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Surgical glue for the treatment of damaged veins in patients with venous leg ulcers

Submission date
26/07/2017

Recruitment status
No longer recruiting

Registration date
20/02/2018

Overall study status
Completed

Last Edited
01/04/2019

Condition category
Injury, Occupational Diseases, Poisoning

[ ] Prospectively registered
[X] Protocol
[ ] Statistical analysis plan
[ ] Results
[ ] Individual participant data
[ ] Record updated in last year

Plain English summary of protocol

Background and study aims
Leg ulcers are painful, can cause dangerous systemic infections, and the treatment can be difficult to endure. Therefore, treatments that reduce the time taken for the ulcer to heal are needed. Some ulcers are caused by blood flowing the wrong way down the long veins of the leg, usually as a result of poorly functioning valves. It is known that the usual treatment of compression bandages, wound care and assessment by a specialist leg ulcer nurse helps ulcers to heal. It is not known whether treatment with surgical glue helps ulcers to heal faster, or slower, or no differently than with the usual treatment alone. There has not been any research into the use of surgical glue for this purpose, though other studies have shown that it is a safe, effective treatment for varicose veins of the leg, which are also caused by damaged valves. The aim of this study is to establish whether the surgical glue is also effective for the treatment of leg ulcers.

Who can participate?
Adults aged 18 and older who have venous ulcer of the lower limb.

What does the study involve?
Participants are randomly allocated to one of two groups. Those in the first group receive usual care, and those in the second group receive the usual care and the surgical glue procedure. Participants randomly allocated to receive the surgical glue treatment are asked to return at three, six and 12 months after their procedure to undergo further ultrasound scans. At these appointments, they are asked to complete a questionnaire asking them about their symptoms. Patients randomly allocated to usual care only will be asked to complete the same questionnaires by post or online.

What are the possible benefits and risks of participating?
There are no benefits to taking part in this study. Participating in research like this means that you are helping to generate new evidence that can justify developing and improving treatment for those who will develop leg ulcers in future. Like any medical treatment, the surgical glue procedure has some risks associated with it. These include: allergic reaction, bleeding, abnormal connection between an artery and vein (‘fistula’), blood clot in the deep veins (‘deep vein thrombosis’), swelling of the leg, darkening of the skin (‘hyperpigmentation’), infection, pain,

numbness around the area where the needle is introduced, inflammation of the veins ('phlebitis'), blood clot in one of the arteries in the lung ('pulmonary embolism'), and scarring. Surgical glue is licensed for use in the United Kingdom, and the risk of serious complications is very low.

Where is the study run from?
University Hospital of South Manchester (UK)

When is the study starting and how long is it expected to run for?
November 2016 to June 2020

Who is funding the study?
Medtronic (USA)

Who is the main contact?
Mr David Riding (Public)
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Contact information

Type(s)
Public

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Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers
ISR-2016-10829

Study information

Scientific Title
Pilot study of cyanoacrylate occlusion of the lower limb veins in patients with venous leg ulcers

Study objectives
The aim of this study is to determine if blocking veins with surgical glue may shorten the time taken for ulcers to heal.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Not provided at time of registration

Study design
Single centre open label pilot randomised controlled trial

Primary study design
Interventional

Secondary study design
Randomised controlled trial

Study setting(s)
Hospital

Study type(s)
Treatment

Participant information sheet

Health condition(s) or problem(s) studied
Venous leg ulcer

Interventions
Cyanoacrylate (surgical glue) occlusion plus compression bandaging, wound care and specialist leg ulcer clinician review versus compression bandaging, wound care and specialist leg ulcer clinician review only. Patients are randomised 1:1 using a computerised system. The surgical glue procedure is performed using a small amount of local anaesthetic and is carried out with ultrasound scan guidance.

The procedure is as follows:
1. The patient may feel some minor pain or stinging as a local anaesthetic injection is used to numb the site where the surgeon will access the vein.
2. Once the area is numb, the surgeon will insert a catheter (i.e., a small hollow tube) into the leg vein. The patient may feel some pressure as the catheter is placed.
3. The catheter will be placed in specific areas along the diseased vein to deliver small amounts of the surgical glue. The patient may feel a mild sensation of pulling or tugging. The surgeon will use an ultrasound scanner during the procedure to guide and position the catheter correctly.

4. After treatment, the catheter is removed and a dressing is placed over the puncture site
5. It is expected that patients will return to normal activity immediately after the procedure

The participant usually needs to spend around 3-4 hours in hospital for pre- and post-procedural checks and monitoring. The procedure itself takes between 30 and 60 minutes.

