



## Clinical trial results:

### BI 655066/ABBV-066 (risankizumab) Versus Adalimumab in a Randomized, Double Blind, Parallel Group Trial in Moderate to Severe Plaque Psoriasis to Assess Safety and Efficacy After 16 Weeks of Treatment and After Incomplete Adalimumab Treatment Response (IMMvent)

#### Summary

EudraCT number	2015-003623-65
Trial protocol	DE SE FI PT CZ PL
Global end of trial date	24 August 2017

#### Results information

Result version number	v1 (current)
This version publication date	09 September 2018
First version publication date	09 September 2018

#### Trial information

##### Trial identification

Sponsor protocol code	1311.30
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##### Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT02694523
WHO universal trial number (UTN)	-

Notes:

#### Sponsors

Sponsor organisation name	Boehringer Ingelheim
Sponsor organisation address	Binger Strasse 173, Ingelheim am Rhein, Germany, 55216
Public contact	QRPE Processes and Systems Coordination Clinical Trial Information Disclosure, Boehringer Ingelheim, 001 8002430127, <a href="mailto:clintrriage.rdg@boehringer-ingelheim.com">clintrriage.rdg@boehringer-ingelheim.com</a>
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Notes:

#### Paediatric regulatory details

Is trial part of an agreed paediatric investigation plan (PIP)	No
Does article 45 of REGULATION (EC) No 1901/2006 apply to this trial?	No
Does article 46 of REGULATION (EC) No 1901/2006 apply to this trial?	No

Notes:

## Results analysis stage

Analysis stage	Final
Date of interim/final analysis	05 October 2017
Is this the analysis of the primary completion data?	Yes
Primary completion date	01 February 2017
Global end of trial reached?	Yes
Global end of trial date	24 August 2017
Was the trial ended prematurely?	No

Notes:

## General information about the trial

Main objective of the trial:

The main objectives of this study were to assess the efficacy and safety of risankizumab compared with adalimumab in subjects with moderate to severe chronic plaque psoriasis, and the efficacy and safety of switching to risankizumab compared with continued adalimumab in patients with an inadequate response to adalimumab at Week 16.

Protection of trial subjects:

Only patients that met all the study inclusion and none of the exclusion criteria were to be entered in the study. All patients were free to withdraw from the clinical trial at any time for any reason given. Close monitoring of all patients was adhered to throughout the trial conduct. Rescue medication was allowed for all patients as required.

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	31 March 2016
Long term follow-up planned	No
Independent data monitoring committee (IDMC) involvement?	Yes

Notes:

## Population of trial subjects

### Subjects enrolled per country

Country: Number of subjects enrolled	Canada: 94
Country: Number of subjects enrolled	Czech Republic: 29
Country: Number of subjects enrolled	Finland: 10
Country: Number of subjects enrolled	France: 21
Country: Number of subjects enrolled	Germany: 88
Country: Number of subjects enrolled	Mexico: 21
Country: Number of subjects enrolled	Poland: 79
Country: Number of subjects enrolled	Portugal: 22
Country: Number of subjects enrolled	Sweden: 12
Country: Number of subjects enrolled	Taiwan: 58
Country: Number of subjects enrolled	United States: 250
Worldwide total number of subjects	684
EEA total number of subjects	261

Notes:

<b>Subjects enrolled per age group</b>	
In utero	0
Preterm newborn - gestational age < 37 wk	0
Newborns (0-27 days)	0
Infants and toddlers (28 days-23 months)	0
Children (2-11 years)	0
Adolescents (12-17 years)	0
Adults (18-64 years)	621
From 65 to 84 years	63
85 years and over	0

## Subject disposition

### Recruitment

Recruitment details:

Confirmatory, Randomized, DoubleBlind, DoubleDummy, ActiveControlled, ParallelDesign trial to compare risankizumab with adalimumab in patients with moderate to severe chronic plaque psoriasis. Randomization ratio was 1:1 to risankizumab or adalimumab, stratified by weight and by prior exposure to TNF antagonists. 684 were enrolled and 605 were treated.

### Pre-assignment

Screening details:

Patients were randomized to adalimumab or risankizumab in Part A. Who received risankizumab continued risankizumab in Part B; adalimumab responders ( $\geq$  Psoriasis Area and Severity Index (PASI) 90) continued adalimumab, nonresponders ( $<$  PASI 50) switched to risankizumab, inadequate responders (PASI 50 to  $<$  PASI 90) were rerandomized to adalimumab or risankizumab in Part B.

### Period 1

Period 1 title	Part A
Is this the baseline period?	Yes
Allocation method	Randomised - controlled
Blinding used	Double blind
Roles blinded	Subject, Investigator

Blinding implementation details:

This was a double-blind trial. Patients were randomized in blocks to double-blind treatments.

### Arms

Are arms mutually exclusive?	Yes
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<b>Arm title</b>	Adalimumab (Part A)
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Arm description:

Participants randomized to receive double-blind adalimumab 80 milligram (mg) at Week 0, then 40 mg at Week 1 and every 2 weeks for 15 weeks (Part A).

Arm type	Active comparator
Investigational medicinal product name	Adalimumab
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Subcutaneous use

Dosage and administration details:

Participants randomized to receive double-blind adalimumab 80 mg at Week 0, then 40 mg at Week 1 and every 2 weeks for 15 weeks (Part A).

<b>Arm title</b>	Risankizumab (Part A)
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Arm description:

Participants randomized to receive risankizumab at Weeks 0 and 4 (Part A) continued to receive risankizumab at Weeks 16 and 28.

Arm type	Experimental
Investigational medicinal product name	Risankizumab
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Subcutaneous use

Dosage and administration details:

Participants randomized to receive risankizumab at Weeks 0 and 4 (Part A) continued to receive risankizumab at Weeks 16 and 28.

<b>Number of subjects in period 1<sup>[1]</sup></b>	Adalimumab (Part A)	Risankizumab (Part A)
Started	304	301
Completed	291	294
Not completed	13	7
Consent withdrawn by subject	3	1
Adverse event, non-fatal	7	3
Not Specified	1	1
Lost to follow-up	1	2
Protocol deviation	1	-

Notes:

[1] - The number of subjects reported to be in the baseline period are not the same as the worldwide number enrolled in the trial. It is expected that these numbers will be the same.

Justification: Baseline characteristics are based on patients who were randomised after successfully completing the screening period and received at least one dose of the trial medication.

