



Clinical trial results:

Phase II trial for the treatment of older patients with newly diagnosed CD19 positive, Ph/BCR-ABL negative B-precursor acute lymphoblastic leukemia with sequential dose reduced chemotherapy and Blinatumomab (EWALL-BOLD)

Summary

EudraCT number	2017-002853-13
Trial protocol	DE
Global end of trial date	06 August 2024

Results information

Result version number	v1 (current)
This version publication date	24 January 2025
First version publication date	24 January 2025

Trial information

Trial identification

Sponsor protocol code	EWALL-BOLD
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Additional study identifiers

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

Notes:

Sponsors

Sponsor organisation name	Goethe University
Sponsor organisation address	Theodor-Stern-Kai 7, Frankfurt am Main, Germany,
Public contact	Medizinische Klinik II, Goethe Universität, 0049 (0)6963016365, goekbuget@em.uni-frankfurt.de
Scientific contact	Medizinische Klinik II, Goethe Universität, 0049 (0)6963016365, goekbuget@em.uni-frankfurt.de

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	03 December 2024
Is this the analysis of the primary completion data?	Yes
Primary completion date	06 August 2024
Global end of trial reached?	Yes
Global end of trial date	06 August 2024
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

To evaluate the rate of complete hematologic remission after induction therapy

Protection of trial subjects:

The Sponsor ensured that the protocol and all appropriate documentation according to the applicable country-specific laws and regulations were reviewed and approved by the IEC/IRB's responsible for each site and/or country. The investigator or his/her designee informed the patient/legal representative of all aspects pertaining to the patient's participation in the study and that participation in the study is voluntary and that they could withdraw at any time. The patient's/legal representative's free and expressed informed consent were obtained in writing prior to the screening procedures required for entry into the study according to all applicable regulatory requirements.

To maintain confidentiality, all laboratory specimens, evaluation forms, reports and other records were identified by a coded number, sex and year of birth only. Medical information about individual patients obtained in the course of this trial is confidential and was disclosed to third parties, except authorized monitors, auditors or inspectors. Confidentiality was ensured by the use of patient numbers for the identification of each patient; these patient numbers were used for patient data in the patient files and eCRFs.

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	01 June 2018
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	Germany: 52
Worldwide total number of subjects	52
EEA total number of subjects	52

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)	23
From 65 to 84 years	29
85 years and over	0

Subject disposition

Recruitment

Recruitment details:

First patient in 06/11/2018 (MM/DD/YYYY), last patient out 08/06/2024 (MM/DD/YYYY)

Pre-assignment

Screening details:

The study was conducted in older patients with newly diagnosed B-precursor ALL. Other eligibility criteria were determined within a screening period of up to two weeks prior to the first administration of Induction I.

Period 1

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

Blinding implementation details:

N.A. (open-label single-arm phase II study)

Arms

Arm title	Blinatumomab - single arm
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Arm description:

Patients started with a prephase treatment, which was not part of the clinical trial. During this period screening investigations were performed. Patients received then a dose reduced induction phase I with chemotherapy followed by one cycle of Blinatumomab as induction phase II.

Arm type	Experimental
Investigational medicinal product name	Blinatumomab
Investigational medicinal product code	
Other name	BiTE antibody blinatumomab
Pharmaceutical forms	Concentrate and solvent for solution for injection
Routes of administration	Intravenous use

Dosage and administration details:

Patients received four cycles of blinatumomab alternating with standard chemotherapy. A cycle consists of a continuous intravenous infusion at a dose of 28 µg/d in a constant flow rate over four weeks followed by a two-week infusion free interval.

