1, Days 84/85]

Measure Type	Secondary

Measure Title	Inspiratory Capacity (IC) at Individual Time-points
Measure Description	Inspiratory Capacity (IC) was measured at 20 min pre-dose and at post-dose at 25 minutes, 1 hour 55 minutes, 3 hours 55 minutes and 23 hours 40 minutes, by visit. The model contained treatment, baseline smoking status and baseline ICS use as fixed effects with the baseline measurement of IC, FEV1 prior to inhalation of short acting bronchodilators and FEV1 post inhalation of short acting bronchodilators as covariates and center nested in region as a random effect. IC measurements within 6 hours of rescue medication use or within 7 days of systemic corticosteroid use were set to missing.
Time Frame	Day 1, Days 84/85
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.
Only participants from the full analysis set, who had outcome measure data with applicable fixed effects/covariates according to the analysis model, were analyzed.

Reporting Groups

	Description
NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via single dose dry powder inhaler (SDDPI) plus NVA237 50 ug once daily delivered via SDDPI
Placebo to NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via SDDPI plus placebo to NVA237 delivered via SDDPI

Measured Values

	NVA237 + Indacaterol	**Placebo to NVA237 + Indacaterol**
Number of Participants Analyzed [units: participants]	**226**	**220**
Inspiratory Capacity (IC) at Individual Time-points [units: Liters]		

Least Squares Mean (Standard Error)		
Day 1, 25 min post dose (n=164,168)	2.493 (0.0234)	2.434 (0.0231)
Day 1, 1 h 55 min (n=161,176)	2.587 (0.0294)	2.478 (0.0287)
Day 1, 3 h 55 min (n=160,173)	2.557 (0.0298)	2.475 (0.0291)
Days 84/85, 20 min pre-dose (n=144,148)	2.444 (0.0327)	2.363 (0.0324)
Days 84/85, 25 min post dose (n=149,145)	2.580 (0.0372)	2.420 (0.0377)
Days 84/85, 1 h 55 min post dose (n=146,153)	2.607 (0.0388)	2.485 (0.0384)
Days 84/85, 3 h 55 min (n=146,145)	2.577 (0.0332)	2.439 (0.0333)
Days 84/85, 23 h 40 min (n=153,150)	2.405 (0.0371)	2.337 (0.0376)

No statistical analysis provided for Inspiratory Capacity (IC) at Individual Time-points

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

Measure Type	Secondary
Measure Title	Change From Baseline in Mean Daily Number of Puffs of Rescue Medication
Measure Description	The number of puffs of rescue medication taken in the previous 12 hours was recorded in the patient diary in the morning and evening. The total number of puffs of rescue medication per day over the whole active treatment period was calculated and divided by the total number of days with non-missing rescue data to derive the mean daily number of puffs of rescue medication taken for the patient. If the number of puffs was missing for part of the day (either morning or evening), then a half day was used in the denominator.
Time Frame	Baseline, 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.
Only participants from the full analysis set, who had outcome measure data with applicable fixed effects/covariates according to the analysis model, were analyzed.

Reporting Groups

	Description
NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via single dose dry powder inhaler (SDDPI) plus NVA237 50 ug once daily delivered via SDDPI
Placebo to NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via SDDPI plus placebo to NVA237 delivered via SDDPI

Measured Values

	NVA237 + Indacaterol	Placebo to NVA237 + Indacaterol
Number of Participants Analyzed [units: participants]	**219**	**216**
Change From Baseline in Mean Daily Number of Puffs of Rescue Medication [units: Number of puffs] Least Squares Mean (Standard Error)	**-1.9 (0.16)**	**-1.8 (0.16)**

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

8. Secondary: Transitional Dyspnea Index (TDI) Focal Score [Time Frame: baseline, 12 weeks]

Measure Type	Secondary
Measure Title	Transitional Dyspnea Index (TDI) Focal Score
Measure Description	Dyspnea was measured at baseline using the Baseline Dyspnea Index (BDI) and during treatment using the Transitional Dyspnea Index (TDI). Analysis was done via mixed model. The BDI and TDI each have three domains: functional impairment, magnitude of task and magnitude of effort. BDI domains were rated from 0 (severe) to 4

	(unimpaired) and rates summed for baseline focal score ranged from 0 to 12; lower scores mean worse severity. TDI domains were rated from -3 (major deterioration) to 3 (major improvement) and rates summed for transition focal score ranged from -9 to 9; negative scores indicate deterioration. A TDI focal score of 1 is considered a minimal clinically important difference.
Time Frame	baseline, 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.
Only participants from the full analysis set, who had outcome measure data with applicable fixed effects/covariates according to the analysis model, were analyzed.