## Period 2

Period 2 title	Part B
Is this the baseline period?	No
Allocation method	Randomised - controlled
Blinding used	Double blind
Roles blinded	Subject, Investigator

Blinding implementation details:

This was a double-blind trial. Patients were randomized in blocks to double-blind treatments.

## Arms

Are arms mutually exclusive?	Yes
<b>Arm title</b>	Risankizumab/Risankizumab (Part B)

Arm description:

Participants randomized to receive double-blind risankizumab in Part A continued to receive risankizumab 150 mg at Weeks 16, and 28 (Part B).

Arm type	Experimental
Investigational medicinal product name	Risankizumab
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Subcutaneous use

Dosage and administration details:

Participants randomized to receive double-blind risankizumab in Part A continued to receive risankizumab 150 mg at Weeks 16, and 28 (Part B).

<b>Arm title</b>	Adalimumab/Adalimumab (Part B)
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Arm description:

Participants who were responders after receiving adalimumab in Part A continued adalimumab 40 mg every other week through Week 41 (Part B).

Arm type	Active comparator
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Investigational medicinal product name	Adalimumab
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Subcutaneous use

Dosage and administration details:

Participants who were responders after receiving adalimumab in Part A continued adalimumab 40 mg every other week through Week 41 (Part B).

<b>Arm title</b>	Adalimumab/Risankizumab (Part B)
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Arm description:

Participants who were nonresponders after receiving adalimumab in Part A switched to risankizumab 150 mg at Weeks 16, 20, and 32 (Part B).

Arm type	Experimental
Investigational medicinal product name	Risankizumab
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Subcutaneous use

Dosage and administration details:

Participants who were nonresponders after receiving adalimumab in Part A switched to risankizumab 150 mg at Weeks 16, 20, and 32 (Part B).

<b>Arm title</b>	Adalimumab/Rerandomized to Adalimumab (Part B)
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Arm description:

Participants who were inadequate responders after receiving adalimumab in Part A, and re-randomized to continue to receive adalimumab 40 mg every 2 weeks through Week 41 (Part B).

Arm type	Active comparator
Investigational medicinal product name	Adalimumab
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Subcutaneous use

Dosage and administration details:

Participants who were inadequate responders after receiving adalimumab in Part A, and re-randomized to continue to receive adalimumab 40 mg every 2 weeks through Week 41 (Part B).

<b>Arm title</b>	Adalimumab/Rerandomized to Risankizumab (Part B)
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Arm description:

Participants who were inadequate responders after receiving adalimumab in Part A, and re-randomized to receive risankizumab 150 mg at Weeks 16, 20, and 32 (Part B).

Arm type	Experimental
Investigational medicinal product name	Risankizumab
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Subcutaneous use

Dosage and administration details:

Participants who were inadequate responders after receiving adalimumab in Part A, and re-randomized to receive risankizumab 150 mg at Weeks 16, 20, and 32 (Part B).

<b>Number of subjects in period 2</b>	<b>Risankizumab/Risankizumab (Part B)</b>	<b>Adalimumab/Adalimumab (Part B)</b>	<b>Adalimumab/Risankizumab (Part B)</b>
Started	294	144	38
Completed	274	140	34
Not completed	20	4	4
Consent withdrawn by subject	9	-	1
Adverse event, non-fatal	7	1	1
Not Specified	1	-	-
Lost to follow-up	2	3	2
Protocol deviation	1	-	-

<b>Number of subjects in period 2</b>	<b>Adalimumab/Rerandomized to Adalimumab (Part B)</b>	<b>Adalimumab/Rerandomized to Risankizumab (Part B)</b>
Started	56	53
Completed	51	51
Not completed	5	2
Consent withdrawn by subject	3	-
Adverse event, non-fatal	2	-
Not Specified	-	1
Lost to follow-up	-	1
Protocol deviation	-	-

## Baseline characteristics

### Reporting groups

Reporting group title	Adalimumab (Part A)
Reporting group description:	
Participants randomized to receive double-blind adalimumab 80 milligram (mg) at Week 0, then 40 mg at Week 1 and every 2 weeks for 15 weeks (Part A).	
Reporting group title	Risankizumab (Part A)
Reporting group description:	
Participants randomized to receive risankizumab at Weeks 0 and 4 (Part A) continued to receive risankizumab at Weeks 16 and 28.	

Reporting group values	Adalimumab (Part A)	Risankizumab (Part A)	Total
Number of subjects	304	301	605
Age categorical			
Units: Subjects			

Age Continuous			
Age at the time of signing informed consent form is presented. Intent-to-treat population in Part A (ITT_A): All subjects randomized at Baseline.			
Units: years			
arithmetic mean	47.0	45.3	
standard deviation	± 13.09	± 13.79	-
Sex: Female, Male			
Number of subjects is categorized as Male or Female. Intent-to-treat population in Part A (ITT_A): All subjects randomized at Baseline.			
Units: Subjects			
Female	92	91	183
Male	212	210	422
Race (NIH/OMB)			
Number of subjects is categorized for race data. Intent-to-treat population in Part A (ITT_A): All subjects randomized at Baseline.			
Units: Subjects			
American Indian or Alaska Native	0	2	2
Asian	35	41	76
Native Hawaiian or Other Pacific Islander	0	0	0
Black or African American	6	11	17
White	263	245	508
More than one race	0	2	2
Unknown or Not Reported	0	0	0
Ethnicity (NIH/OMB)			
Number of subjects is categorized for ethnicity data. Intent-to-treat population in Part A (ITT_A): All subjects randomized at Baseline.			
Units: Subjects			
Hispanic or Latino	59	44	103
Not Hispanic or Latino	245	257	502