Number of subjects in period 1	Blinatumomab - single arm
Started	52
Completed	47
Not completed	5
Consent withdrawn by subject	5

Baseline characteristics

Reporting groups

Reporting group title	Overall Trial
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Reporting group description: -

Reporting group values	Overall Trial	Total	
Number of subjects	52	52	
Age categorical			
Units: Subjects			
In utero	0	0	
Preterm newborn infants (gestational age < 37 wks)	0	0	
Newborns (0-27 days)	0	0	
Infants and toddlers (28 days-23 months)	0	0	
Children (2-11 years)	0	0	
Adolescents (12-17 years)	0	0	
Adults (18-64 years)	23	23	
From 65-84 years	29	29	
85 years and over	0	0	
Gender categorical			
Units: Subjects			
Female	19	19	
Male	33	33	

Subject analysis sets

Subject analysis set title	Efficacy set
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Subject analysis set type	Intention-to-treat
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Subject analysis set description:

All patients who received any infusion of study treatment starting with induction phase I and either died during the induction therapy or had a bone marrow evaluation after the end of induction therapy (induction I and cycle I with Blinatumomab) will be considered.

Reporting group values	Efficacy set		
Number of subjects	47		
Age categorical			
Units: Subjects			
In utero	0		
Preterm newborn infants (gestational age < 37 wks)	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)	21		
From 65-84 years	26		
85 years and over	0		

Gender categorical			
Units: Subjects			
Female	19		
Male	28		

End points

End points reporting groups

Reporting group title	Blinatumomab - single arm
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Reporting group description:

Patients started with a prephase treatment, which was not part of the clinical trial. During this period screening investigations were performed. Patients received then a dose reduced induction phase I with chemotherapy followed by one cycle of Blinatumomab as induction phase II.

Subject analysis set title	Efficacy set
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Subject analysis set type	Intention-to-treat
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Subject analysis set description:

All patients who received any infusion of study treatment starting with induction phase I and either died during the induction therapy or had a bone marrow evaluation after the end of induction therapy (induction I and cycle I with Blinatumomab) will be considered.

Primary: Proportion of patients achieving a complete hematologic remission after induction therapy

End point title	Proportion of patients achieving a complete hematologic remission after induction therapy ^[1]
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End point description:

End point type	Primary
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End point timeframe:

After induction therapy (one cycle of chemotherapy and one cycle of Blinatumomab)

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: only descriptive analysis.

End point values	Efficacy set			
Subject group type	Subject analysis set			
Number of subjects analysed	47			
Units: percent	85			

Statistical analyses

No statistical analyses for this end point

Adverse events

Adverse events information

Timeframe for reporting adverse events:

Treatment phase + follow-up

Assessment type	Systematic
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Dictionary used

Dictionary name	NCI CTCAE
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Dictionary version	4.0
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Reporting groups

Reporting group title	All patients with study treatment
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Reporting group description:

All patients who received any infusion of the investigational drug.

Serious adverse events	All patients with study treatment		
Total subjects affected by serious adverse events			
subjects affected / exposed	33 / 47 (70.21%)		
number of deaths (all causes)	12		
number of deaths resulting from adverse events			
Neoplasms benign, malignant and unspecified (incl cysts and polyps)			
Myelodysplastic syndrome			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	1 / 1		
Colon carcinoma			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Cystic lesion in both ovaries			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Vascular disorders			
Thromboembolic event			

subjects affected / exposed	3 / 47 (6.38%)		
occurrences causally related to treatment / all	2 / 4		
deaths causally related to treatment / all	0 / 1		
Surgical and medical procedures			
Port dislocation			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Suspected secondary tumor			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
General disorders and administration site conditions			
Fever			
subjects affected / exposed	4 / 47 (8.51%)		
occurrences causally related to treatment / all	3 / 4		
deaths causally related to treatment / all	0 / 0		
Immune system disorders			
Haemophagozytose (HLH)			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	1 / 1		
Respiratory, thoracic and mediastinal disorders			
Pneumonitis			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Pneumothorax			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Psychiatric disorders			
Confusion			

subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Investigations			
AST/ALT increased			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Alanine aminotransferase increase			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Injury, poisoning and procedural complications			
Gastrointestinal anastomic leak			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Cardiac disorders			
Cardiomyopathy			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Ventricular tachycardia			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Nervous system disorders			
Depressed level of consciousness			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Dysphasia			

subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Encephalopathy			
subjects affected / exposed	2 / 47 (4.26%)		
occurrences causally related to treatment / all	2 / 2		
deaths causally related to treatment / all	0 / 0		
Headache			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Amnesic aphasia			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Aphasia			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Neurotoxicity			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Blood and lymphatic system disorders			
Thrombocytopenia			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Febrile neutropenia			
subjects affected / exposed	5 / 47 (10.64%)		
occurrences causally related to treatment / all	5 / 6		
deaths causally related to treatment / all	0 / 0		
Gastrointestinal disorders			

