

Deep Vein Thrombosis: resolution, recurrence and post-thrombotic syndrome

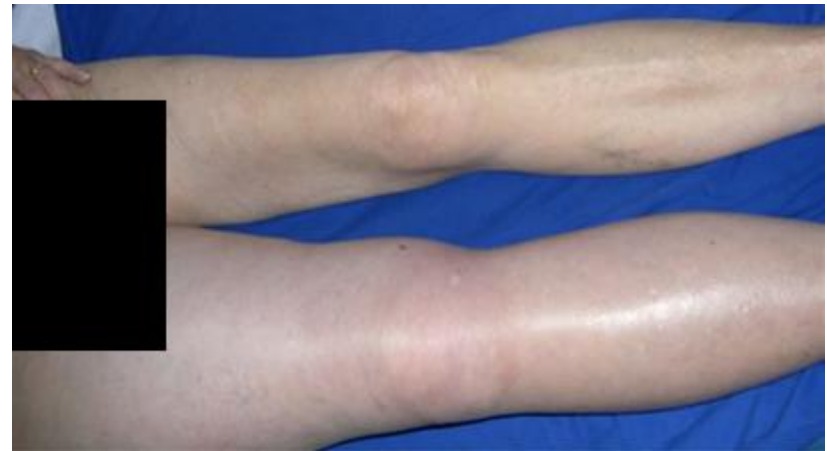
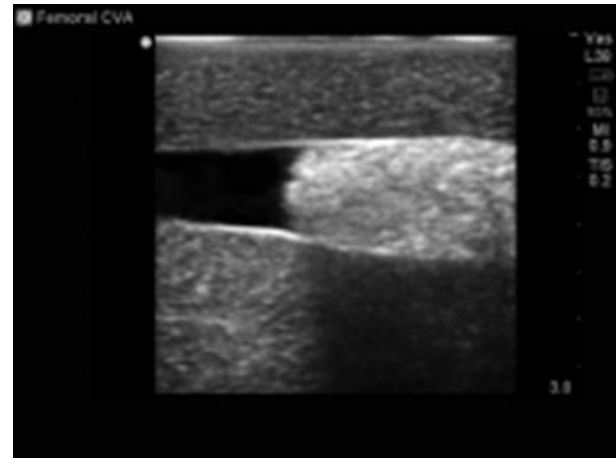
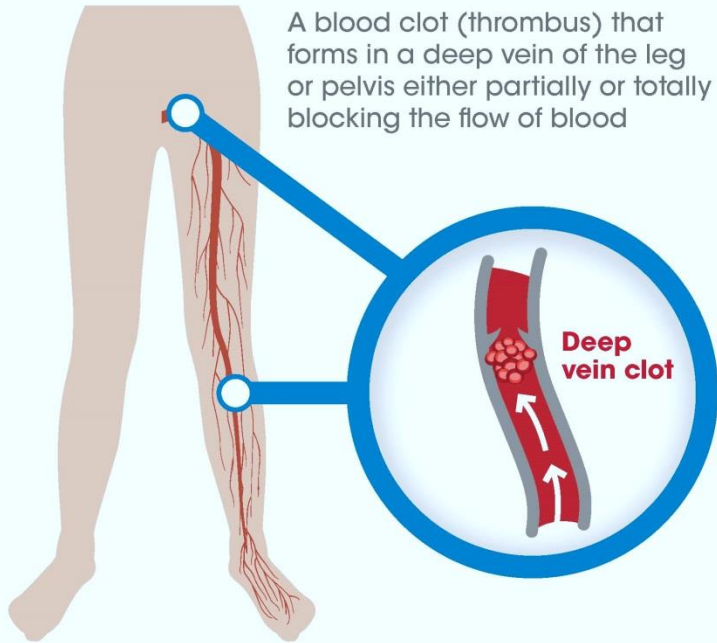
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Deep Vein Thrombosis (DVT)

What is Deep Vein Thrombosis (DVT)?

A blood clot (thrombus) that forms in a deep vein of the leg or pelvis either partially or totally blocking the flow of blood



Post thrombotic syndrome

Symptoms:

- Pain
- Heaviness
- Itching
- Oedema
- Ulceration



- Chronic condition
- Difficult to treat
- Can become established as soon as 2 years after DVT
- 20 - 50% patients with DVT develop PTS within 2 years

Rationale for Research

The three questions most commonly asked by patients with a DVT are:

1. When will it go away?
2. Will I get it again?
3. Will it do any permanent damage?



Not every patient that has a DVT will develop a recurrent DVT or PTS but there is a lack of research evidence to indicate which patients will.

New developments in catheter directed thrombolysis/clot removal and venous stenting promising but outcomes better if undertaken in acute stage – important to identify those most at risk who would benefit.

Project Overview

To identify the key factors that predict recurrent deep vein thrombosis and the development of post thrombotic syndrome to inform future intervention research.

PHASE 1

Systematic literature review – identify evidence base for risk factors for DVT recurrence and the development of PTS.