## End points

### End points reporting groups

Reporting group title	Adalimumab (Part A)
Reporting group description: Participants randomized to receive double-blind adalimumab 80 milligram (mg) at Week 0, then 40 mg at Week 1 and every 2 weeks for 15 weeks (Part A).	
Reporting group title	Risankizumab (Part A)
Reporting group description: Participants randomized to receive risankizumab at Weeks 0 and 4 (Part A) continued to receive risankizumab at Weeks 16 and 28.	
Reporting group title	Risankizumab/Risankizumab (Part B)
Reporting group description: Participants randomized to receive double-blind risankizumab in Part A continued to receive risankizumab 150 mg at Weeks 16, and 28 (Part B).	
Reporting group title	Adalimumab/Adalimumab (Part B)
Reporting group description: Participants who were responders after receiving adalimumab in Part A continued adalimumab 40 mg every other week through Week 41 (Part B).	
Reporting group title	Adalimumab/Risankizumab (Part B)
Reporting group description: Participants who were nonresponders after receiving adalimumab in Part A switched to risankizumab 150 mg at Weeks 16, 20, and 32 (Part B).	
Reporting group title	Adalimumab/Rerandomized to Adalimumab (Part B)
Reporting group description: Participants who were inadequate responders after receiving adalimumab in Part A, and re-randomized to continue to receive adalimumab 40 mg every 2 weeks through Week 41 (Part B).	
Reporting group title	Adalimumab/Rerandomized to Risankizumab (Part B)
Reporting group description: Participants who were inadequate responders after receiving adalimumab in Part A, and re-randomized to receive risankizumab 150 mg at Weeks 16, 20, and 32 (Part B).	

### Primary: Percentage of Participants Achieving 90% Improvement in Psoriasis Area and Severity Index (PASI) Score (PASI90) at Week 16 (Part A)

End point title	Percentage of Participants Achieving 90% Improvement in Psoriasis Area and Severity Index (PASI) Score (PASI90) at Week 16 (Part A)
End point description: PASI is a composite score based on the degree of effect on body surface area of psoriasis and the extension of erythema (reddening), induration (thickness), desquamation (scaling) of the lesions and area affected as observed on the day of examination. The severity of each sign was assessed using a 5-point scale, where 0=no symptoms, 1=slight, 2=moderate, 3=marked, 4=very marked. The PASI score ranges from 0 to 72, where 0 indicates no psoriasis and 72 indicates very severe psoriasis. PASI90 is defined as at least a 90% reduction in PASI score compared with the Baseline PASI score. The percent reduction in score is calculated as (PASI score at Baseline - score at follow-up visit) / PASI score at Baseline * 100. Nonresponder imputation (NRI) was used for missing data. Intent-to-treat population in Part A (ITT_A): All subjects randomized at Baseline.	
End point type	Primary
End point timeframe: Week 16	

End point values	Adalimumab (Part A)	Risankizumab (Part A)		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	304 <sup>[1]</sup>	301 <sup>[2]</sup>		
Units: Percentage of participants				
number (not applicable)	47.4	72.4		

Notes:

[1] - ITT\_A population

[2] - ITT\_A population

## Statistical analyses

Statistical analysis title	Statistical Analysis 1
Statistical analysis description:	
P-value calculated according to the Cochran-Mantel-Haenszel test adjusted for baseline weight ( $\leq 100$ kilogram (kg) vs $> 100$ kg) and prior exposure to Tumor Necrosis Factor (TNF) antagonists (0 vs $\geq 1$ ).	
Comparison groups	Adalimumab (Part A) v Risankizumab (Part A)
Number of subjects included in analysis	605
Analysis specification	Pre-specified
Analysis type	other
P-value	$< 0.001$
Method	Cochran-Mantel-Haenszel
Parameter estimate	Difference in percentage of participants
Point estimate	24.9
Confidence interval	
level	95 %
sides	2-sided
lower limit	17.5
upper limit	32.4

## Primary: Percentage of Participants Achieving Static Physician Global Assessment (sPGA) score of Clear or Almost Clear at Week 16 (Part A)

End point title	Percentage of Participants Achieving Static Physician Global Assessment (sPGA) score of Clear or Almost Clear at Week 16 (Part A)
End point description:	
The sPGA is an assessment by the investigator of the overall disease severity at the time of evaluation. Erythema (E), induration (I), and desquamation (D) are scored on a 5-point scale ranging from 0 (none) to 4 (severe). The sPGA ranges from 0 to 4, and is calculated as Clear (0) = 0 for all three; Almost clear (1) = mean $> 0$ , $< 1.5$ ; Mild (2) = mean $\geq 1.5$ , $< 2.5$ ; Moderate (3) = mean $\geq 2.5$ , $< 3.5$ ; and Severe (4) = mean $\geq 3.5$ . No Response Imputation (NRI) was used for missing data.	
End point type	Primary
End point timeframe:	
Week 16	

End point values	Adalimumab (Part A)	Risankizumab (Part A)		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	304 <sup>[3]</sup>	301 <sup>[4]</sup>		
Units: Percentage of participants				
number (not applicable)	60.2	83.7		

Notes:

[3] - ITT\_A population

[4] - ITT\_A population

## Statistical analyses

Statistical analysis title	Statistical Analysis 2
Statistical analysis description:	
P-value calculated according to the Cochran-Mantel-Haenszel test adjusted for baseline weight ( $\leq 100$ kg vs $> 100$ kg) and prior exposure to TNF antagonists (0 vs $\geq 1$ ).	
Comparison groups	Adalimumab (Part A) v Risankizumab (Part A)
Number of subjects included in analysis	605
Analysis specification	Pre-specified
Analysis type	other
P-value	$< 0.001$
Method	Cochran-Mantel-Haenszel
Parameter estimate	Difference in percentage of participants
Point estimate	23.3
Confidence interval	
level	95 %
sides	2-sided
lower limit	16.6
upper limit	30.1

## Primary: Percentage of Participants Who Were Re-Randomized to Receive Either Adalimumab or Risankizumab in Part B Achieving PASI90 at Week 44 (Part B)

End point title	Percentage of Participants Who Were Re-Randomized to Receive Either Adalimumab or Risankizumab in Part B Achieving PASI90 at Week 44 (Part B)
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End point description:

PASI is a composite score based on the degree of effect on body surface area of psoriasis and the extension of erythema (reddening), induration (thickness), desquamation (scaling) of the lesions and area affected as observed on the day of examination. The severity of each sign was assessed using a 5-point scale, where 0=no symptoms, 1=slight, 2=moderate, 3=marked, 4=very marked. The PASI score ranges from 0 to 72, where 0 indicates no psoriasis and 72 indicates very severe psoriasis. PASI90 is defined as at least a 90% reduction in PASI score compared with the Baseline PASI score. The percent reduction in score is calculated as (PASI score at Baseline - score at follow-up visit) / PASI score at Baseline \* 100. NRI was used for missing data. Intent-to-treat population in Part B who were re-randomized (ITT\_B\_RR): All subjects who started with adalimumab at Baseline and were re-randomized at Week 16.

