



Clinical trial results:

An Open-label, Single arm, Multicenter Phase 2 Study of the Bruton's Tyrosine Kinase Inhibitor PCI-32765 (Ibrutinib) in Patients with Relapsed or Refractory Chronic Lymphocytic Leukemia or Small Lymphocytic Lymphoma with 17p Deletion (RESONATE™-17)

Summary

EudraCT number	2012-004476-19
Trial protocol	GB SE BE DE
Global end of trial date	

Results information

Result version number	v1
This version publication date	01 May 2016
First version publication date	01 May 2016

Trial information

Trial identification

Sponsor protocol code	PCYC-1117-CA
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Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT01744691
WHO universal trial number (UTN)	-
Other trial identifiers	provider NLM_DES study id: S0003WPS

Notes:

Sponsors

Sponsor organisation name	Pharmacyclics LLC
Sponsor organisation address	999 E Arques Ave, Sunnyvale, United States, 94085
Public contact	Kristin Russell (CTM), Pharmacyclics LLC, 001 408-215-3508, krussell@pcyc.com
Scientific contact	Dr. Alvina Chu, Pharmacyclics LLC, 001 855-427-8846, medinfo@pcyc.com

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	Interim
Date of interim/final analysis	20 June 2014
Is this the analysis of the primary completion data?	Yes
Primary completion date	20 June 2014
Global end of trial reached?	No

Notes:

General information about the trial

Main objective of the trial:

The primary objective was to evaluate the efficacy of ibrutinib in terms of ORR per IWCLL 2008 criteria in subjects with relapsed or refractory CLL/SLL with documented del17p, who received a minimum of 1 prior line of systemic treatment.

Protection of trial subjects:

The study was conducted in accordance with the Declaration of Helsinki and ICH GCP.

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	01 January 2013
Long term follow-up planned	Yes
Long term follow-up rationale	Safety
Long term follow-up duration	2 Years
Independent data monitoring committee (IDMC) involvement?	No

Notes:

Population of trial subjects

Subjects enrolled per country

Country: Number of subjects enrolled	United Kingdom: 14
Country: Number of subjects enrolled	Germany: 13
Country: Number of subjects enrolled	Turkey: 11
Country: Number of subjects enrolled	United States: 84
Country: Number of subjects enrolled	Sweden: 8
Country: Number of subjects enrolled	Australia: 7
Country: Number of subjects enrolled	Belgium: 3
Country: Number of subjects enrolled	Canada: 2
Country: Number of subjects enrolled	New Zealand: 2
Worldwide total number of subjects	144
EEA total number of subjects	38

Notes:

Subjects enrolled per age group

In utero	0
Preterm newborn - gestational age < 37 wk	0
Newborns (0-27 days)	0
Infants and toddlers (28 days-23	0

months)	
Children (2-11 years)	0
Adolescents (12-17 years)	0
Adults (18-64 years)	75
From 65 to 84 years	67
85 years and over	2

Subject disposition

Recruitment

Recruitment details: -

Pre-assignment

Screening details:

One hundred forty-five subjects were enrolled and 144 subjects received at least 1 dose of Ibrutinib and constitute the all treated population and the safety analysis set.

Period 1

Period 1 title	Overall Study (overall period)
Is this the baseline period?	Yes
Allocation method	Not applicable
Blinding used	Not blinded

Arms

Arm title	Ibrutinib
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Arm description:

All subjects who received at least one dose of Ibrutinib 420 mg (3 x 140-mg capsules) orally once daily.

Arm type	Experimental
Investigational medicinal product name	Ibrutinib
Investigational medicinal product code	PCI-32765
Other name	
Pharmaceutical forms	Capsule
Routes of administration	Oral use

Dosage and administration details:

All subjects received Ibrutinib 420 mg (3 x 140-mg capsules) orally once daily.

Number of subjects in period 1	Ibrutinib
Started	144
Completed	101
Not completed	43
Physician decision	4
Unacceptable toxicity, AE or death	18
Progressive Disease	18
Withdrawal of consent for treatment	3

Baseline characteristics

Reporting groups

Reporting group title	Ibrutinib
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Reporting group description:

All subjects who received at least one dose of Ibrutinib 420 mg (3 x 140-mg capsules) orally once daily.

