Clinical trial results:
Dual Vaccine Trial in Myeloproliferative Neoplasms

Summary

EudraCT number	2019-001434-34
Trial protocol	DK
Global end of trial date	28 February 2022

Results information

Result version number	v1 (current)
This version publication date	24 September 2023
First version publication date	24 September 2023

Trial information

Trial identification

Sponsor protocol code	MPN19H2

Additional study identifiers

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

Notes:

Sponsors

Sponsor organisation name	National Center for cancer immunetherapy
Sponsor organisation address	Borgmester Ib Juuls Vej 13, herlev, Denmark, 2730
Public contact	Jacob Grauslund, Center for cancer immunetherapy, Dept. of Hematology, Herlev hospital, +45 38688961,
Scientific contact	Jacob Grauslund, Center for cancer immunetherapy, Dept. of Hematology, Herlev hospital, +45 38688961,

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	08 September 2023
Is this the analysis of the primary completion data?	Yes
Primary completion date	28 February 2022
Global end of trial reached?	Yes
Global end of trial date	28 February 2022
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

We will conduct a phase I-II study in patients with mutated MPN by vaccinating with PD-L1 and ARGLong2 peptides with Montanide ISA-51 (Seppic Inc., Paris, France) as adjuvant, to monitor the immunological response to vaccination and subsequently safety and toxicity.

Protection of trial subjects:

Yes according to EU and Danish law.
All participants provided written informed consent before trial enrollment. The protocol was approved by the Ethics Committee of the Capital Region of Denmark, the National Board of Health, and the Danish Data Protection Agency, and it was registered at https://www.clinicaltrials.gov (NCT04051307; date of registration: August 9, 2019).

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	07 October 2019
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	Denmark: 9
Worldwide total number of subjects	9
EEA total number of subjects	9

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)	8
From 65 to 84 years	1

85 years and over	0

Subject disposition

Recruitment
Recruitment details: -

Pre-assignment
Screening details: -

Pre-assignment period milestones	
Number of subjects started	9
Number of subjects completed	9

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

Arms	
Arm title	intervention
Arm description: -	
Arm type	Experimental
Investigational medicinal product name	Arglong2
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Concentrate for emulsion for injection
Routes of administration	Subcutaneous use

Dosage and administration details:

Patients were vaccinated with 200 µg of ArgLong2 (ARG1169-206), a 38-aa peptide (ISAKDIVYIGLRDVDPGEHYILKTLGI KYFSMTEVDRL),

Investigational medicinal product name	PD-L1Long1
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Concentrate for emulsion for injection
Routes of administration	Subcutaneous use

Dosage and administration details:

100 µg of PD-L1Long1 (PD-L119-27), a 19-aa peptide (FMTYWHLLNAFTVTVPKDL)

Number of subjects in period 1	intervention
Started	9
Completed	9

Baseline characteristics

End points

End points reporting groups

Reporting group title	intervention
Reporting group description: -	
Subject analysis set title	trial cohort
Subject analysis set type	Full analysis
Subject analysis set description: trial cohort	

Primary: immune response

End point title	immune response[1]
End point description: Immune responses were evaluated with in vitro and ex vivo IFN-g ELISPOT assays	
End point type	Primary
End point timeframe: from baseline to end of trial	

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: All patients showed clear responses, it has little or no effect showing that 100% had a response. see the article. https://www.frontiersin.org/articles/10.3389/fimmu.2023.1117466/full

End point values	trial cohort			
Subject group type	Subject analysis set			
Number of subjects analysed	9			
Units: yes or no	9			

Attachments (see zip file)	In vitro/fig 3 ellispot in vitro.pdf ex vivo/fig 4.pdf

Statistical analyses

No statistical analyses for this end point

Secondary: clinical response

End point title	clinical response
End point description: To evaluate clinical responses, we applied the response criteria for PV and ET. (Barosi G, Mesa R, Finazzi G, Harrison C, Kiladjian JJ, Lengfelder E, et al. Revised response criteria for polycythemia vera and essential thrombocythemia: An ELN and IWG-MRT consensus project. Blood (2013) 121:4778–81. doi: 10.1182/blood-2013-01-47889.)	
End point type	Secondary
End point timeframe: from baseline to end of trial	

End point values	trial cohort			
Subject group type	Subject analysis set			
Number of subjects analysed	9			
Units: yes or no	9			

Attachments (see zip file)	blood samples/figure 2 (blood samples).pdf allele burden/fig 1 allele burden.pdf

Statistical analyses

No statistical analyses for this end point

Adverse events

Adverse events information	
Timeframe for reporting adverse events: from baseline to end of trial.	
Adverse event reporting additional description: Patients were evaluated according to CTCAE ver. 5.0 at every consultation/or visit.	
Assessment type	Systematic

Dictionary used	
Dictionary name	CTCAE
Dictionary version	5.0

Reporting groups	
Reporting group title	intervention

Reporting group description: -

Serious adverse events	intervention		
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 9 (0.00%)		
number of deaths (all causes)	0		
number of deaths resulting from adverse events			

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

Non-serious adverse events	intervention		
Total subjects affected by non-serious adverse events			
subjects affected / exposed	9 / 9 (100.00%)		
Cardiac disorders			
Palpitations			
subjects affected / exposed	1 / 9 (11.11%)		
occurrences (all)	1		
vasovagal reaction			
subjects affected / exposed	1 / 9 (11.11%)		
occurrences (all)	1		
Nervous system disorders			
head ache			
subjects affected / exposed	1 / 9 (11.11%)		
occurrences (all)	1		
Blood and lymphatic system disorders			

edema subjects affected / exposed occurrences (all)	1 / 9 (11.11%) 1		
General disorders and administration site conditions Pain subjects affected / exposed occurrences (all)	2 / 9 (22.22%) 2		
Immune system disorders flu like symptoms subjects affected / exposed occurrences (all)	3 / 9 (33.33%) 3		
Gastrointestinal disorders Diarrhoea subjects affected / exposed occurrences (all) Dysgeusia subjects affected / exposed occurrences (all)	1 / 9 (11.11%) 1 1 / 9 (11.11%) 1		
Skin and subcutaneous tissue disorders Eczema subjects affected / exposed occurrences (all) Vaccination site reaction subjects affected / exposed occurrences (all) Pruritus subjects affected / exposed occurrences (all)	1 / 9 (11.11%) 1 9 / 9 (100.00%) 9 1 / 9 (11.11%) 1		
Musculoskeletal and connective tissue disorders Dry skin subjects affected / exposed occurrences (all) Rotator cuff syndrome subjects affected / exposed occurrences (all)	1 / 9 (11.11%) 1 1 / 9 (11.11%) 1		
Product issues			

body odor subjects affected / exposed occurrences (all)	1 / 9 (11.11%) 1		
Infections and infestations Herpes simplex subjects affected / exposed occurrences (all) Infection subjects affected / exposed occurrences (all)	 1 / 9 (11.11%) 3 3 / 9 (33.33%) 3		
Metabolism and nutrition disorders Fatigue subjects affected / exposed occurrences (all)	 3 / 9 (33.33%) 3		

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? No

Interruptions (globally)

Were there any global interruptions to the trial? No

Limitations and caveats

None reported