Clinical trial results:
Phase IIA trial of short-term chemotherapy and pembrolizumab, followed by Pembrolizumab and Olaparib as firstline therapy in Her-2 negative gastric/gastroesophageal-junction (GEJ) Adenocarcinoma – POLESTAR –

Summary

EudraCT number	2021-000150-26
Trial protocol	DE
Global end of trial date	09 January 2025
Results information	
Result version number	v1 (current)
This version publication date	27 March 2026
First version publication date	27 March 2026
Summary attachment (see zip file)	Non-serious AE Listing (POLESTAR_list of non-serious AEs occurred in 5% or more.pdf)

Trial information

Trial identification	
Sponsor protocol code	POLESTAR
Additional study identifiers	
ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT05268510
WHO universal trial number (UTN)	-
Other trial identifiers	IKF number: IKF-038, AIO-STO-0121/ass.: AIO

Notes:

Sponsors	
Sponsor organisation name	Frankfurter Institut für Klinische Krebsforschung IKF GmbH
Sponsor organisation address	Steinbacher Hohl 2-26, Frankfurt, Germany,
Public contact	IKF, Frankfurter Institut für Klinische Krebsforschung IKF GmbH, 0049 69589978719, polestar@ikf-khnw.de
Scientific contact	IKF, Frankfurter Institut für Klinische Krebsforschung IKF GmbH, 0049 69589978719, polestar@ikf-khnw.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	14 November 2025
Is this the analysis of the primary completion data?	Yes
Primary completion date	09 January 2025
Global end of trial reached?	Yes
Global end of trial date	09 January 2025
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

The primary objective of this study was to assess the efficacy in terms of overall survival rate at one year after enrollment of the chemoimmunotherapy induction followed by pembrolizumab/ olaparib combination therapy in patients with HER2 negative esophagogastric adenocarcinoma.

Protection of trial subjects:

This clinical study was designed and shall be implemented and reported in accordance with the protocol, the AMG (Arzneimittelgesetz), the ICH Harmonized Tripartite Guidelines for Good Clinical Practice, with applicable local regulations (including European Directive 2001/20/EC), and with the ethical principles laid down in the Declaration of Helsinki. The trial was authorized/approved by the competent authority (Paul-Ehrlich-Institut, PEI) and the competent ethics committee responsible for the trial. Before recruitment into the clinical trial, each patient was informed that participation in the study is completely voluntary, and that he or she may withdraw his or her participation in the trial at any time without any declaration of reasons, which will not lead to any disadvantage for the respective patient. The eligibility of a new patient was determined by the local investigator during regular clinical visits. The examinations for the study and the inclusion of the patient were done after detailed written and oral education about aims, methods, anticipated benefits and potential hazards of the study by use of the informed consent forms and after given written consent of the patient. Safety was monitored continuously by careful monitoring of all adverse events (AEs) and serious adverse events (SAEs) reported.

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	05 September 2022
Long term follow-up planned	No
Independent data monitoring committee (IDMC) involvement?	No

Notes:

Population of trial subjects

Subjects enrolled per country

Country: Number of subjects enrolled	Germany: 31
Worldwide total number of subjects	31
EEA total number of subjects	31

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)	18
From 65 to 84 years	13
85 years and over	0

Subject disposition

Recruitment

Recruitment details:

Patients were recruited by the investigator during regular clinical visits in registered trial sites.
Recruitment to the study started on September 5th, 2022 and ended on Januar 10th, 2023.
A total of 32 patients was screened and 31 patients from a total of 8 different study sites were enrolled

Pre-assignment

Screening details:

Eligible patients were ≥18years, had histologically confirmed metastatic or unresectable, HER2 negative gastroesophagal adenocarcinoma and ECOG 0-1, who did not receive prior systemic anti-cancer therapy for metastatic or locally advanced (irresectable) disease and any treatment with immune checkpoint inhibitor and PARP inhibitor

Period 1

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

Arms

Arm title	Experimental

Arm description:

Patients received two 6-weeks cycles (Q6W) of induction chemoimmunotherapy (mFOLFOX-6 or CAPOX according to investigators' decision plus pembrolizumab) followed by consolidation therapy consisting of combination of pembrolizumab plus olaparib for up to 16 cycles (total 18 cycles).

