Clinical trial results:
Pomalidomide, ixazomib, and dexamethasone (PId) with or without intensification by cyclophosphamide (PICd):
A phase II study in relapsed or refractory multiple myeloma

Summary

EudraCT number	2014-001757-16
Trial protocol	DE
Global end of trial date	22 April 2024

Results information

Result version number	v1 (current)
This version publication date	16 April 2025
First version publication date	16 April 2025

Trial information

Trial identification

Sponsor protocol code	DSMMXV

Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT03731832
WHO universal trial number (UTN)	-

Notes:

Sponsors

Sponsor organisation name	GWT-TUD GmbH
Sponsor organisation address	Freiberger Str. 33, Dresden, Germany, 01067
Public contact	Medical Consulting, GWT-TUD GmbH, 0049 35125933100, medical.consulting@g-wt.de
Scientific contact	Medical Consulting, GWT-TUD GmbH, 0049 35125933100, medical.consulting@g-wt.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	23 December 2024
Is this the analysis of the primary completion data?	Yes
Primary completion date	22 April 2024
Global end of trial reached?	Yes
Global end of trial date	22 April 2024
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

To assess the clinical activity of pomalidomide administered once daily in combination with oral ixazomib and dexamethasone (PId)

Protection of trial subjects:

Patients were monitored closely for anticipated toxicities. Additionally, an independent Data Safety Monitoring Board (DSMB) reviewed safety data when the first 6 patients each had completed the 1st cycle of PICd. Afterwards, safety data were reviewed on an ongoing basis throughout conduct of the study.

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	01 September 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: 61
Worldwide total number of subjects	61
EEA total number of subjects	61

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 months)	0
Children (2-11 years)	0
Adolescents (12-17 years)	0
Adults (18-64 years)	25
From 65 to 84 years	36
85 years and over	0

Subject disposition

Recruitment

Recruitment details:

From Sep 2018 until Dec 2021 in total 66 patients were enrolled in this study at 10 study sites in Germany.

Pre-assignment

Screening details:

Of them, 61 patients received treatment. 4 patients were screening failures and 1 patients died before treatment.

Pre-assignment period milestones

Number of subjects started	61
Number of subjects completed	61

Period 1

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

Arms

Arm title	Induction treatment

Arm description:

Patients starting the induction treatment pomalidomide, ixazomib, and dexamethasone (PId). Treatment was given until further disease progression.
Patients with isolated biochemical relapse with an increase of ≥ 25% in serum M-protein (absolute increase ≥ 5 g/L) and/or urine M-protein (absolute increase ≥ 200 mg/24h) or in the difference between involved and uninvolved FLC levels (provided, the absolute increase is > 100 mg/l) without further signs or symptoms of end organ damage proceeded to the intensification phase (PICd) until further disease progression.

Arm type	Experimental
Investigational medicinal product name	Pomalidomide
Investigational medicinal product code	CC-4047
Other name	
Pharmaceutical forms	Capsule, hard
Routes of administration	Oral use

Dosage and administration details:

Study drug was given as an oral dose of 4 mg on day 1 until day 21, followed by 1 week without study drug in a 28-day cycle.

Investigational medicinal product name	Ixazomib
Investigational medicinal product code	MLN9708
Other name	
Pharmaceutical forms	Capsule
Routes of administration	Oral use

Dosage and administration details:

Study drug was given as a single, oral dose of 4 mg weekly (day 1, 8 and 15) for 3 weeks, followed by 1 week without study drug in a 28-day cycle.

Investigational medicinal product name	Dexamethasone
Investigational medicinal product code	
Other name	Fortecortin®

Pharmaceutical forms	Tablet
Routes of administration	Oral use

Dosage and administration details:

Study drug was administered as a single, oral dose of 40 mg/day weekly on day 1, 8, 15 and 22 in patients from 18 to 74 years old. For patients ≥ 75 years old dose has to be reduced to 20 mg/day with the same treatment schedule.

Number of subjects in period 1	Induction treatment
Started	61
Completed	28
Not completed	33
Physician decision	4
Consent withdrawn by subject	2
Adverse event, non-fatal	4
Death	4
Progression	12
Unknown	6
Protocol deviation	1

Baseline characteristics

Reporting groups	
Reporting group title	Treatment period (overall period)

Reporting group description: -

Reporting group values	Treatment period (overall period)	Total	
Number of subjects	61	61	
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)	25	25	
From 65-84 years	36	36	
85 years and over	0	0	
Gender categorical Units: Subjects			
Female	42	42	
Male	19	19	

End points

End points reporting groups

Reporting group title	Induction treatment

Reporting group description:

Patients starting the induction treatment pomalidomide, ixazomib, and dexamethasone (PId). Treatment was given until further disease progression.
Patients with isolated biochemical relapse with an increase of ≥ 25% in serum M-protein (absolute increase ≥ 5 g/L) and/or urine M-protein (absolute increase ≥ 200 mg/24h) or in the difference between involved and uninvolved FLC levels (provided, the absolute increase is > 100 mg/l) without further signs or symptoms of end organ damage proceeded to the intensification phase (PICd) until further disease progression.