End point type	Primary
End point timeframe:	
Week 44	

End point values	Adalimumab/Rerandomized to Adalimumab (Part B)	Adalimumab/Rerandomized to Risankizumab (Part B)		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	56 <sup>[5]</sup>	53 <sup>[6]</sup>		
Units: Percentage of participants				
number (not applicable)	21.4	66.0		

Notes:

[5] - ITT\_B\_RR population

[6] - ITT\_B\_RR population

## Statistical analyses

Statistical analysis title	Statistical Analysis 3
Statistical analysis description:	
P-value calculated according to the Cochran-Mantel-Haenszel test adjusted for baseline weight ( $\leq 100$ kg vs $> 100$ kg) and prior exposure to TNF antagonists (0 vs $\geq 1$ ).	
Comparison groups	Adalimumab/Rerandomized to Adalimumab (Part B) v Adalimumab/Rerandomized to Risankizumab (Part B)
Number of subjects included in analysis	109
Analysis specification	Pre-specified
Analysis type	other
P-value	$< 0.001$
Method	Cochran-Mantel-Haenszel
Parameter estimate	Difference in percentage of participants
Point estimate	45
Confidence interval	
level	95 %
sides	2-sided
lower limit	28.9
upper limit	61.1

## Secondary: Percentage of Participants Achieving PASI75 at Week 16 (Part A)

End point title	Percentage of Participants Achieving PASI75 at Week 16 (Part A)
End point description:	
<p>PASI is a composite score based on the degree of effect on body surface area of psoriasis and the extension of erythema (reddening), induration (thickness), desquamation (scaling) of the lesions and area affected as observed on the day of examination. The severity of each sign was assessed using a 5-point scale, where 0=no symptoms, 1=slight, 2=moderate, 3=marked, 4=very marked. The PASI score ranges from 0 to 72, where 0 indicates no psoriasis and 72 indicates very severe psoriasis. PASI75 is defined as at least a 75% reduction in PASI score compared with the Baseline PASI score. The percent reduction in score is calculated as (PASI score at Baseline - score at follow-up visit) / PASI score at Baseline * 100. NRI was used for missing data.</p>	
End point type	Secondary
End point timeframe:	
Week 16	

End point values	Adalimumab (Part A)	Risankizumab (Part A)		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	304 <sup>[7]</sup>	301 <sup>[8]</sup>		
Units: Percentage of participants				
number (not applicable)	71.7	90.7		

Notes:

[7] - ITT\_A population

[8] - ITT\_A population

## Statistical analyses

Statistical analysis title	Statistical Analysis 4
Statistical analysis description:	
P-value calculated according to the Cochran-Mantel-Haenszel test adjusted for baseline weight ( $\leq 100$ kg vs $> 100$ kg) and prior exposure to TNF antagonists (0 vs $\geq 1$ ).	
Comparison groups	Adalimumab (Part A) v Risankizumab (Part A)
Number of subjects included in analysis	605
Analysis specification	Pre-specified
Analysis type	other
P-value	$< 0.001$
Method	Cochran-Mantel-Haenszel
Parameter estimate	Difference in percentage of participants
Point estimate	18.9
Confidence interval	
level	95 %
sides	2-sided
lower limit	13
upper limit	24.9

## Secondary: Percentage of Participants Achieving PASI100 at Week 16 (Part A)

End point title	Percentage of Participants Achieving PASI100 at Week 16 (Part A)
End point description:	
<p>PASI is a composite score based on the degree of effect on body surface area of psoriasis and the extension of erythema (reddening), induration (thickness), desquamation (scaling) of the lesions and area affected as observed on the day of examination. The severity of each sign was assessed using a 5-point scale, where 0=no symptoms, 1=slight, 2=moderate, 3=marked, 4=very marked. The PASI score ranges from 0 to 72, where 0 indicates no psoriasis and 72 indicates very severe psoriasis. PASI100 is defined as a 100% reduction in PASI score compared with the Baseline PASI score. The percent reduction in score is calculated as (PASI score at Baseline - score at follow-up visit) / PASI score at Baseline * 100. NRI was used for missing data.</p>	
End point type	Secondary
End point timeframe:	
Week 16	

End point values	Adalimumab (Part A)	Risankizumab (Part A)		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	304 <sup>[9]</sup>	301 <sup>[10]</sup>		
Units: Percentage of participants				
number (not applicable)	23.0	39.9		

Notes:

[9] - ITT\_A population

[10] - ITT\_A population

## Statistical analyses

Statistical analysis title	Statistical Analysis 5
Statistical analysis description:	
P-value calculated according to the Cochran-Mantel-Haenszel test adjusted for baseline weight ( $\leq 100$ kg vs $> 100$ kg) and prior exposure to TNF antagonists (0 vs $\geq 1$ ).	
Comparison groups	Adalimumab (Part A) v Risankizumab (Part A)
Number of subjects included in analysis	605
Analysis specification	Pre-specified
Analysis type	other
P-value	$< 0.001$
Method	Cochran-Mantel-Haenszel
Parameter estimate	Difference in percentage of participants
Point estimate	16.7
Confidence interval	
level	95 %
sides	2-sided
lower limit	9.5
upper limit	23.9

## Secondary: Percentage of Participants Who Were Re-Randomized to Receive Either Adalimumab or Risankizumab in Part B Achieving PASI100 at Week 44 (Part B)

End point title	Percentage of Participants Who Were Re-Randomized to Receive Either Adalimumab or Risankizumab in Part B Achieving PASI100 at Week 44 (Part B)
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End point description:

PASI is a composite score based on the degree of effect on body surface area of psoriasis and the extension of erythema (reddening), induration (thickness), desquamation (scaling) of the lesions and area affected as observed on the day of examination. The severity of each sign was assessed using a 5-point scale, where 0=no symptoms, 1=slight, 2=moderate, 3=marked, 4=very marked. The PASI score ranges from 0 to 72, where 0 indicates no psoriasis and 72 indicates very severe psoriasis. PASI100 is defined as a 100% reduction in PASI score compared with the Baseline PASI score. The percent reduction in score is calculated as (PASI score at Baseline - score at follow-up visit) / PASI score at Baseline \* 100. NRI was used for missing data.