Arm type	Experimental
Investigational medicinal product name	Pembrolizumab
Investigational medicinal product code	
Other name	Keytruda
Pharmaceutical forms	Concentrate for solution for infusion
Routes of administration	Intravenous use

Dosage and administration details:

Pembrolizumab at a fixed dose of 400 mg was administered as an IV infusion. During chemotherapy, pembrolizumab was administered prior to chemotherapy on day 1 of the first and second cycle. Following the chemoimmunotherapy pembrolizumab was administered every 6 weeks starting on day 1 of each pembrolizumab plus olaparib cycle

Investigational medicinal product name	Olaparib
Investigational medicinal product code	
Other name	LYNPARZA
Pharmaceutical forms	Film-coated tablet
Routes of administration	Oral use

Dosage and administration details:

Olaparib was administered at a dose of 300 mg orally twice daily continuously starting on day 1 of the first pembrolizumab plus olaparib cycle

Investigational medicinal product name	mFOLFOX
Investigational medicinal product code	
Other name	oxaliplatin, leucovorin/sodium folinate, 5-fluorouracil
Pharmaceutical forms	Concentrate for solution for infusion
Routes of administration	Intravenous bolus use , Intravenous use

Dosage and administration details:

The modified FOLFOX6 chemotherapy was administered on day 1, 15 and 29 (on day 1 after the 30-minute pembrolizumab IV infusion) starting with oxaliplatin 85 mg/m² as a 2 hours IV infusion, followed by leucovorin/sodium folinate 400 mg/m² as a 2 hours IV infusion, followed by 5-FU 400 mg/m² as bolus (2-5 minutes) and 5-FU 2,400 mg/m² applied in 46 h.

Patients received modified FOLFOX6 OR CAPOX regimen according to clinical standard and investigators' decision!

Investigational medicinal product name	CAPOX
Investigational medicinal product code	
Other name	oxaliplatin, capecitabine
Pharmaceutical forms	Concentrate for solution for infusion, Film-coated tablet
Routes of administration	Intravenous use, Oral use

Dosage and administration details:

The CAPOX chemotherapy was administered on day 1 and 22 (on day 1 after the 30-minute pembrolizumab IV infusion) with oxaliplatin 130 mg/m² as a 2 hours IV infusion. Capecitabine was taken p.o. at 1,000 mg/m2 bid. on day 1 to day 14 and day 22 to day 35

Patients received modified FOLFOX6 OR CAPOX regimen according to clinical standard and investigators' decision!

Number of subjects in period 1	Experimental
Started	31
Completed	2
Not completed	29
Physician decision	2
Patient's wish	2
Adverse event, non-fatal	1
Lack of efficacy	24

Baseline characteristics

Reporting groups	
Reporting group title	Experimental
Reporting group description:	
Patients received two 6-weeks cycles (Q6W) of induction chemoimmunotherapy (mFOLFOX-6 or CAPOX according to investigators' decision plus pembrolizumab) followed by consolidation therapy consisting of combination of pembrolizumab plus olaparib for up to 16 cycles (total 18 cycles).	

Reporting group values	Experimental	Total	
Number of subjects	31	31	
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)		0	
From 65-84 years		0	
85 years and over		0	
Age continuous Units: years			
median	62		
full range (min-max)	31 to 78	-	
Gender categorical Units: Subjects			
Female	9	9	
Male	22	22	
ECOG Units: Subjects			
ECOG 0	18	18	
ECOG 1	13	13	
DPD (CPIC activity score) Units: Subjects			
Missing	1	1	
1.0	2	2	
1.5	1	1	
≥ 2.0	27	27	
Primary tumor localization Units: Subjects			
AEG I	3	3	
AEG II	7	7	
AEG III	3	3	
Stomach: corpus, antrum, pylorus	18	18	
Histological type acc. Lauren Units: Subjects			

Intestinal	8	8	
Diffuse	10	10	
Mixed	8	8	
Not known/ not applicable	5	5	
Current tumor stage Units: Subjects			
Metastatic (incl. local relapse)	26	26	
Locally irresectable	5	5	
PD-L1 CPS score			
central measurement, except for two patiensts, whose scores corresponded to local measurement documented in the eCRF			
Units: Subjects			
CPS < 1	9	9	
CPS ≥ 1	21	21	
Missing	1	1	
Patient received previous neoadjuvant and/or adjuvant treatment Units: Subjects			
Yes	7	7	
No	24	24	

End points

End points reporting groups

Reporting group title	Experimental

Reporting group description:

Patients received two 6-weeks cycles (Q6W) of induction chemoimmunotherapy (mFOLFOX-6 or CAPOX according to investigators' decision plus pembrolizumab) followed by consolidation therapy consisting of combination of pembrolizumab plus olaparib for up to 16 cycles (total 18 cycles).

