Clinical trial results:
A randomised, double blind, placebo controlled study to assess the effect of testosterone treatment on arterial stiffness in patients with type 2 diabetes, peripheral vascular disease and hypogonadism.

Summary

EudraCT number	2005-003652-35
Trial protocol	GB
Global end of trial date	01 June 2006

Results information

Result version number	v1 (current)
This version publication date	24 October 2021
First version publication date	24 October 2021

Trial information

Trial identification

Sponsor protocol code	300

Additional study identifiers

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

Notes:

Sponsors

Sponsor organisation name	Barnsley Hospital NHS Foundation Trust
Sponsor organisation address	Research and Development, Block 14, Barnsley Hospital, Gawber Road, Barnsley, United Kingdom, S75 2EP
Public contact	Barnsley Hospital NHS Foundation Trust, Barnsley Hospital NHS Foundation Trust, barnsley.research@nhs.net
Scientific contact	Barnsley Hospital NHS Foundation Trust, Barnsley Hospital NHS Foundation Trust, barnsley.research@nhs.net

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	31 May 2007
Is this the analysis of the primary completion data?	No

Global end of trial reached?	Yes
Global end of trial date	01 June 2006
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

To test the effect of twelve weeks of testosterone replacement, given as Sustanon 250 IM injection, on arterial stiffness measured by ultrasound derived stiffness index beta of the femoral artery in men with hypogonadism, type 2 diabetes mellitus and peripheral vascular disease (the study population).

Protection of trial subjects:

Baseline safety assessments included physical examination with digital rectal examination, haematocrit (Cell-Dyn 4000 analyser, Abbott Laboratories USA) and PSA (chemiluminescent microparticle immunoassay, Abbott Laboratories, USA). Patients with evidence of prostate cancer on digital rectal examination, raised PSA or polycythaemia were excluded from the trial and referred for appropriate specialist assessment if indicated. Safety assessments were repeated at 12 and 26 weeks and subjects withdrawn from the study if safety parameters were breached.

Questions with regard to adverse events were specifically asked at 3 and 6 months. The relevant questions were "have you had any new symptoms since the start of the study?" and "have any symptoms or medical conditions got worse since starting the study?" Patients were encouraged to report adverse events at their visits for study medication injection which occurred every two weeks. They were also advised to contact the research team about any adverse events at any time during the study. All adverse events were reported to the chief investigator within 14 days.

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	01 October 2005
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	United Kingdom: 24
Worldwide total number of subjects	24
EEA total number of subjects	24

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)	24
From 65 to 84 years	0
85 years and over	0

Subject disposition

Recruitment

Recruitment details: -

Pre-assignment

Screening details:

Participants were men aged greater than 40 years with insulin treated type 2 diabetes on a stable insulin regime for greater than three months. They had evidence of hypogonadism as defined by serum testosterone levels less than 12 nmol/L on two consecutive morning samples taken on different days and symptoms of hypogonadism

Period 1

Period 1 title	Overall Trial (overall period)
Is this the baseline period?	Yes
Allocation method	Randomised - controlled
Blinding used	Double blind
Roles blinded	Subject, Investigator

Arms

Are arms mutually exclusive?	Yes
Arm title	Placebo

Arm description: -

Arm type	Placebo
Investigational medicinal product name	Placebo - saline
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Concentrate for solution for injection/infusion
Routes of administration	Intramuscular use

Dosage and administration details:

0.8 ml 0.9% saline every two weeks

Arm title	Testosterone replacement therapy

Arm description: -

Arm type	Active comparator
Investigational medicinal product name	Testosterone
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Concentrate and solvent for solution for injection/infusion
Routes of administration	Intramuscular use

Dosage and administration details:

0.8 ml Sustanon 250 injection

Number of subjects in period 1	Placebo	Testosterone replacement therapy
Started	13	11
Completed	13	11

Baseline characteristics

End points

End points reporting groups

Reporting group title	Placebo
Reporting group description: -	
Reporting group title	Testosterone replacement therapy
Reporting group description: -	