End point type	Secondary
End point timeframe:	
Week 44	

End point values	Adalimumab/Rerandomized to Adalimumab (Part B)	Adalimumab/Rerandomized to Risankizumab (Part B)		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	56 <sup>[11]</sup>	53 <sup>[12]</sup>		
Units: Percentage of participants				
number (not applicable)	7.1	39.6		

Notes:

[11] - ITT\_B\_RR population

[12] - ITT\_B\_RR population

## Statistical analyses

Statistical analysis title	Statistical Analysis 6
Statistical analysis description:	
P-value calculated according to the Cochran-Mantel-Haenszel test adjusted for baseline weight ( $\leq 100$ kg vs $> 100$ kg) and prior exposure to TNF antagonists (0 vs $\geq 1$ ).	
Comparison groups	Adalimumab/Rerandomized to Adalimumab (Part B) v Adalimumab/Rerandomized to Risankizumab (Part B)
Number of subjects included in analysis	109
Analysis specification	Pre-specified
Analysis type	other
P-value	$< 0.001$
Method	Cochran-Mantel-Haenszel
Parameter estimate	Difference in percentage of participants
Point estimate	32.8
Confidence interval	
level	95 %
sides	2-sided
lower limit	18.8
upper limit	46.9

## Secondary: Percentage of Participants Who Were Re-Randomized to Receive Either Adalimumab or Risankizumab in Part B Achieving sPGA score of Clear at Week 44 (Part B)

End point title	Percentage of Participants Who Were Re-Randomized to Receive Either Adalimumab or Risankizumab in Part B Achieving sPGA score of Clear at Week 44 (Part B)
End point description:	
The sPGA is an assessment by the investigator of the overall disease severity at the time of evaluation. Erythema (E), induration (I), and desquamation (D) are scored on a 5-point scale ranging from 0 (none) to 4 (severe). The sPGA ranges from 0 to 4, and is calculated as Clear (0) = 0 for all three; Almost clear (1) = mean $>0$ , $<1.5$ ; Mild (2) = mean $\geq 1.5$ , $<2.5$ ; Moderate (3) = mean $\geq 2.5$ , $<3.5$ ; and Severe (4) = mean $\geq 3.5$ . NRI was used for missing data.	
End point type	Secondary
End point timeframe:	
Week 44	

End point values	Adalimumab/Rerandomized to Adalimumab (Part B)	Adalimumab/Rerandomized to Risankizumab (Part B)		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	56 <sup>[13]</sup>	53 <sup>[14]</sup>		
Units: Percentage of participants				
number (not applicable)	7.1	39.6		

Notes:

[13] - ITT\_B\_RR population

[14] - ITT\_B\_RR population

## Statistical analyses

Statistical analysis title	Statistical Analysis 7
Statistical analysis description:	
P-value calculated according to the Cochran-Mantel-Haenszel test adjusted for baseline weight ( $\leq 100$ kg vs $> 100$ kg) and prior exposure to TNF antagonists (0 vs $\geq 1$ ).	
Comparison groups	Adalimumab/Rerandomized to Adalimumab (Part B) v Adalimumab/Rerandomized to Risankizumab (Part B)
Number of subjects included in analysis	109
Analysis specification	Pre-specified
Analysis type	other
P-value	$< 0.001$
Method	Cochran-Mantel-Haenszel
Parameter estimate	Difference in percentage of participants
Point estimate	32.8
Confidence interval	
level	95 %
sides	2-sided
lower limit	18.8
upper limit	46.9

## Other pre-specified: Percentage of Participants Who Were Re-Randomized to Receive Either Adalimumab or Risankizumab in Part B Achieving sPGA score of Clear or Almost Clear at Week 44 (Part B)

End point title	Percentage of Participants Who Were Re-Randomized to Receive Either Adalimumab or Risankizumab in Part B Achieving sPGA score of Clear or Almost Clear at Week 44 (Part B)
End point description:	
The sPGA is an assessment by the investigator of the overall disease severity at the time of evaluation. Erythema (E), induration (I), and desquamation (D) are scored on a 5-point scale ranging from 0 (none) to 4 (severe). The sPGA ranges from 0 to 4, and is calculated as Clear (0) = 0 for all three; Almost clear (1) = mean $>0$ , $<1.5$ ; Mild (2) = mean $\geq 1.5$ , $<2.5$ ; Moderate (3) = mean $\geq 2.5$ , $<3.5$ ; and Severe (4) = mean $\geq 3.5$ . NRI was used for missing data.	
End point type	Other pre-specified
End point timeframe:	
Week 44	



<b>End point values</b>	Adalimumab/Rerandomized to Adalimumab (Part B)	Adalimumab/Rerandomized to Risankizumab (Part B)		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	56 <sup>[15]</sup>	53 <sup>[16]</sup>		
Units: Percentage of participants				
number (not applicable)	33.9	73.6		

Notes:

[15] - ITT\_B\_RR population

[16] - ITT\_B\_RR population

## Statistical analyses

<b>Statistical analysis title</b>	Statistical Analysis 8
Statistical analysis description:	
P-value calculated according to the Cochran-Mantel-Haenszel test adjusted for baseline weight ( $\leq 100$ kg vs $> 100$ kg) and prior exposure to TNF antagonists (0 vs $\geq 1$ ).	
Comparison groups	Adalimumab/Rerandomized to Adalimumab (Part B) v Adalimumab/Rerandomized to Risankizumab (Part B)
Number of subjects included in analysis	109
Analysis specification	Pre-specified
Analysis type	other
P-value	$< 0.001$
Method	Cochran-Mantel-Haenszel
Parameter estimate	Difference in percentage of participants
Point estimate	38.9
Confidence interval	
level	95 %
sides	2-sided
lower limit	22
upper limit	55.8

## Adverse events

### Adverse events information

Timeframe for reporting adverse events:

Treatment-emergent adverse events (TEAEs) and serious adverse events (TESAEs) were collected from first dose of study drug until 15 weeks after the last dose of study drug, up to 48 weeks

Adverse event reporting additional description:

AEs in Part A defined as events from the first dose of drug in Part A until prior to the first dose in Part B (Week16) or up to 15 weeks after the last dose of study drug if the participant discontinued in Part A;

AEs in Part B defined as events from first dose of drug in Part B (Week16) until up to 15 weeks after last dose of study drug.