Gastroenteritis			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Ileal obstruction			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Vomiting			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Hepatobiliary disorders			
Elevation of Transaminase			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Renal and urinary disorders			
Acute kidney injury			
subjects affected / exposed	2 / 47 (4.26%)		
occurrences causally related to treatment / all	2 / 2		
deaths causally related to treatment / all	0 / 0		
Renal failure			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Musculoskeletal and connective tissue disorders			
Spondylodiscitis			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Infections and infestations			
Anorectal infection			

subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Breast infection			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Catheter related infection			
subjects affected / exposed	10 / 47 (21.28%)		
occurrences causally related to treatment / all	11 / 13		
deaths causally related to treatment / all	0 / 0		
Covid19 Pneumonia			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Infection with staphylococcus epidermis in peripheral blood cultur			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Pneumocystitis jirovecii infection			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Pneumonia			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
SARS CoV-2 infection			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Spondylodiscitis			

subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Sepsis			
subjects affected / exposed	3 / 47 (6.38%)		
occurrences causally related to treatment / all	2 / 3		
deaths causally related to treatment / all	0 / 0		
Skin infection			
subjects affected / exposed	2 / 47 (4.26%)		
occurrences causally related to treatment / all	0 / 2		
deaths causally related to treatment / all	0 / 0		
Upper respiratory infection			
subjects affected / exposed	2 / 47 (4.26%)		
occurrences causally related to treatment / all	1 / 2		
deaths causally related to treatment / all	0 / 0		
Urinary tract infection			
subjects affected / exposed	1 / 47 (2.13%)		
occurrences causally related to treatment / all	0 / 4		
deaths causally related to treatment / all	0 / 0		
Metabolism and nutrition disorders			
Hyperglycemia			
subjects affected / exposed	1 / 47 (2.13%)		
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	All patients with study treatment		
Total subjects affected by non-serious adverse events			
subjects affected / exposed	46 / 47 (97.87%)		
Vascular disorders			
Hypertension			
subjects affected / exposed	5 / 47 (10.64%)		
occurrences (all)	6		

Hypotension subjects affected / exposed occurrences (all)	7 / 47 (14.89%) 7		
General disorders and administration site conditions			
Bleeding subjects affected / exposed occurrences (all)	4 / 47 (8.51%) 5		
Oedema face subjects affected / exposed occurrences (all)	4 / 47 (8.51%) 4		
Oedema limbs subjects affected / exposed occurrences (all)	16 / 47 (34.04%) 27		
Fatigue subjects affected / exposed occurrences (all)	11 / 47 (23.40%) 27		
fever subjects affected / exposed occurrences (all)	23 / 47 (48.94%) 49		
general disorders - other subjects affected / exposed occurrences (all)	5 / 47 (10.64%) 7		
Localised oedema subjects affected / exposed occurrences (all)	4 / 47 (8.51%) 8		
Pain subjects affected / exposed occurrences (all)	9 / 47 (19.15%) 9		
Immune system disorders			
allergic reaction subjects affected / exposed occurrences (all)	4 / 47 (8.51%) 4		
Cytokine release syndrome subjects affected / exposed occurrences (all)	7 / 47 (14.89%) 7		
Respiratory, thoracic and mediastinal disorders			