Reporting Groups

	Description
NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via single dose dry powder inhaler (SDDPI) plus NVA237 50 ug once daily delivered via SDDPI
Placebo to NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via SDDPI plus placebo to NVA237 delivered via SDDPI

Measured Values

	NVA237 + Indacaterol	Placebo to NVA237 + Indacaterol
Number of Participants Analyzed [units: participants]	**207**	**209**
Transitional Dyspnea Index (TDI) Focal Score [units: Score] Least Squares Mean (Standard Error)	**2.506 (0.2781)**	**2.012 (0.2797)**

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

9. Secondary: Change From Baseline in Mean Daily Total and Individual Symptom Scores [Time Frame: Baseline, 12 weeks]

Measure Type	Secondary
Measure Title	Change From Baseline in Mean Daily Total and Individual Symptom Scores
Measure Description	The symptoms (respiratory, cough, wheeze, sputum color, sputum production, breathlessness, sore throat, nasal discharge or congestion, and fever) for the whole active treatment period was analyzed using a mixed model, which contained treatment, baseline smoking status and baseline ICS use as fixed effects with the baseline symptom score, FEV1 prior to inhalation of short acting bronchodilators and FEV1 post inhalation of short acting bronchodilators as covariates and center nested in region as a random effect. Each symptom was scored as 0, 1, 2 or 3 where the description for each score varied. For each of the symptoms, the range of scores from 0 to 3 represented an increase in symptoms where 0 represented little to no symptom and 3 represented severe or worst symptom. The total symptom score, which is the sum of the individual scores, ranged from 0 (best possible outcome) to 27 (worst possible outcome).
Time Frame	Baseline, 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.
Only participants from the full analysis set, who had outcome measure data with applicable fixed effects/covariates according to the analysis model, were analyzed.

Reporting Groups

	Description
NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via single dose dry powder inhaler (SDDPI) plus NVA237 50 ug once daily delivered via SDDPI
Placebo to NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via SDDPI plus placebo to NVA237 delivered via SDDPI

Measured Values

	NVA237 + Indacaterol	Placebo to NVA237 + Indacaterol
Number of Participants Analyzed [units: participants]	**212**	**214**
Change From Baseline in Mean Daily Total and Individual Symptom Scores [units: Score] Least Squares Mean (Standard Error)		
Total symptom score	**-1.2 (0.13)**	**-1.1 (0.13)**
Respiratory symptom score	**-0.3 (0.03)**	**-0.2 (0.03)**
Cough symptom score	**-0.2 (0.03)**	**-0.2 (0.03)**
Wheeze symptom score	**-0.3 (0.03)**	**-0.2 (0.03)**
Sputum production score	**-0.1 (0.03)**	**-0.1 (0.03)**
Sputum color score	**-0.1 (0.02)**	**-0.1 (0.02)**
Breathless symptom score	**-0.2 (0.03)**	**-0.2 (0.03)**
Sore throat symptom score	**0.0 (0.01)**	**0.0 (0.01)**
Cold symptom score	**0.0 (0.02)**	**0.0 (0.02)**
Fever symptom score	**0.0 (0.01)**	**0.0 (0.01)**

No statistical analysis provided for Change From Baseline in Mean Daily Total and Individual Symptom Scores

10. Secondary: Number of Participants With Adverse Events and Serious Adverse Events [Time Frame: 12 weeks]

Measure Type	Secondary
Measure Title	Number of Participants With Adverse Events and Serious Adverse Events

Measure Description	All study emergent adverse events including Chronic Obstructive Pulmonary Disease exacerbations were monitored from screening through the end of study.
Time Frame	12 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: The safety set included all patients who received at least one dose of study drug whether or not they were randomized.