Assessment type	Systematic
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### Dictionary used

Dictionary name	MedDRA
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Dictionary version	20.0
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### Reporting groups

Reporting group title	Adalimumab (Part A)
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Reporting group description:

Participants randomized to receive double-blind adalimumab 80 mg at Week 0, then 40 milligram (mg) at Week 1 and every 2 weeks for 15 weeks (Part A).

Reporting group title	Risankizumab (Part A)
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Reporting group description:

Participants randomized to receive risankizumab at Weeks 0 and 4 (Part A) continued to receive risankizumab at Weeks 16 and 28.

Reporting group title	Adalimumab/Rerandomized to Adalimumab (Part B)
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Reporting group description:

Participants who were inadequate responders after receiving adalimumab in Part A, and re-randomized to continue to receive adalimumab 40 mg every 2 weeks through Week 41 (Part B).

Reporting group title	Adalimumab/Rerandomized to Risankizumab (Part B)
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Reporting group description:

Participants who were inadequate responders after receiving adalimumab in Part A, and re-randomized to receive risankizumab 150 mg at Weeks 16, 20, and 32 (Part B).

Reporting group title	Adalimumab/Risankizumab (Part B)
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Reporting group description:

Participants who were nonresponders after receiving adalimumab in Part A switched to risankizumab 150 mg at Weeks 16, 20, and 32 (Part B).

Reporting group title	Risankizumab/Risankizumab (Part B)
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Reporting group description:

Participants randomized to receive double-blind risankizumab in Part A continued to receive risankizumab 150 mg at Weeks 16, and 28 (Part B).

Serious adverse events	Adalimumab (Part A)	Risankizumab (Part A)	Adalimumab/Rerandomized to Adalimumab (Part B)
Total subjects affected by serious adverse events			
subjects affected / exposed	9 / 304 (2.96%)	10 / 301 (3.32%)	2 / 56 (3.57%)
number of deaths (all causes)	2	1	2
number of deaths resulting from adverse events	1	0	0

Neoplasms benign, malignant and unspecified (incl cysts and polyps)			
Basal cell carcinoma			
subjects affected / exposed	0 / 304 (0.00%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Gallbladder cancer			
subjects affected / exposed	1 / 304 (0.33%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	1 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	1 / 1	0 / 0	0 / 0
Invasive lobular breast carcinoma			
subjects affected / exposed	0 / 304 (0.00%)	1 / 301 (0.33%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 1	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Prostate cancer			
subjects affected / exposed	0 / 304 (0.00%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Vascular disorders			
Hypertensive crisis			
subjects affected / exposed	1 / 304 (0.33%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	1 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Surgical and medical procedures			
Abortion induced			
subjects affected / exposed	0 / 304 (0.00%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Reproductive system and breast disorders			
Haemorrhagic ovarian cyst			
subjects affected / exposed	1 / 304 (0.33%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Respiratory, thoracic and mediastinal disorders			

Asthma	subjects affected / exposed	0 / 304 (0.00%)	1 / 301 (0.33%)	0 / 56 (0.00%)
	occurrences causally related to treatment / all	0 / 0	1 / 1	0 / 0
	deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Respiratory failure	subjects affected / exposed	0 / 304 (0.00%)	1 / 301 (0.33%)	0 / 56 (0.00%)
	occurrences causally related to treatment / all	0 / 0	0 / 1	0 / 0
	deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Psychiatric disorders				
Alcohol withdrawal syndrome	subjects affected / exposed	0 / 304 (0.00%)	0 / 301 (0.00%)	0 / 56 (0.00%)
	occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
	deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Anxiety	subjects affected / exposed	0 / 304 (0.00%)	0 / 301 (0.00%)	0 / 56 (0.00%)
	occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
	deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Depression	subjects affected / exposed	0 / 304 (0.00%)	1 / 301 (0.33%)	0 / 56 (0.00%)
	occurrences causally related to treatment / all	0 / 0	0 / 1	0 / 0
	deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Suicide attempt	subjects affected / exposed	1 / 304 (0.33%)	1 / 301 (0.33%)	0 / 56 (0.00%)
	occurrences causally related to treatment / all	0 / 1	0 / 1	0 / 0
	deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Investigations				
Anticoagulation drug level above therapeutic	subjects affected / exposed	0 / 304 (0.00%)	0 / 301 (0.00%)	0 / 56 (0.00%)
	occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
	deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Injury, poisoning and procedural complications				
Fall				

subjects affected / exposed	0 / 304 (0.00%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Joint dislocation			
subjects affected / exposed	0 / 304 (0.00%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Radius fracture			
subjects affected / exposed	0 / 304 (0.00%)	1 / 301 (0.33%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 1	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Respiratory fume inhalation disorder			
subjects affected / exposed	0 / 304 (0.00%)	1 / 301 (0.33%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 1	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Upper limb fracture			
subjects affected / exposed	0 / 304 (0.00%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Congenital, familial and genetic disorders			
Macrocornea			
subjects affected / exposed	0 / 304 (0.00%)	1 / 301 (0.33%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 1	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Cardiac disorders			
Acute myocardial infarction			
subjects affected / exposed	0 / 304 (0.00%)	1 / 301 (0.33%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 1	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 1	0 / 0
Cardiac failure congestive			
subjects affected / exposed	1 / 304 (0.33%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	1 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0

Coronary artery occlusion			
subjects affected / exposed	0 / 304 (0.00%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Myocardial infarction			
subjects affected / exposed	0 / 304 (0.00%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Palpitations			
subjects affected / exposed	0 / 304 (0.00%)	0 / 301 (0.00%)	1 / 56 (1.79%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Nervous system disorders			
Syncope			
subjects affected / exposed	1 / 304 (0.33%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	1 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Blood and lymphatic system disorders			
Lymphadenopathy mediastinal			
subjects affected / exposed	0 / 304 (0.00%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Eye disorders			
Macular hole			
subjects affected / exposed	0 / 304 (0.00%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Gastrointestinal disorders			
Abdominal pain			
subjects affected / exposed	1 / 304 (0.33%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Gastric perforation			

subjects affected / exposed	1 / 304 (0.33%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Gastritis			
subjects affected / exposed	0 / 304 (0.00%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Pancreatitis			
subjects affected / exposed	1 / 304 (0.33%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Hepatobiliary disorders			
Cholelithiasis			
subjects affected / exposed	1 / 304 (0.33%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Liver injury			
subjects affected / exposed	0 / 304 (0.00%)	1 / 301 (0.33%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 1	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Musculoskeletal and connective tissue disorders			
Back pain			
subjects affected / exposed	0 / 304 (0.00%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Musculoskeletal chest pain			
subjects affected / exposed	0 / 304 (0.00%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Infections and infestations			
Abdominal abscess			
subjects affected / exposed	1 / 304 (0.33%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 1	0 / 0	0 / 0