Reporting group values	Ibrutinib	Total	
Number of subjects	144	144	
Age Categorical			
Units: Subjects			
<=18 years	0	0	
Between 18 and 65 years	75	75	
>=65 years	69	69	
Age Continuous			
Units: years			
arithmetic mean	64.4		
standard deviation	± 9.9	-	
Gender, Male/Female			
Units: Subjects			
Female	48	48	
Male	96	96	

End points

End points reporting groups

Reporting group title	Ibrutinib
Reporting group description: All subjects who received at least one dose of Ibrutinib 420 mg (3 x 140-mg capsules) orally once daily.	
Subject analysis set title	Ibrutinib
Subject analysis set type	Intention-to-treat
Subject analysis set description: All subjects who received at least one dose of ibrutinib 420 mg (3 x 140-mg capsules) orally once daily.	

Primary: Overall Response Rate

End point title	Overall Response Rate ^[1]
End point description: The primary objective of this study is to evaluate the efficacy of Ibrutinib in terms of ORR according to an Independent Review Committee (IRC). ORR based upon IRC assessment is the proportion of responders in the all treated population. Responders were subjects who achieved partial response (PR) or better, ie, complete response (CR), complete response with incomplete marrow recovery (CRi), nodule partial response (nPR) or PR, per IWCLL 2008 criteria with the clarification for treatment-related lymphocytosis.	
End point type	Primary
End point timeframe: The median time on study for all treated participants is 11.5 (range 0.5 - 16.6) months	
Notes: [1] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point. Justification: Response rate and its 95% CI was calculated based on normal approximation with Wilson's score method.	

End point values	Ibrutinib			
Subject group type	Subject analysis set			
Number of subjects analysed	144			
Units: % of participants with response by IRC				
number (confidence interval 95%)	63.9 (55.8 to 71.3)			

Statistical analyses

No statistical analyses for this end point

Secondary: Number of Participants With Treatment Emergent Adverse Events (AEs)

End point title	Number of Participants With Treatment Emergent Adverse Events (AEs)
End point description: Number of participants who had experienced at least one treatment emergent AE	
End point type	Secondary
End point timeframe: From first dose of Ibrutinib to within 30 days of last dose for each participant or until study closure	

End point values	Ibrutinib			
Subject group type	Subject analysis set			
Number of subjects analysed	144			
Units: participants				
number (not applicable)	144			

Statistical analyses

No statistical analyses for this end point

Adverse events

Adverse events information

Timeframe for reporting adverse events:

From first dose of Ibrutinib to within 30 days of last dose

Assessment type	Systematic
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Dictionary used

Dictionary name	MedDRA
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Dictionary version	17.0
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Reporting groups

Reporting group title	Ibrutinib
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Reporting group description:

All subjects received Ibrutinib 420 mg (3 x 140-mg capsules) orally once daily.

Serious adverse events	Ibrutinib		
Total subjects affected by serious adverse events			
subjects affected / exposed	58 / 144 (40.28%)		
number of deaths (all causes)	23		
number of deaths resulting from adverse events	2		
Neoplasms benign, malignant and unspecified (incl cysts and polyps)			
Chronic lymphocytic leukaemia			
subjects affected / exposed	3 / 144 (2.08%)		
occurrences causally related to treatment / all	0 / 3		
deaths causally related to treatment / all	0 / 2		
Hodgkin's disease			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Lymphoma transformation			
alternative assessment type: Non-systematic			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Richter's syndrome			

subjects affected / exposed	4 / 144 (2.78%)		
occurrences causally related to treatment / all	0 / 4		
deaths causally related to treatment / all	0 / 1		
Skin papilloma			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Vascular disorders			
Arterial haemorrhage			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
General disorders and administration site conditions			
Fatigue			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
General physical health deterioration			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 1		
Localised oedema			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Oedema peripheral			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Pyrexia			
subjects affected / exposed	3 / 144 (2.08%)		
occurrences causally related to treatment / all	3 / 7		
deaths causally related to treatment / all	0 / 0		