Primary: overall response rate (ORR)

End point title	overall response rate (ORR)[1]

End point description:

End point type	Primary

End point timeframe:

14 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: The efficacy analyses were performed on the efficacy analysis set (EFF), which included all patients who received at least one complete cycle of pomalidomide and ixazomib. Efficacy of the PId regime was reported by appropriate descriptive statistics.

End point values	Induction treatment			
Subject group type	Reporting group			
Number of subjects analysed	59			
Units: percent				
number (confidence interval 95%)	67.8 (54.4 to 79.4)			

Statistical analyses

No statistical analyses for this end point

Adverse events

Adverse events information	
Timeframe for reporting adverse events:	
26 months	
Assessment type	Systematic

Dictionary used	
Dictionary name	MedDRA
Dictionary version	15.0

Reporting groups	
Reporting group title	Safety Analysis Set
Reporting group description:	
The safety analyses were performed on the safety analysis set (SAF), which included all patients who received at least one dose of pomalidomide and ixazomib.	

Serious adverse events	Safety Analysis Set		
Total subjects affected by serious adverse events			
subjects affected / exposed	26 / 61 (42.62%)		
number of deaths (all causes)	34		
number of deaths resulting from adverse events	4		
Neoplasms benign, malignant and unspecified (incl cysts and polyps)			
Adenocarcinoma of colon			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 1		
Plasma cell myeloma			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
General disorders and administration site conditions			
Pain			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Pyrexia			

subjects affected / exposed	2 / 61 (3.28%)		
occurrences causally related to treatment / all	0 / 2		
deaths causally related to treatment / all	0 / 0		
Respiratory, thoracic and mediastinal disorders			
Chronic obstructive pulmonary disease			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Pneumonitis			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Investigations			
Neutrophil count decreased			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Injury, poisoning and procedural complications			
Accident			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Femur fracture			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Rib fracture			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Cardiac disorders			
Atrial tachycardia			

subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Cardiac failure			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Nervous system disorders			
Spinal cord compression			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Blood and lymphatic system disorders			
Anemia			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Febrile neutropenia			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Thrombocytopenia			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Eye disorders			
Diplopia			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Ulcerative keratitis			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		

Renal and urinary disorders			
Acute kidney injury			
subjects affected / exposed	2 / 61 (3.28%)		
occurrences causally related to treatment / all	0 / 2		
deaths causally related to treatment / all	0 / 0		
Renal failure			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Musculoskeletal and connective tissue disorders			
Back pain			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Infections and infestations			
Anal abscess			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Atypical pneumonia			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Bronchiolitis			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Bronchitis			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Corona virus infection			

subjects affected / exposed	1 / 61 (1.64%)			
occurrences causally related to treatment / all	0 / 1			
deaths causally related to treatment / all	0 / 0			
Diverticulitis				
subjects affected / exposed	1 / 61 (1.64%)			
occurrences causally related to treatment / all	0 / 1			
deaths causally related to treatment / all	0 / 0			
Empyema				
subjects affected / exposed	1 / 61 (1.64%)			
occurrences causally related to treatment / all	1 / 1			
deaths causally related to treatment / all	0 / 0			
Endocarditis				
subjects affected / exposed	1 / 61 (1.64%)			
occurrences causally related to treatment / all	1 / 1			
deaths causally related to treatment / all	0 / 0			
Hepatitis B reactivation				
subjects affected / exposed	1 / 61 (1.64%)			
occurrences causally related to treatment / all	1 / 1			
deaths causally related to treatment / all	0 / 0			
Influenza				
subjects affected / exposed	1 / 61 (1.64%)			
occurrences causally related to treatment / all	0 / 1			
deaths causally related to treatment / all	0 / 0			
Lung infection				
subjects affected / exposed	1 / 61 (1.64%)			
occurrences causally related to treatment / all	1 / 1			
deaths causally related to treatment / all	1 / 1			
Metapneumovirus infection				
subjects affected / exposed	1 / 61 (1.64%)			
occurrences causally related to treatment / all	0 / 1			
deaths causally related to treatment / all	0 / 0			
Pneumonia				

subjects affected / exposed	3 / 61 (4.92%)		
occurrences causally related to treatment / all	2 / 3		
deaths causally related to treatment / all	0 / 0		
Pneumonia streptococcal			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Rash pustular			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Sepsis			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 1		
Superinfection			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	1 / 1		
Urinary tract infection			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Metabolism and nutrition disorders			
Hypercalcemia			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Hyponatremia			
subjects affected / exposed	1 / 61 (1.64%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		