PHASE 2

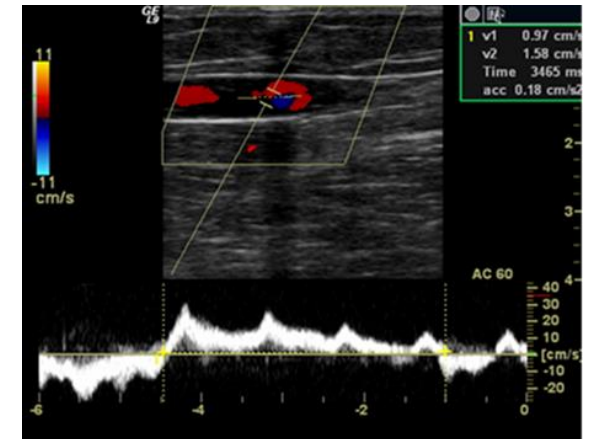
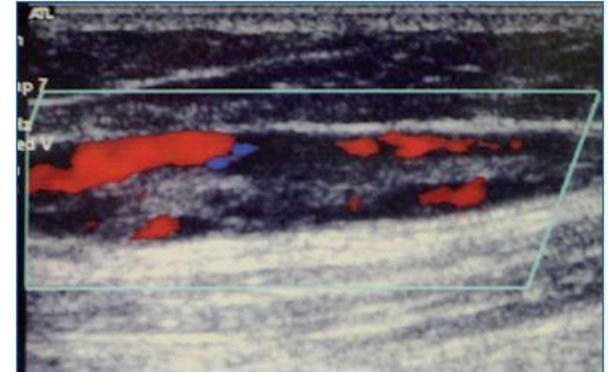
Consensus study – identify potential risk factors not revealed by literature review & explore which factors experts believe are most influential.

PHASE 3

Prospective observational study – variation in DVT resolution, patient outcomes & examination of predictive risk factors for the development of recurrent DVT and PTS.

Phase 3: Observational Study

- Using ultrasound imaging to examine :
 - Changes in thrombus characterisation over time
 - How quickly the DVT resolves
 - Resolution extent by end of treatment
 - Any damage caused to the vein valves
 - Any extension to original DVT
 - Any recurrence during follow up period



- 2 groups:

Patients with first episode of DVT

Patients with previous ipsilateral DVT

- 6 visits over 2 years: 1 week, 1 month, 3 months, 6 months, 1 year, 2 years

Data Analysis



- **Primary endpoints:**
 - DVT resolution
 - Recurrence
 - Development of PTS

- **Logistic regression - identify variables to best predict DVT recurrence &/or PTS**
- **Probability of recurrence & PTS estimated using survival analytical methods (Kaplan and Meier & Cox regression) to investigate coefficients of predictor variables**





Recruitment



91 declined:

4580 patients scanned for DVT

1086 +ve DVT

286 patients met inclusion criteria

195 patients recruited to study:

- 171 First episode of DVT
- 24 Previous ipsilateral DVT

= 68 % Recruitment Rate

Carer for dependent	9
Did not want to give reason for decline	25
Does not want to come back to hospital for follow up	13
Geographical	12
Does not feel well enough to attend for follow up	7
No time for follow-up	24
Found scan too painful	1

Participants



120 Male and 75 female

Age range 21-85 years (mean 56 years, median 57 years)

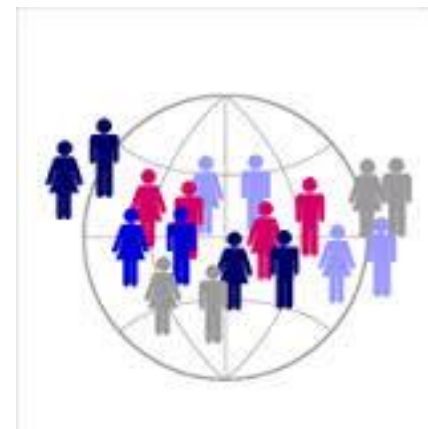
36 current smokers, 67 ex-smokers, 92 never smoked

10 NIDDM, 4 IDDM, 181 no diabetes

52 hypertension, 143 no hypertension

2 heart failure, 193 no heart failure

Treatment: 29 Clexane then warfarin, 162 NOACS, 2 aspirin only, 2 NOACS then warfarin (drug reaction)



DEMOGRAPHICS

Retention

As of 14th June 2016: 181/195 participants remain in the study.

4 patients have missed one appointment.

14 patients are off study:



5 deceased:

- 2 Cancer**
- 1 Heart Failure**
- 1 MI and PE**
- 1 Aortic dissection**

9 withdrew:

- 1 caring for husband**
- 1 unable to find time**
- 7 did not give reason**



21/26 patients have completed 2 year follow up with no data gaps.

109/125 patients with first episode of DVT have completed 1 complete year of follow up (no gaps).

20 patients have developed a recurrent DVT.

Where I'm At & Where I'm Headed

- More than 3 years in – time flies!
- Jan 2016 stopped recruiting new patients
- Feb 2016 first patients recruited to study completed 2 years follow up



- January 2017 - 1 year data analysis for all participants
- December 2017 all patients to complete follow up.
- December 2017-April 2018 Final data analysis & complete write up