Respiratory, thoracic and mediastinal disorders			
Alveolitis allergic			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Haemoptysis			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Interstitial lung disease			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Pleural effusion			
subjects affected / exposed	3 / 144 (2.08%)		
occurrences causally related to treatment / all	0 / 3		
deaths causally related to treatment / all	0 / 0		
Pneumonitis			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Pulmonary oedema			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Injury, poisoning and procedural complications			
Femoral neck fracture			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Muscle rupture			

subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Post procedural haematuria			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Traumatic haematoma			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Cardiac disorders			
Acute myocardial infarction			
subjects affected / exposed	2 / 144 (1.39%)		
occurrences causally related to treatment / all	0 / 2		
deaths causally related to treatment / all	0 / 1		
Atrial fibrillation			
subjects affected / exposed	6 / 144 (4.17%)		
occurrences causally related to treatment / all	1 / 6		
deaths causally related to treatment / all	0 / 0		
Myocardial infarction			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	1 / 1		
Nervous system disorders			
Critical illness polyneuropathy			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Syncope			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Haemorrhage intracranial			

subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Blood and lymphatic system disorders			
Anaemia			
alternative assessment type: Non-systematic			
subjects affected / exposed	3 / 144 (2.08%)		
occurrences causally related to treatment / all	1 / 3		
deaths causally related to treatment / all	0 / 0		
Autoimmune haemolytic anaemia			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Coagulopathy			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 2		
deaths causally related to treatment / all	0 / 0		
Febrile neutropenia			
subjects affected / exposed	2 / 144 (1.39%)		
occurrences causally related to treatment / all	2 / 2		
deaths causally related to treatment / all	0 / 0		
Haemolytic anaemia			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Immune thrombocytopenic purpura			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Iron deficiency anaemia			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		

Thrombocytopenia			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Spontaneous haematoma			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Eye disorders			
Iritis			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Gastrointestinal disorders			
Colitis			
subjects affected / exposed	2 / 144 (1.39%)		
occurrences causally related to treatment / all	1 / 2		
deaths causally related to treatment / all	0 / 0		
Anal fissure			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Colitis ischaemic			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Diarrhoea			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Gastric ulcer haemorrhage			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		

Gastritis			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Intestinal obstruction			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Oral mucosal blistering			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Vomiting			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Hepatobiliary disorders			
Cholecystitis			
subjects affected / exposed	2 / 144 (1.39%)		
occurrences causally related to treatment / all	0 / 2		
deaths causally related to treatment / all	0 / 0		
Cholecystitis acute			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Skin and subcutaneous tissue disorders			
Skin erosion			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Stevens-Johnson syndrome			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		

Renal and urinary disorders			
Renal failure			
subjects affected / exposed	2 / 144 (1.39%)		
occurrences causally related to treatment / all	0 / 2		
deaths causally related to treatment / all	0 / 0		
Renal infarct			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	1 / 1		
Musculoskeletal and connective tissue disorders			
Arthritis			
subjects affected / exposed	2 / 144 (1.39%)		
occurrences causally related to treatment / all	2 / 2		
deaths causally related to treatment / all	0 / 0		
Dactylitis			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Muscular weakness			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Myalgia			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Osteoporosis			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Infections and infestations			
Aspergillus infection			

subjects affected / exposed	1 / 144 (0.69%)			
occurrences causally related to treatment / all	0 / 1			
deaths causally related to treatment / all	0 / 0			
Bacteraemia				
subjects affected / exposed	1 / 144 (0.69%)			
occurrences causally related to treatment / all	0 / 1			
deaths causally related to treatment / all	0 / 0			
Atypical pneumonia				
subjects affected / exposed	1 / 144 (0.69%)			
occurrences causally related to treatment / all	1 / 1			
deaths causally related to treatment / all	0 / 0			
Bronchitis				
subjects affected / exposed	2 / 144 (1.39%)			
occurrences causally related to treatment / all	1 / 2			
deaths causally related to treatment / all	0 / 0			
Campylobacter gastroenteritis				
subjects affected / exposed	1 / 144 (0.69%)			
occurrences causally related to treatment / all	1 / 1			
deaths causally related to treatment / all	0 / 0			
Cystitis				
subjects affected / exposed	1 / 144 (0.69%)			
occurrences causally related to treatment / all	0 / 1			
deaths causally related to treatment / all	0 / 0			
Cellulitis				
subjects affected / exposed	3 / 144 (2.08%)			
occurrences causally related to treatment / all	1 / 3			
deaths causally related to treatment / all	0 / 0			
Gastroenteritis clostridial				
subjects affected / exposed	1 / 144 (0.69%)			
occurrences causally related to treatment / all	0 / 1			
deaths causally related to treatment / all	0 / 0			
Groin abscess				

subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Herpes simplex			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Herpes zoster			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Lobar pneumonia			
subjects affected / exposed	2 / 144 (1.39%)		
occurrences causally related to treatment / all	0 / 2		
deaths causally related to treatment / all	0 / 0		
Lower respiratory tract infection viral			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Lung infection			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Lymphadenitis bacterial			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Oropharyngeal candidiasis			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Pneumocystis jirovecii pneumonia			

subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Pneumonia			
subjects affected / exposed	17 / 144 (11.81%)		
occurrences causally related to treatment / all	12 / 26		
deaths causally related to treatment / all	0 / 4		
Pneumonia parainfluenzae viral			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Sepsis			
subjects affected / exposed	2 / 144 (1.39%)		
occurrences causally related to treatment / all	0 / 2		
deaths causally related to treatment / all	0 / 2		
Septic shock			
subjects affected / exposed	2 / 144 (1.39%)		
occurrences causally related to treatment / all	1 / 2		
deaths causally related to treatment / all	0 / 1		
Sinusitis fungal			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Urinary tract infection			
subjects affected / exposed	3 / 144 (2.08%)		
occurrences causally related to treatment / all	0 / 3		
deaths causally related to treatment / all	0 / 0		
Metabolism and nutrition disorders			
Hypercalcaemia			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Hyperkalaemia			

subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Hyponatraemia			
subjects affected / exposed	1 / 144 (0.69%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		

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

Non-serious adverse events	Ibrutinib		
Total subjects affected by non-serious adverse events			
subjects affected / exposed	144 / 144 (100.00%)		
Vascular disorders			
Hypertension			
subjects affected / exposed	28 / 144 (19.44%)		
occurrences (all)	34		
General disorders and administration site conditions			
Chills			
subjects affected / exposed	8 / 144 (5.56%)		
occurrences (all)	8		
Fatigue			
subjects affected / exposed	44 / 144 (30.56%)		
occurrences (all)	48		
Oedema peripheral			
subjects affected / exposed	21 / 144 (14.58%)		
occurrences (all)	27		
Pyrexia			
subjects affected / exposed	25 / 144 (17.36%)		
occurrences (all)	32		
Respiratory, thoracic and mediastinal disorders			
Cough			
subjects affected / exposed	34 / 144 (23.61%)		
occurrences (all)	45		
Epistaxis			

subjects affected / exposed occurrences (all) Dyspnoea subjects affected / exposed occurrences (all) Nasal congestion subjects affected / exposed occurrences (all) Oropharyngeal pain subjects affected / exposed occurrences (all)	10 / 144 (6.94%) 11 16 / 144 (11.11%) 21 9 / 144 (6.25%) 12 11 / 144 (7.64%) 12		
Psychiatric disorders Depression subjects affected / exposed occurrences (all) Insomnia subjects affected / exposed occurrences (all)	10 / 144 (6.94%) 10 11 / 144 (7.64%) 11		
Investigations Weight decreased alternative assessment type: Non-systematic subjects affected / exposed occurrences (all) Weight increased subjects affected / exposed occurrences (all)	12 / 144 (8.33%) 15 12 / 144 (8.33%) 15		
Injury, poisoning and procedural complications Contusion subjects affected / exposed occurrences (all)	9 / 144 (6.25%) 11		
Nervous system disorders Dizziness subjects affected / exposed occurrences (all) Headache	12 / 144 (8.33%) 17		

subjects affected / exposed occurrences (all) Peripheral sensory neuropathy subjects affected / exposed occurrences (all)	14 / 144 (9.72%) 15 11 / 144 (7.64%) 13		
Blood and lymphatic system disorders Anaemia subjects affected / exposed occurrences (all) Increased tendency to bruise subjects affected / exposed occurrences (all) Neutropenia subjects affected / exposed occurrences (all) Thrombocytopenia subjects affected / exposed occurrences (all)	27 / 144 (18.75%) 32 20 / 144 (13.89%) 22 24 / 144 (16.67%) 64 16 / 144 (11.11%) 31		
Eye disorders Lacrimation increased subjects affected / exposed occurrences (all) Vision blurred subjects affected / exposed occurrences (all)	9 / 144 (6.25%) 11 10 / 144 (6.94%) 11		
Gastrointestinal disorders Abdominal pain subjects affected / exposed occurrences (all) Diarrhoea subjects affected / exposed occurrences (all) Constipation alternative assessment type: Non-systematic subjects affected / exposed occurrences (all)	11 / 144 (7.64%) 12 52 / 144 (36.11%) 67 17 / 144 (11.81%) 17		