Erysipelas			
subjects affected / exposed	0 / 304 (0.00%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Influenza			
subjects affected / exposed	0 / 304 (0.00%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Perirectal abscess			
subjects affected / exposed	0 / 304 (0.00%)	1 / 301 (0.33%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 1	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Pneumonia			
subjects affected / exposed	0 / 304 (0.00%)	1 / 301 (0.33%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 1	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Sepsis			
subjects affected / exposed	1 / 304 (0.33%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 1	0 / 0	0 / 0
Urinary tract infection			
subjects affected / exposed	0 / 304 (0.00%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Metabolism and nutrition disorders			
Diabetes mellitus			
subjects affected / exposed	1 / 304 (0.33%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Diabetes mellitus inadequate control			
subjects affected / exposed	0 / 304 (0.00%)	0 / 301 (0.00%)	1 / 56 (1.79%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Diabetic ketoacidosis			



subjects affected / exposed	1 / 304 (0.33%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0

<b>Serious adverse events</b>	Adalimumab/Rerandomized to Risankizumab (Part B)	Adalimumab/Risankizumab (Part B)	Risankizumab/Risankizumab (Part B)
Total subjects affected by serious adverse events			
subjects affected / exposed	3 / 53 (5.66%)	4 / 38 (10.53%)	12 / 294 (4.08%)
number of deaths (all causes)	0	0	0
number of deaths resulting from adverse events	0	0	0
Neoplasms benign, malignant and unspecified (incl cysts and polyps)			
Basal cell carcinoma			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	1 / 294 (0.34%)
occurrences causally related to treatment / all	0 / 0	0 / 0	1 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Gallbladder cancer			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Invasive lobular breast carcinoma			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Prostate cancer			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	1 / 294 (0.34%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Vascular disorders			
Hypertensive crisis			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Surgical and medical procedures			
Abortion induced			

subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	1 / 294 (0.34%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Reproductive system and breast disorders			
Haemorrhagic ovarian cyst			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Respiratory, thoracic and mediastinal disorders			
Asthma			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Respiratory failure			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Psychiatric disorders			
Alcohol withdrawal syndrome			
subjects affected / exposed	0 / 53 (0.00%)	1 / 38 (2.63%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 1	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Anxiety			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	1 / 294 (0.34%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Depression			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	1 / 294 (0.34%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Suicide attempt			

subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Investigations			
Anticoagulation drug level above therapeutic			
subjects affected / exposed	0 / 53 (0.00%)	1 / 38 (2.63%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 1	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Injury, poisoning and procedural complications			
Fall			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	1 / 294 (0.34%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Joint dislocation			
subjects affected / exposed	1 / 53 (1.89%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Radius fracture			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Respiratory fume inhalation disorder			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Upper limb fracture			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	1 / 294 (0.34%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Congenital, familial and genetic disorders			
Macrocornea			

subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
<b>Cardiac disorders</b>			
Acute myocardial infarction			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Cardiac failure congestive			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Coronary artery occlusion			
subjects affected / exposed	0 / 53 (0.00%)	1 / 38 (2.63%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 1	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Myocardial infarction			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	1 / 294 (0.34%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Palpitations			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
<b>Nervous system disorders</b>			
Syncope			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
<b>Blood and lymphatic system disorders</b>			
Lymphadenopathy mediastinal			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	1 / 294 (0.34%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0

Eye disorders			
Macular hole			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	1 / 294 (0.34%)
occurrences causally related to treatment / all	0 / 0	0 / 0	1 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Gastrointestinal disorders			
Abdominal pain			
subjects affected / exposed	0 / 53 (0.00%)	1 / 38 (2.63%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 1	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Gastric perforation			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Gastritis			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	1 / 294 (0.34%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Pancreatitis			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Hepatobiliary disorders			
Cholelithiasis			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Liver injury			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Musculoskeletal and connective tissue disorders			
Back pain			

subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	1 / 294 (0.34%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Musculoskeletal chest pain			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	1 / 294 (0.34%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Infections and infestations			
Abdominal abscess			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Erysipelas			
subjects affected / exposed	0 / 53 (0.00%)	2 / 38 (5.26%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 2	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Influenza			
subjects affected / exposed	1 / 53 (1.89%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Perirectal abscess			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Pneumonia			
subjects affected / exposed	0 / 53 (0.00%)	1 / 38 (2.63%)	1 / 294 (0.34%)
occurrences causally related to treatment / all	0 / 0	1 / 1	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Sepsis			
subjects affected / exposed	0 / 53 (0.00%)	1 / 38 (2.63%)	1 / 294 (0.34%)
occurrences causally related to treatment / all	0 / 0	1 / 1	1 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Urinary tract infection			

subjects affected / exposed	1 / 53 (1.89%)	0 / 38 (0.00%)	1 / 294 (0.34%)
occurrences causally related to treatment / all	1 / 1	0 / 0	1 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
<b>Metabolism and nutrition disorders</b>			
Diabetes mellitus			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Diabetes mellitus inadequate control			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Diabetic ketoacidosis			
subjects affected / exposed	0 / 53 (0.00%)	0 / 38 (0.00%)	0 / 294 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0

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

<b>Non-serious adverse events</b>	Adalimumab (Part A)	Risankizumab (Part A)	Adalimumab/Rerandomized to Adalimumab (Part B)
<b>Total subjects affected by non-serious adverse events</b>			
subjects affected / exposed	71 / 304 (23.36%)	76 / 301 (25.25%)	21 / 56 (37.50%)
<b>Neoplasms benign, malignant and unspecified (incl cysts and polyps)</b>			
Seborrhoeic keratosis			
subjects affected / exposed	0 / 304 (0.00%)	0 / 301 (0.00%)	0 / 56 (0.00%)
occurrences (all)	0	0	0
<b>Vascular disorders</b>			
Hypertension			
subjects affected / exposed	8 / 304 (2.63%)	1 / 301 (0.33%)	1 / 56 (1.79%)
occurrences (all)	12	1	1
<b>Nervous system disorders</b>			
Headache			
subjects affected / exposed	20 / 304 (6.58%)	12 / 301 (3.99%)	3 / 56 (5.36%)
occurrences (all)	29	13	4