cough			
subjects affected / exposed	5 / 47 (10.64%)		
occurrences (all)	7		
Dyspnoea			
subjects affected / exposed	8 / 47 (17.02%)		
occurrences (all)	11		
Productive cough			
subjects affected / exposed	4 / 47 (8.51%)		
occurrences (all)	4		
Psychiatric disorders			
Depression			
subjects affected / exposed	3 / 47 (6.38%)		
occurrences (all)	3		
Insomnia			
subjects affected / exposed	4 / 47 (8.51%)		
occurrences (all)	10		
Investigations			
Alanine aminotransferase increased			
subjects affected / exposed	20 / 47 (42.55%)		
occurrences (all)	28		
alkaline phosphatase increased			
subjects affected / exposed	5 / 47 (10.64%)		
occurrences (all)	9		
Antithrombin III decreased			
subjects affected / exposed	21 / 47 (44.68%)		
occurrences (all)	26		
AST, GOT increased			
subjects affected / exposed	18 / 47 (38.30%)		
occurrences (all)	26		
Blood bilirubin increased			
subjects affected / exposed	17 / 47 (36.17%)		
occurrences (all)	24		
Cholesterol high			
subjects affected / exposed	4 / 47 (8.51%)		
occurrences (all)	10		
Creatinine urine increased			

subjects affected / exposed occurrences (all)	7 / 47 (14.89%) 11		
Fibrinogen decreased subjects affected / exposed occurrences (all)	16 / 47 (34.04%) 24		
GGT increased subjects affected / exposed occurrences (all)	10 / 47 (21.28%) 15		
GOT/GPT increased subjects affected / exposed occurrences (all)	30 / 47 (63.83%) 71		
Investigations - other subjects affected / exposed occurrences (all)	9 / 47 (19.15%) 10		
Lipase decreased subjects affected / exposed occurrences (all)	13 / 47 (27.66%) 27		
Serum amylase increased subjects affected / exposed occurrences (all)	4 / 47 (8.51%) 6		
Weight increased subjects affected / exposed occurrences (all)	7 / 47 (14.89%) 10		
Nervous system disorders cognitive disturbance subjects affected / exposed occurrences (all)	3 / 47 (6.38%) 3		
Dizziness subjects affected / exposed occurrences (all)	11 / 47 (23.40%) 15		
Headache subjects affected / exposed occurrences (all)	9 / 47 (19.15%) 20		
Nervous system disorder subjects affected / exposed occurrences (all)	4 / 47 (8.51%) 7		

Paraesthesia subjects affected / exposed occurrences (all)	7 / 47 (14.89%) 15		
Peripheral sensory neuropathy subjects affected / exposed occurrences (all)	4 / 47 (8.51%) 5		
Tremor subjects affected / exposed occurrences (all)	6 / 47 (12.77%) 13		
Blood and lymphatic system disorders			
Anaemia subjects affected / exposed occurrences (all)	29 / 47 (61.70%) 66		
Other subjects affected / exposed occurrences (all)	3 / 47 (6.38%) 8		
Febrile neutropenia subjects affected / exposed occurrences (all)	7 / 47 (14.89%) 8		
Immunoglobulins decreased subjects affected / exposed occurrences (all)	19 / 47 (40.43%) 36		
Lymphocyte count decreased subjects affected / exposed occurrences (all)	24 / 47 (51.06%) 60		
Neutrophil count decreased subjects affected / exposed occurrences (all)	28 / 47 (59.57%) 59		
Platelet count decreased subjects affected / exposed occurrences (all)	32 / 47 (68.09%) 65		
White blood cell count decreased subjects affected / exposed occurrences (all)	33 / 47 (70.21%) 78		
Eye disorders			