Reporting Groups

	Description
NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via single dose dry powder inhaler (SDDPI) plus NVA237 50 ug once daily delivered via SDDPI
Placebo to NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via SDDPI plus placebo to NVA237 delivered via SDDPI

Measured Values

	NVA237 + Indacaterol	**Placebo to NVA237 + Indacaterol**
Number of Participants Analyzed [units: participants]	**226**	**221**
Number of Participants With Adverse Events and Serious Adverse Events [units: Number of participants]		
Adverse Events (serious and non-serious)	**85**	**75**
Serious adverse events	**5**	**5**
Deaths	**0**	**0**

No statistical analysis provided for Number of Participants With Adverse Events and Serious Adverse Events

Serious Adverse Events

Hide Serious Adverse Events

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

Reporting Groups

	Description
NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via single dose dry powder inhaler (SDDPI) plus NVA237 50 ug once daily delivered via SDDPI
Placebo to NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via SDDPI plus placebo to NVA237 delivered via SDDPI

Serious Adverse Events

	NVA237 + Indacaterol	Placebo to NVA237 + Indacaterol
Total, serious adverse events		
# participants affected / at risk	**5/226 (2.21%)**	**5/221 (2.26%)**
Cardiac disorders		
Angina pectoris † [1]		
# participants affected / at risk	**0/226 (0.00%)**	**1/221 (0.45%)**
Gastrointestinal disorders		
Inguinal hernia † [1]		
# participants affected / at risk	**1/226 (0.44%)**	**0/221 (0.00%)**
Immune system disorders		

Hypersensitivity † 1		
# participants affected / at risk	**1/226 (0.44%)**	**0/221 (0.00%)**
Infections and infestations		
Bacterial infection † 1		
# participants affected / at risk	**1/226 (0.44%)**	**0/221 (0.00%)**
Urinary tract infection † 1		
# participants affected / at risk	**0/226 (0.00%)**	**1/221 (0.45%)**
Injury, poisoning and procedural complications		
Rib fracture † 1		
# participants affected / at risk	**0/226 (0.00%)**	**1/221 (0.45%)**
Musculoskeletal and connective tissue disorders		
Osteitis † 1		
# participants affected / at risk	**1/226 (0.44%)**	**0/221 (0.00%)**
Renal and urinary disorders		
Renal failure acute † 1		
# participants affected / at risk	**0/226 (0.00%)**	**1/221 (0.45%)**
Respiratory, thoracic and mediastinal disorders		
Chronic obstructive pulmonary disease † 1		
# participants affected / at risk	**1/226 (0.44%)**	**2/221 (0.90%)**
Haemoptysis † 1		
# participants affected / at risk	**1/226 (0.44%)**	**0/221 (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
NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via single dose dry powder inhaler (SDDPI) plus NVA237 50 ug once daily delivered via SDDPI
Placebo to NVA237 + Indacaterol	Participants received Indacaterol 150 ug once daily delivered via SDDPI plus placebo to NVA237 delivered via SDDPI

Other Adverse Events

	NVA237 + Indacaterol	Placebo to NVA237 + Indacaterol
Total, other (not including serious) adverse events		
# participants affected / at risk	**32/226 (14.16%)**	**27/221 (12.22%)**
Respiratory, thoracic and mediastinal disorders		
Chronic obstructive pulmonary disease † 1		
# participants affected / at risk	**32/226 (14.16%)**	**27/221 (12.22%)**

† 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 by Novartis

Publications automatically indexed to this study:

Vincken W, Aumann J, Chen H, Henley M, McBryan D, Goyal P. Efficacy and safety of coadministration of once-daily indacaterol and glycopyrronium versus indacaterol alone in COPD patients: the GLOW6 study. Int J Chron Obstruct Pulmon Dis. 2014 Feb 24;9:215-28. doi: 10.2147/COPD.S51592. eCollection 2014.

Responsible Party:	Novartis (Novartis Pharmaceuticals)
ClinicalTrials.gov Identifier:	NCT01604278 History of Changes
Other Study ID Numbers:	**CNVA237A2316** 2011-005673-23 (EudraCT Number)
Study First Received:	May 21, 2012
Results First Received:	July 28, 2014
Last Updated:	November 12, 2014
Health Authority:	United States: Food and Drug Administration Belgium: Federal Agency for Medicinal Products and Health Products Bulgaria: Bulgarian Drug Agency Greece: National Organization of Medicines Hungary: National Institute of Pharmacy Ireland: Irish Medicines Board Russia: Ministry of Health of the Russian Federation Slovakia: State Institute for Drug Control Spain: Agencia Española de Medicamentos y Productos Sanitarios Turkey: Ministry of Health United Kingdom: Medicines and Healthcare Products Regulatory Agency