Patients randomly allocated to the control group just receive compression bandaging , wound care and specialist leg ulcer clinician review. This is the routine care for all leg ulcer patients. Participants randomly allocated to receive the surgical glue treatment are asked to return at three, six and 12 months after their procedure to undergo further ultrasound scans. At these appointments, they are asked to complete a questionnaire asking them about their symptoms. Patients randomly allocated to usual care only will be asked to complete the same questionnaires by post or online.

Intervention Type
Procedure/Surgery

Primary outcome measure
1. Rate of healing in leg ulcer surface area is measured using tracings of the ulcer area every seven days (+/- 2 days) until the ulcer has healed, in the opinion of the reviewing clinician
2. Time to healing is measured by recording the number of days between the randomisation date and the day on which the clinicians see that the wound has healed

Secondary outcome measures
1. Quality of life, self-assessment of health, and severity of symptoms is measured using EQ-5D and VEINES-QoL scores 6,7 at baseline, three, six and 12 months
2. Lower limb venous disease is measured using the Venous Clinical Severity Score, at baseline, three, six and 12 months
3. Rate of venous recanalization measured using duplex ultrasound at baseline, three, six and 12 months
4. Patient satisfaction is measured using Likert scale measures in a written questionnaire at baseline, three, six and 12 months
5. Adverse events are measured using reports at 12 months
6. Health economic analysis is measured using the cost and frequency of visits to wound care and outpatient clinic, district nurse visit costs, inpatient treatment costs and costs of complications of the treatment or of non-healing ulcers at baseline, three, six and 12 months

Overall study start date
29/11/2016

Completion date
05/06/2020

Eligibility

Key inclusion criteria
1. Venous ulcer of the lower limb at least 2cm2 (CEAP classification C6)
2. Ulceration present for >6 weeks and <6months despite treatment
3. Ipsilateral lower limb vein incompetence of >0.5 seconds duration, confirmed by venous duplex imaging
4. Aged ≥18 years

5. Willing and able to provide informed consent
6. Ipsilateral ankle-brachial pressure index ≥0.8 at the time of randomisation

Participant type(s)
Patient

Age group
Adult

Lower age limit
18 Years

Sex
Both

Target number of participants
55

Key exclusion criteria
1. Non-venous cause of ulceration: peripheral arterial disease (ABPI < 0.8), vasculitis, neuropathy, recent lower limb trauma, chronic dermatitis, pyoderma gangrenosum, malignancy, chronic osteomyelitis or any other lower limb pathology that may be contributing to the ulceration, in the opinion of the investigator.
2. Inability to tolerate or comply with lower limb compression therapy
3. Inability to receive prompt endovenous treatment
4. Unwilling or unable to provide informed consent
5. Current enrolment in another study pertaining to venous ulceration
6. Primary or secondary immunosuppression
7. Previous treatment of the target vein or other venous surgery that may compromise the study, in the opinion of the research team
8. Patient has pre-planned surgical intervention or endovascular procedure scheduled up to 30 days after the index procedure
9. Currently pregnant
10. Duplex evidence of deep venous incompetence or occlusion
11. Clinical evidence of post-thrombotic syndrome
12. Incompetent vein considered too tortuous to allow VenaSealTM treatment
13. Inability to tolerate VenaSealTM treatment

Date of first enrolment
06/11/2017

Date of final enrolment
05/06/2019

Locations

Countries of recruitment
England

United Kingdom

Study participating centre
University Hospital of South Manchester
Southmoor Road
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Sponsor information

Organisation
University Hospital of South Manchester

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Sponsor type
Hospital/treatment centre

Website
https://www.uhsm.nhs.uk/about/research/cardiovascular-hub/

ROR
https://ror.org/00he80998

Funder(s)

Funder type
Not defined

Funder Name
Medtronic

Alternative Name(s)
Medtronic Inc.

Funding Body Type
Private sector organisation

Funding Body Subtype
For-profit companies (industry)

Location
United States of America

Results and Publications

Publication and dissemination plan
Plans to publish the report of this research in a high-impact peer reviewed journal on 01/06/2020.

Intention to publish date
01/06/2020

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study are/will be available upon request from Professor Charles McCollum.
Charles.mccollum@manchester.ac.uk

IPD sharing plan summary
Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Participant information sheet	version V2		01/04/2019	No	Yes
Protocol file	version V1	21/06/2017	01/04/2019	No	No