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TB Reach 5: to compare the efficacy of video observed treatment (VOT) versus directly observed treatment (DOT) in supporting adherence in patients with active tuberculosis

Submission date
17/04/2014

Recruitment status
No longer recruiting

Registration date
17/04/2014

Overall study status
Completed

Last Edited
08/05/2019

Condition category
Infections and Infestations

[X] Prospectively registered

[X] Protocol

[X] Statistical analysis plan

[X] Results

[_] Individual participant data

Plain English summary of protocol

Background and study aims

Tuberculosis (TB) control is founded on the basis of early diagnosis to reduce the risk of onward transmission to others, and the patient completing an effective course of treatment for a minimum of 6 months to cure the disease. In the UK, TB patients at high risk of poor adherence to TB treatment are recommended to have directly observed treatment (DOT - where a responsible adult watches the patient swallow each dose) to minimise the risk of relapse, drug resistance and spread of infection, but it is not widely used. Groups eligible for DOT include patients with social risk factors (including alcohol or drug use, history of imprisonment, homelessness), mental health problems, evidence of poor adherence, previous TB treatment and clinically complex disease requiring extra support. In the UK, a high proportion of patients who are recommended for DOT do not receive DOT. Whilst DOT has been recommended in the USA, it can be time consuming for both patients and the care provider. Recently the University of San Diego has developed a smartphone app allowing patients to easily submit a video recording of themselves taking treatment to a secure server for remote viewing by a health care worker (video observed treatment – VOT) to save travel time required to conduct DOT. This has been shown to be effective and highly acceptable in non-socially complex cases in the USA but has not been tested in more socially complex patients such as those recommended for DOT in the UK. The study team have pioneered the use of VOT with the pan London Find&Treat TB outreach service without the use of a dedicated smartphone app in socially complex cases in London and again found it to be highly acceptable to patients. They are collaborating with the University of San Diego to use their VOT app in a study comparing the effectiveness of VOT versus DOT in UK patients eligible for DOT.

Who can participate?

All TB patients, male or female, 16 years of age or older at participating sites who meet national or local guidance for DOT.

What does the study involve?
Participants requiring once a day TB treatment are recruited over a two-year period and randomly allocated to either DOT organised by the TB clinic or VOT organised by the research team. In addition, a small number of TB patients with multi-drug resistant TB requiring more than once daily treatment are recruited into a group where VOT alone is offered. The VOT group submit VOT clips using a dedicated smartphone with a pre-loaded app allowing upload to a secure server. Participants are trained in how to lay out each drug on a labelled laminated medication sheet with a space for each drug and take each drug individually whilst recording the VOT clip on the smartphone. VOT clips are submitted automatically as soon as the phone is connected to a cellular data network (data plan provided with phone) or a wireless network. VOT clips are read by a study nurse/VOT observer daily during weekdays with weekend clips read on Mondays. For the DOT group, a trained health professional, or a responsible lay person supported by a trained health professional, provides the prescribed medication and observes the patient swallowing every dose (or for some schedules observing doses during weekdays with self-administered therapy at weekends). Organised by the TB clinic, DOT is delivered according to usual practice.

What are the possible benefit and risks of participating?
Observing participants take their treatment improves their chances of completing the full course and being cured. At the moment most TB patients having DOT are expected to attend the clinic but this study will show whether patients on DOT should be given more choices on where and how their treatment should be organised. Participants are also making an important contribution to the future treatment of patients with TB. The following are considered as potential risks: loss to follow up; death from TB; breaches of data security; violence to study personnel during the course of participant interaction; complaints about the study from participants or participating centres; adverse drug reactions.

Where is the study run from?
This study has been set up by the Royal Free NHS Foundation Trust in collaboration with “Find&Treat” under the University College London Hospitals NHS Foundation Trust. The study centre is located at the Farr Institute, University College London, UK.

When is the study starting and how long is it expected to run for?
September 2014 to December 2016

Who is funding the study?
National Institute for Health Research (NIHR) (UK)

Who is the main contact?
1. Prof Andrew Hayward
a.hayward@ucl.ac.uk
2. Dr Rob Aldridge
r.aldridge@ucl.ac.uk
3. Elizabeth Garber
e.garber@ucl.ac.uk

Contact information

Type(s)
Scientific

Contact name
Prof Andrew Hayward

Contact details
Farr Institute of Health Informatics Research
Centre for Infectious Disease Epidemiology
University College London
222 Euston Road
London
United Kingdom
NW1 2DA
-
a.hayward@ucl.ac.uk

Type(s)
Scientific

Contact name
Ms Elizabeth Garber

Contact details
Farr Institute of Health Informatics Research
Centre for Infectious Disease Epidemiology
University College London
222 Euston Road
London
United Kingdom
NW1 2DA
-
e.garber@ucl.ac.uk

Type(s)
Scientific

Contact name
Dr Rob Aldridge

Contact details
Research Department of Infectious Disease Informatics
Farr Institute of Health Informatics Research
University College London
222 Euston Road
London
United Kingdom
NW1 2DA
-
r.aldridge@ucl.ac.uk

Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers
10565

Study information

Scientific Title
A multicentre, randomised, superiority study to compare the efficacy of video observed treatment (VOT) versus directly observed treatment (DOT) in supporting adherence in patients with active tuberculosis