Dyspepsia subjects affected / exposed occurrences (all)	15 / 144 (10.42%) 22		
Nausea subjects affected / exposed occurrences (all)	28 / 144 (19.44%) 36		
Vomiting subjects affected / exposed occurrences (all)	13 / 144 (9.03%) 13		
Stomatitis subjects affected / exposed occurrences (all)	9 / 144 (6.25%) 12		
Skin and subcutaneous tissue disorders			
Night sweats subjects affected / exposed occurrences (all)	15 / 144 (10.42%) 18		
Pruritus subjects affected / exposed occurrences (all)	8 / 144 (5.56%) 8		
Rash subjects affected / exposed occurrences (all)	9 / 144 (6.25%) 10		
Rash erythematous subjects affected / exposed occurrences (all)	10 / 144 (6.94%) 12		
Skin lesion subjects affected / exposed occurrences (all)	10 / 144 (6.94%) 12		
Rash maculo-papular subjects affected / exposed occurrences (all)	12 / 144 (8.33%) 14		
Musculoskeletal and connective tissue disorders			
Arthralgia subjects affected / exposed occurrences (all)	32 / 144 (22.22%) 43		
Muscle spasms			

subjects affected / exposed occurrences (all) Back pain subjects affected / exposed occurrences (all) Pain in extremity subjects affected / exposed occurrences (all) Myalgia subjects affected / exposed occurrences (all)	24 / 144 (16.67%) 26 18 / 144 (12.50%) 22 11 / 144 (7.64%) 17 15 / 144 (10.42%) 15		
Infections and infestations Bronchitis subjects affected / exposed occurrences (all) Sinusitis subjects affected / exposed occurrences (all) Nasopharyngitis subjects affected / exposed occurrences (all) Urinary tract infection subjects affected / exposed occurrences (all) Upper respiratory tract infection subjects affected / exposed occurrences (all)	9 / 144 (6.25%) 10 13 / 144 (9.03%) 16 13 / 144 (9.03%) 15 17 / 144 (11.81%) 20 15 / 144 (10.42%) 16		
Metabolism and nutrition disorders Decreased appetite alternative assessment type: Non-systematic subjects affected / exposed occurrences (all) Hyperuricaemia subjects affected / exposed occurrences (all)	25 / 144 (17.36%) 28 14 / 144 (9.72%) 15		

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
22 February 2013	• Changed the exclusion criteria governing number of prior lines of systemic therapy for CLL from 4 or more to 5 or more due to rapidity by which subjects with del17p CLL become relapsed or refractory to historical therapies. • Updated text for the management of ibrutinib with concomitant CYP3A4/5 inhibitors. • Updated text for the management of ibrutinib with concomitant anticoagulation therapy. Provided further clarification for restart of ibrutinib after anticoagulation therapy. • Provided guidance on perioperative holding of ibrutinib that was not previously available. • Clarified that ophthalmologic examination should be performed by an ophthalmologist. • Clarified that CT scans needed to be obtained for neck, chest, abdomen, and pelvis. • Except in the UK, PROs were no longer collected in the study.
16 December 2013	• Aligned the efficacy and safety populations to subjects who have received at least 1 dose of ibrutinib. • Delayed timing of the primary analysis to at least 12 months after the last subject's first dose of ibrutinib. Provided clarification that any updates to the timing of the primary or final analysis would be pre-specified in the SAP and would not warrant another protocol amendment as long as study conduct was not impacted. • Updated guideline for the use of concomitant QT-prolonging agents. • Updated guideline for concomitant use of anticoagulation and antiplatelet agents and included precautions for commonly used supplements such as fish oil and Vitamin E.

Notes:

Interruptions (globally)

Were there any global interruptions to the trial? No

Limitations and caveats

None reported