Respiratory, thoracic and mediastinal disorders Oropharyngeal pain subjects affected / exposed occurrences (all)	3 / 304 (0.99%) 3	6 / 301 (1.99%) 6	1 / 56 (1.79%) 1
Musculoskeletal and connective tissue disorders Arthralgia subjects affected / exposed occurrences (all)  Back pain subjects affected / exposed occurrences (all)	9 / 304 (2.96%) 12  6 / 304 (1.97%) 6	11 / 301 (3.65%) 12  9 / 301 (2.99%) 9	3 / 56 (5.36%) 5  3 / 56 (5.36%) 3
Infections and infestations Bronchitis subjects affected / exposed occurrences (all)  Upper respiratory tract infection subjects affected / exposed occurrences (all)  Viral upper respiratory tract infection subjects affected / exposed occurrences (all)	3 / 304 (0.99%) 3  12 / 304 (3.95%) 15  24 / 304 (7.89%) 29	4 / 301 (1.33%) 4  21 / 301 (6.98%) 26  26 / 301 (8.64%) 31	3 / 56 (5.36%) 3  5 / 56 (8.93%) 5  7 / 56 (12.50%) 8

<b>Non-serious adverse events</b>	Adalimumab/Rerandomized to Risankizumab (Part B)	Adalimumab/Risankizumab (Part B)	Risankizumab/Risankizumab (Part B)
Total subjects affected by non-serious adverse events subjects affected / exposed	24 / 53 (45.28%)	16 / 38 (42.11%)	95 / 294 (32.31%)
Neoplasms benign, malignant and unspecified (incl cysts and polyps) Seborrheic keratosis subjects affected / exposed occurrences (all)	0 / 53 (0.00%) 0	2 / 38 (5.26%) 2	2 / 294 (0.68%) 2
Vascular disorders Hypertension subjects affected / exposed occurrences (all)	1 / 53 (1.89%) 1	3 / 38 (7.89%) 3	9 / 294 (3.06%) 9
Nervous system disorders			



Headache subjects affected / exposed occurrences (all)	3 / 53 (5.66%) 3	2 / 38 (5.26%) 2	6 / 294 (2.04%) 7
Respiratory, thoracic and mediastinal disorders Oropharyngeal pain subjects affected / exposed occurrences (all)	2 / 53 (3.77%) 2	2 / 38 (5.26%) 2	3 / 294 (1.02%) 4
Musculoskeletal and connective tissue disorders Arthralgia subjects affected / exposed occurrences (all)  Back pain subjects affected / exposed occurrences (all)	2 / 53 (3.77%) 2  2 / 53 (3.77%) 3	0 / 38 (0.00%) 0  0 / 38 (0.00%) 0	4 / 294 (1.36%) 4  6 / 294 (2.04%) 6
Infections and infestations Bronchitis subjects affected / exposed occurrences (all)  Upper respiratory tract infection subjects affected / exposed occurrences (all)  Viral upper respiratory tract infection subjects affected / exposed occurrences (all)	2 / 53 (3.77%) 2  4 / 53 (7.55%) 6  14 / 53 (26.42%) 19	2 / 38 (5.26%) 2  3 / 38 (7.89%) 5  9 / 38 (23.68%) 14	7 / 294 (2.38%) 8  34 / 294 (11.56%) 44  39 / 294 (13.27%) 48

## More information

### Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
17 June 2016	Abbreviation added. "Biologic therapy history" changed to "Psoriasis therapy history" and % body surface area involvement at Visit 1 and 2 added. Anti-drug antibodies sampling at Week 4 added. Randomization, Re-Randomization at Visit 8 should read footer 14. Several text changed in Overall Trial Design and Plan. Clarification on how efficacy data will be used upon submission to the Data Monitoring Committee (DMC) as well as additional information on unbinding. Thrombotic events added. New inclusion criterion added. Exclusion criteria number 4 and 7 slightly changed. Patients that discontinue study medication should complete all study visits and procedures as initially planned, if possible. Method of assigning patients to treatment groups Section revised. Revised text to specify timing of vital sign measurements and hypersensitivity monitoring at dosing visits; further information regarding drug injection details; additional description on patients late visit added. Added facitinib (Xeljanz®) and apremilast (Otezla®) and removed efalizumab (Raptiva®). Added "Absolute Psoriasis Area Severity Index (PASI) score of <3 at all visits collected" in further endpoints. Some laboratory parameters are better specified. Added Albumin/creatinine ratio in urine. Removed information from details of trial procedures. Some information added and removed from baseline conditions. Last paragraph of treatment period section revised. Patients that discontinue study medication should complete all study visits and procedures as initially planned, if possible. Clarified the important protocol violations. Hypothesis tests as described in Section 7.2 will be repeated on the Per Protocol Set or Re-Randomized Per Protocol Set, as appropriate. Added "Time to onset of Endpoint" definition. Clarified Residual Effect Period (REP). Interim analysis planning added. The Work Limitations Questionnaire (WLQ) is not applicable to unemployed patients added.
05 July 2016	Clarification provided in section 11, to implement only after approval of the Institutional Review Board (IRB) / Independent Ethics Committee (IEC) / Competent Authorities.
17 October 2016	1. In title page changed BI drug or BI 655066 to refer to either names for this compound: BI 655066/ABBV-066 (risankizumab). 2. Changed sponsor from Boehringer Ingelheim (BI) to AbbVie in the USA; BI remains the sponsor for all other participating countries. 3. Changed text to specify Statistical Evaluation will be done by AbbVie according to their SOPs.. 4. Updated text to "AbbVie/Boehringer Ingelheim reserves the right to discontinue the trial overall or at a particular trial site at any time for the following reasons". 5. Changed DNA banking sample storage from Boehringer Ingelheim to AbbVie or a third party delegate. 6. Skin biopsies will be collected only at Visit 2 (lesional and non-lesional) and at Visit 7 (only lesional) as shown in the Flow Chart. 7. Changed text to specify that AbbVie summary tables and listings will be produced and analyses are based on AbbVie standards.

Notes:

### Interruptions (globally)

Were there any global interruptions to the trial? No

### Limitations and caveats

None reported