Primary: Overall survival rate at 12 months (OS@12)

End point title	Overall survival rate at 12 months (OS@12)[1]

End point description:

Overall survival rate at 12 months is defined as percentage of patients who remain alive one year after enrollment

End point type	Primary

End point timeframe:

at 12 months after enrollment

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: As a singlestage Fleming phase II design was used, efficacy was assessed via a predefined decision rule for the 1year survival rate rather than by pvalue calculation

End point values	Experimental			
Subject group type	Reporting group			
Number of subjects analysed	31			
Units: percent				
number (confidence interval 95%)				
OS@12 rate	61 (42.2 to 78.2)			

Statistical analyses

No statistical analyses for this end point

Secondary: Overall survival

End point title	Overall survival

End point description:

End point type	Secondary

End point timeframe:

time from enrollment until date of death due to any cause

End point values	Experimental			
Subject group type	Reporting group			
Number of subjects analysed	31			
Units: month				
median (confidence interval 95%)				
median Overall survival	13.4 (9.1 to 16.3)			

Statistical analyses

No statistical analyses for this end point

Secondary: Progression-free survival

End point title	Progression-free survival

End point description:

End point type	Secondary

End point timeframe:

time from enrollment untl date of disease progression acc. to RECIST 1.1 or death due to any cause

End point values	Experimental			
Subject group type	Reporting group			
Number of subjects analysed	31			
Units: month				
median (confidence interval 95%)				
median PFS	5.3 (4.8 to 6.9)			

Statistical analyses

No statistical analyses for this end point

Secondary: Best response acc. to RECIST 1.1

End point title	Best response acc. to RECIST 1.1

End point description:

non-CR/non-PD - corresponding to patients with non-target lesions

Missing - patient discontinued without restaging

End point type	Secondary

End point timeframe:

from enrollement to treatment discontinuation

End point values	Experimental			
Subject group type	Reporting group			
Number of subjects analysed	31			
Units: subjects				
Complete response	0			
Partial response	13			
Stable disease	8			
Progressive disease	1			
non-CR/non-PD	8			
Missing	1			

Statistical analyses

No statistical analyses for this end point

Secondary: Overall response rate (ORR)

End point title	Overall response rate (ORR)

End point description:

End point type	Secondary

End point timeframe:

from enrollment until treatment discontinuation

End point values	Experimental			
Subject group type	Reporting group			
Number of subjects analysed	31			
Units: percent				
number (confidence interval 95%)				
ORR	42 (24.5 to 60.9)			

Statistical analyses

No statistical analyses for this end point

Secondary: Time to tumor progression

End point title	Time to tumor progression

End point description:

End point type	Secondary

End point timeframe:

from enrollment until time of disease progression acc. to RECIST 1.1

End point values	Experimental			
Subject group type	Reporting group			
Number of subjects analysed	31			
Units: month				
median (confidence interval 95%)				
median time-to-tumor progression	6.4 (4.9 to 8.5)			

Statistical analyses

No statistical analyses for this end point

Secondary: Feasibility rate

End point title	Feasibility rate

End point description:

defined as 1 – severe toxicity/withdrawal rate before the fourth cycle of pembrolizumab/olaparib has been completed

End point type	Secondary

End point timeframe:

until end of the 4th cycle of pembrolizumab/olaparib

End point values	Experimental			
Subject group type	Reporting group			
Number of subjects analysed	31			
Units: percent				
number (confidence interval 95%)				
feasibility rate	84 (66.3 to 94.5)			

Statistical analyses

No statistical analyses for this end point

Adverse events

Adverse events information

Timeframe for reporting adverse events:

AEs - from time of informed consent signing until 30 days after last dose of study treatment
SAEs - from time of informed consent signing until 110 days after last dose of study treatment (or until start of new anti-cancer treatment)

Adverse event reporting additional description:

Listed here are all serious adverse events and the most common non-serious adverse events, which occurred in ≥ 20% of the patients.
A detailed listing of all non-serious adverse events which occurred in ≥ 5% of the patients is attached as pdf file (summary attachment)

Assessment type	Systematic

Dictionary used

Dictionary name	NCI CTCAE
Dictionary version	5

Reporting groups

Reporting group title	Overall

Reporting group description: -

Serious adverse events	Overall		
Total subjects affected by serious adverse events			
subjects affected / exposed	18 / 31 (58.06%)		
number of deaths (all causes)	27		
number of deaths resulting from adverse events	1		
Investigations			
Blood bilirubin increased			
subjects affected / exposed	1 / 31 (3.23%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Cardiac disorders			
Ventricular tachycardia			
subjects affected / exposed	1 / 31 (3.23%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Blood and lymphatic system disorders			
Anaemia			
subjects affected / exposed	1 / 31 (3.23%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		

General disorders and administration site conditions			
Flu like symptoms			
subjects affected / exposed	1 / 31 (3.23%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Pain			
subjects affected / exposed	1 / 31 (3.23%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
General physical health deterioration			
subjects affected / exposed	1 / 31 (3.23%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Gastrointestinal disorders			
Abdominal pain			
subjects affected / exposed	1 / 31 (3.23%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Diarrhoea			
subjects affected / exposed	1 / 31 (3.23%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Gastric haemorrhage			
subjects affected / exposed	2 / 31 (6.45%)		
occurrences causally related to treatment / all	0 / 4		
deaths causally related to treatment / all	0 / 1		
Ileal obstruction			
subjects affected / exposed	1 / 31 (3.23%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Mucositis oral			
subjects affected / exposed	1 / 31 (3.23%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		

Obstruction gastric			
subjects affected / exposed	1 / 31 (3.23%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Upper gastrointestinal haemorrhage			
subjects affected / exposed	1 / 31 (3.23%)		
occurrences causally related to treatment / all	0 / 2		
deaths causally related to treatment / all	0 / 0		
Respiratory, thoracic and mediastinal disorders			
Pneumonitis			
subjects affected / exposed	1 / 31 (3.23%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Other - Bronchoscopy			
subjects affected / exposed	1 / 31 (3.23%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Hepatobiliary disorders			
Jaundice			
subjects affected / exposed	1 / 31 (3.23%)		
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	1 / 31 (3.23%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Urinary tract obstruction			
subjects affected / exposed	1 / 31 (3.23%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Infections and infestations			
Mucosal infection			

subjects affected / exposed	1 / 31 (3.23%)		
occurrences causally related to treatment / all	1 / 1		
deaths causally related to treatment / all	0 / 0		
Urethral infection			
subjects affected / exposed	1 / 31 (3.23%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Urinary tract infection			
subjects affected / exposed	2 / 31 (6.45%)		
occurrences causally related to treatment / all	0 / 3		
deaths causally related to treatment / all	0 / 0		

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

Non-serious adverse events	Overall		
Total subjects affected by non-serious adverse events			
subjects affected / exposed	31 / 31 (100.00%)		
Investigations			
Neutrophil count decreased			
subjects affected / exposed	8 / 31 (25.81%)		
occurrences (all)	15		
White blood cell count decreased			
subjects affected / exposed	8 / 31 (25.81%)		
occurrences (all)	14		
Nervous system disorders			
Peripheral sensory neuropathy			
subjects affected / exposed	17 / 31 (54.84%)		
occurrences (all)	24		
General disorders and administration site conditions			
Fatigue			
subjects affected / exposed	18 / 31 (58.06%)		
occurrences (all)	28		
Gastrointestinal disorders			
Nausea			

subjects affected / exposed	15 / 31 (48.39%)		
occurrences (all)	28		
Diarrhoea			
subjects affected / exposed	8 / 31 (25.81%)		
occurrences (all)	15		
Constipation			
subjects affected / exposed	7 / 31 (22.58%)		
occurrences (all)	13		
Vomiting			
subjects affected / exposed	7 / 31 (22.58%)		
occurrences (all)	11		

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
24 October 2024	Change of the definition of study end from database closure to Last Patient Last Visit, which corresponds to the common definition

Notes:

Interruptions (globally)

Were there any global interruptions to the trial? No

Limitations and caveats

None reported