Dry eye			
subjects affected / exposed	3 / 47 (6.38%)		
occurrences (all)	6		
Eye disorder			
subjects affected / exposed	5 / 47 (10.64%)		
occurrences (all)	8		
Gastrointestinal disorders			
Abdominal pain			
subjects affected / exposed	8 / 47 (17.02%)		
occurrences (all)	11		
Constipation			
subjects affected / exposed	3 / 47 (6.38%)		
occurrences (all)	5		
Diarrhoea			
subjects affected / exposed	16 / 47 (34.04%)		
occurrences (all)	24		
Gastroesophageal reflux disease			
subjects affected / exposed	4 / 47 (8.51%)		
occurrences (all)	4		
Gastrointestinal disorder			
subjects affected / exposed	6 / 47 (12.77%)		
occurrences (all)	8		
mucositis			
subjects affected / exposed	15 / 47 (31.91%)		
occurrences (all)	16		
Nausea			
subjects affected / exposed	18 / 47 (38.30%)		
occurrences (all)	42		
obstipation			
subjects affected / exposed	16 / 47 (34.04%)		
occurrences (all)	23		
Vomiting			
subjects affected / exposed	8 / 47 (17.02%)		
occurrences (all)	14		
Hepatobiliary disorders			

hepatobiliary disorders - other subjects affected / exposed occurrences (all)	3 / 47 (6.38%) 3		
Skin and subcutaneous tissue disorders Pruritus subjects affected / exposed occurrences (all)	3 / 47 (6.38%) 3		
Rash maculo-papular subjects affected / exposed occurrences (all)	3 / 47 (6.38%) 3		
skin and subcutaneous tissue disorders - other subjects affected / exposed occurrences (all)	8 / 47 (17.02%) 19		
Renal and urinary disorders Acute/chronic kidney injury subjects affected / exposed occurrences (all)	8 / 47 (17.02%) 10		
Musculoskeletal and connective tissue disorders Back pain subjects affected / exposed occurrences (all)	5 / 47 (10.64%) 5		
Bone pain subjects affected / exposed occurrences (all)	4 / 47 (8.51%) 6		
musculoskeletal and connective tissue disorders - other subjects affected / exposed occurrences (all)	4 / 47 (8.51%) 7		
Pain in extremity subjects affected / exposed occurrences (all)	3 / 47 (6.38%) 4		
Infections and infestations Infection subjects affected / exposed occurrences (all)	23 / 47 (48.94%) 36		
infection and infestations - other			

subjects affected / exposed occurrences (all)	9 / 47 (19.15%) 10		
Lip infection subjects affected / exposed occurrences (all)	3 / 47 (6.38%) 5		
Urinary tract infection subjects affected / exposed occurrences (all)	5 / 47 (10.64%) 7		
Metabolism and nutrition disorders			
Hyperglycaemia subjects affected / exposed occurrences (all)	26 / 47 (55.32%) 76		
Hypertriglyceridaemia subjects affected / exposed occurrences (all)	3 / 47 (6.38%) 9		
Hypoalbuminaemia subjects affected / exposed occurrences (all)	20 / 47 (42.55%) 38		
Hyperuricaemia subjects affected / exposed occurrences (all)	3 / 47 (6.38%) 5		
Hypocalcaemia subjects affected / exposed occurrences (all)	3 / 47 (6.38%) 7		
Hypokalaemia subjects affected / exposed occurrences (all)	12 / 47 (25.53%) 17		
Hypophosphataemia subjects affected / exposed occurrences (all)	4 / 47 (8.51%) 7		
triglyceride increased subjects affected / exposed occurrences (all)	14 / 47 (29.79%) 20		

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
09 August 2018	Protocol version 1.4 modifications: <ul style="list-style-type: none">- Correction of the standard of care description according to the recommendation in Germany;- Establishment a Data safety Monitoring Board;- Modification in the CSF prophylaxis: possibility to postpone the CSF prophylaxis.
20 February 2020	Modifications of Protocol version 1.5: <ul style="list-style-type: none">- Inclusion criteria: a Ph/BCR-ABL-negative ALL must be present. This point was already included in the title of the study, but the addition was missing in the inclusion criteria.- Corrections in the study time points for blinatumomab cycles and tests- Screening phase: the inclusion of the patient should be carried out before Induction I and not before the first Blina cycle- IMP: Extension of the approval of blinatumomab for MRD positive ALL- End of study: the end of the trial was defined in the protocol

Notes:

Interruptions (globally)

Were there any global interruptions to the trial? No

Limitations and caveats

None reported