Frequency threshold for reporting non-serious adverse events: 0 %

Non-serious adverse events	Safety Analysis Set		
Total subjects affected by non-serious adverse events subjects affected / exposed	59 / 61 (96.72%)		
Neoplasms benign, malignant and unspecified (incl cysts and polyps) Neoplasms benign, malignant and unspecified (incl cysts and polyps) subjects affected / exposed occurrences (all)	4 / 61 (6.56%) 4		
Vascular disorders Vascular disorders subjects affected / exposed occurrences (all)	7 / 61 (11.48%) 7		
Surgical and medical procedures Surgical and medical procedures subjects affected / exposed occurrences (all)	1 / 61 (1.64%) 1		
General disorders and administration site conditions General disorders and administration site conditions subjects affected / exposed occurrences (all)	32 / 61 (52.46%) 32		
Immune system disorders Immune system disorders subjects affected / exposed occurrences (all)	2 / 61 (3.28%) 2		
Social circumstances Social circumstances subjects affected / exposed occurrences (all)	1 / 61 (1.64%) 1		
Reproductive system and breast disorders Reproductive system and breast disorders subjects affected / exposed occurrences (all)	4 / 61 (6.56%) 4		
Respiratory, thoracic and mediastinal disorders			

Respiratory, thoracic and mediastinal disorders subjects affected / exposed occurrences (all)	23 / 61 (37.70%) 23		
Psychiatric disorders Psychiatric disorders subjects affected / exposed occurrences (all)	13 / 61 (21.31%) 13		
Investigations Investigations subjects affected / exposed occurrences (all)	16 / 61 (26.23%) 16		
Injury, poisoning and procedural complications Injury, poisoning and procedural complications subjects affected / exposed occurrences (all)	7 / 61 (11.48%) 7		
Cardiac disorders Cardiac disorders subjects affected / exposed occurrences (all)	6 / 61 (9.84%) 6		
Nervous system disorders Nervous system disorders subjects affected / exposed occurrences (all)	24 / 61 (39.34%) 24		
Blood and lymphatic system disorders Blood and lymphatic system disorders subjects affected / exposed occurrences (all)	36 / 61 (59.02%) 36		
Ear and labyrinth disorders Ear and labyrinth disorders subjects affected / exposed occurrences (all)	8 / 61 (13.11%) 8		
Gastrointestinal disorders Gastrointestinal disorders subjects affected / exposed occurrences (all)	25 / 61 (40.98%) 25		
Hepatobiliary disorders			

Hepatobiliary disorders subjects affected / exposed occurrences (all)	1 / 61 (1.64%) 1		
Skin and subcutaneous tissue disorders Skin and subcutaneous tissue disorders subjects affected / exposed occurrences (all)	23 / 61 (37.70%) 23		
Renal and urinary disorders Renal and urinary disorders subjects affected / exposed occurrences (all)	11 / 61 (18.03%) 11		
Endocrine disorders Endocrine disorders subjects affected / exposed occurrences (all)	6 / 61 (9.84%) 6		
Musculoskeletal and connective tissue disorders Musculoskeletal and connective tissue disorders subjects affected / exposed occurrences (all)	31 / 61 (50.82%) 31		
Infections and infestations Infections and infestations subjects affected / exposed occurrences (all)	29 / 61 (47.54%) 29		
Metabolism and nutrition disorders Metabolism and nutrition disorders subjects affected / exposed occurrences (all)	23 / 61 (37.70%) 23		

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
29 May 2019	Protocol V10.0 dated 13 Mar 2019, updated overall study duration, adjustment of inclusion and exclusion criteria
15 June 2020	Protocol V12.0 dated 12 May 2020 including update of contraceptional timeframes for donating semen as well as utilizing reliable forms of contraception
08 October 2021	Protocol V13.0 dated 20 Jul 2021 including update of administrative aspects and study conduct changes
02 June 2022	Protocol V15.0 dated 19 May 2022 including reduction of total patients enrolled, adjustment of statistical part and population for efficacy analysis, update of timelines, change of CPI contact, additional criterion for early termination added

Notes:

Interruptions (globally)

Were there any global interruptions to the trial? No

Limitations and caveats

None reported