Primary: HbA1C

End point title	HbA1C
End point description:	
The primary outcome was the effect of 26 week testosterone replacement on diabetes control measured by HbA1C in hypogonadal men with type 2 diabetes treated with insulin	
End point type	Primary
End point timeframe:	
26 weeks	

End point values	Placebo	Testosterone replacement therapy		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	13	11		
Units: mmol				
number (not applicable)	13	11		

Statistical analyses

Statistical analysis title	Baseline blood results
Comparison groups	Placebo v Testosterone replacement therapy
Number of subjects included in analysis	24
Analysis specification	Pre-specified
Analysis type	other[1]
P-value	= 0.531
Method	ANCOVA

Notes:

[1] - mean +/- standard deviation

Adverse events

Adverse events information

Timeframe for reporting adverse events:

24 hours

Assessment type	Systematic

Dictionary used

Dictionary name	MedDRA
Dictionary version	12

Reporting groups

Reporting group title	Placebo
Reporting group description: -	
Reporting group title	Testosterone replacement therapy

Reporting group description: -

Serious adverse events	Placebo	Testosterone replacement therapy	
Total subjects affected by serious adverse events			
subjects affected / exposed	2 / 13 (15.38%)	1 / 11 (9.09%)	
number of deaths (all causes)	0	0	
number of deaths resulting from adverse events	0	0	
Cardiac disorders			
Exacerbation of known heart failure			
subjects affected / exposed	0 / 13 (0.00%)	1 / 11 (9.09%)	
occurrences causally related to treatment / all	0 / 0	0 / 1	
deaths causally related to treatment / all	0 / 0	0 / 0	
Heart failure			
subjects affected / exposed	1 / 13 (7.69%)	0 / 11 (0.00%)	
occurrences causally related to treatment / all	0 / 1	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	
Respiratory, thoracic and mediastinal disorders			
Obstructive sleep apnoea			
subjects affected / exposed	0 / 13 (0.00%)	1 / 11 (9.09%)	
occurrences causally related to treatment / all	0 / 0	0 / 1	
deaths causally related to treatment / all	0 / 0	0 / 0	
Renal and urinary disorders			
Acute kidney injury			

subjects affected / exposed	1 / 13 (7.69%)	0 / 11 (0.00%)	
occurrences causally related to treatment / all	0 / 1	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	
Bladder cancer			
subjects affected / exposed	1 / 13 (7.69%)	0 / 11 (0.00%)	
occurrences causally related to treatment / all	0 / 1	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	
Endocrine disorders			
worsening foot ulceration			
subjects affected / exposed	1 / 13 (7.69%)	0 / 11 (0.00%)	
occurrences causally related to treatment / all	0 / 1	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	

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

Non-serious adverse events	Placebo	Testosterone replacement therapy	
Total subjects affected by non-serious adverse events			
subjects affected / exposed	4 / 13 (30.77%)	3 / 11 (27.27%)	
Injury, poisoning and procedural complications			
post injection muscle haematoma			
subjects affected / exposed	0 / 13 (0.00%)	1 / 11 (9.09%)	
occurrences (all)	0	1	
Fracture of humerus			
subjects affected / exposed	1 / 13 (7.69%)	0 / 11 (0.00%)	
occurrences (all)	1	0	
Cardiac disorders			
unilateral calf swelling with no DVT			
subjects affected / exposed	1 / 13 (7.69%)	0 / 11 (0.00%)	
occurrences (all)	1	0	
Respiratory, thoracic and mediastinal disorders			
Chest Infection			
subjects affected / exposed	0 / 13 (0.00%)	1 / 11 (9.09%)	
occurrences (all)	0	1	
Endocrine disorders			

Gynaecomastia subjects affected / exposed occurrences (all)	1 / 13 (7.69%) 1	0 / 11 (0.00%) 0	
Infections and infestations Viral Illness subjects affected / exposed occurrences (all)	1 / 13 (7.69%) 1	1 / 11 (9.09%) 1	

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

Online references

http://www.ncbi.nlm.nih.gov/pubmed/17468196