Acronym
TB Reach 5

Study objectives
Rates of tuberculosis (TB) in London have doubled in the last 2 decades and are now highest amongst homeless people, prisoners and drug and alcohol users (hard to reach groups). While most people who are infected with TB will never go on to develop active disease, hard to reach groups may be at much greater risk of infection and progression to active disease. Tuberculosis control is founded on patients completing an effective course of treatment for a minimum of 6 months plus early diagnosis of disease to reduce the risk of spreading the infection to others. Hard to reach groups do not engage well with traditional hospital-based services. Their lifestyle factors mask clinical symptoms of disease and complicate treatment through insecure housing tenure, addiction issues and frequent contact with the criminal justice system. Directly observed therapy (DOT) where a responsible adult watches the patient swallow every dose has been recommended internationally as a standard of care for hard to reach groups but is not widely used in London. Tuberculosis amongst hard to reach groups now presents an immense public health challenge.

It is hypothesised that in comparison to DOT, VOT will increase the proportion of patients who have more than 80% of doses observed during a 2-month period.

Ethics approval required
Old ethics approval format

Ethics approval(s)
NRES Committee East of England - Essex, Research Ethics Committee, 20/03/2014, ref: 10/H0302/51

Study design
Both; Interventional; Design type: Treatment

Primary study design
Interventional

Secondary study design

Randomised controlled trial

Study setting(s)
Hospital

Study type(s)
Treatment

Participant information sheet
Not available in web format, please use the contact details to request a patient information sheet

Health condition(s) or problem(s) studied
Topic: Respiratory disorders; Subtopic: Respiratory (all Subtopics); Disease: Respiratory

Interventions
Participants requiring once a day tuberculosis treatment will be recruited over a two-year period and randomly allocated to either a DOT treatment observation arm organised by the TB clinic or VOT arm organised by the research team. In addition, a small number of TB patients with multi-drug resistant TB requiring more than once daily treatment will be recruited into a non-randomised arm of the study where VOT alone is offered.

The VOT intervention arm involves: Submission of VOT clips using dedicated smartphone with pre-loaded app allowing upload to a secure server. Participants will be trained in how to lay out each drug on a labelled laminated medication sheet with a space for each drug and take each drug individually whilst recording the VOT clip on the smartphone. VOT clips will be submitted automatically as soon as the phone is connected to a cellular data network (data plan provided with phone) or a wireless network. VOT clips will be read by a study nurse/VOT observer daily during weekdays with weekend clips read on Mondays.

DOT control arm: A trained health professional, or responsible lay person supported by a trained health professional, provides the prescribed medication and observes the patient swallowing every dose (or for some schedules observing doses during weekdays with self-administered therapy at weekends). Organised by the tuberculosis clinic, DOT will be delivered according to usual practice, including: a) clinic based; b) community based working with a responsible professional such as a hostel worker or pharmacist; c) through a DOT worker outreaching DOT.

Follow Up Length: 6 month(s); Study Entry : Registration and One or More Randomisations

Intervention Type
Other

Phase
Not Applicable

Primary outcome measure
Proportion of participants having more than 80% of scheduled VOT/DOT sessions successfully competed in the 2 months following randomisation (binary aggregation)

Secondary outcome measures

Assessment after recruitment will include:
1. Proportion of doses observed over 2 months and 6 months
2. Reported side effects
3. Culture conversion at 2 months
4. Quality of life
5. Participants' satisfaction
6. Treatment outcome at 12 months (completed, loss to follow up, transferred out, died); acquisition of new resistance; and membership of a transmission cluster - based on data linkage to the national surveillance data
7. Cost effectiveness measured using quality-adjusted life years, and including costs to NHS and participant

Overall study start date
01/09/2014

Completion date
31/12/2016

Eligibility

Key inclusion criteria
Any TB patient aged 16 years or older seen at participating clinics who meets national or local guidance for DOT and are assessed to be eligible for DOT.
Target Gender: Male & Female ; Lower Age Limit 16 years

Participant type(s)
Patient

Age group
Adult

Sex
Both

Target number of participants
Randomised trial: 400 in total (200 in each arm)

Total final enrolment
226

Key exclusion criteria
1. Patients who are eligible for DOT but not suitable for VOT due to:
1.1. Need for intravenous treatment
1.2. No access to the facilities to charge a smartphone
2. Patients in whom the primary outcome cannot be measured because they have less than 2 months of treatment remaining
3. MDRTB patients requiring more than once daily treatment who will be recruited into a non-

randomised arm of the study where VOT is offered, with the same follow up as the other study arms. This represents small numbers of patients and is planned because DOT is highly difficult to organise in this group and VOT is therefore already considered the optimal arrangement

Date of first enrolment
01/09/2014

Date of final enrolment
30/09/2016

Locations

Countries of recruitment
England

United Kingdom

Study participating centre
Farr Institute
University College London
222 Euston Road
London
United Kingdom
NW1 2DA

Sponsor information

Organisation
University College London

Sponsor details
c/o David Wilson
Joint Research Office
1st Floor, Maple House – Suite B
149 Tottenham Court Road
London
England
United Kingdom
W1T 7DN

Sponsor type
University/education

Website
http://www.ucl.ac.uk/

ROR
https://ror.org/02jx3x895

Funder(s)

Funder type
Government

Funder Name
National Institute for Health Research

Alternative Name(s)
National Institute for Health Research, NIHR Research, NIHRresearch, NIHR - National Institute for Health Research, NIHR (The National Institute for Health and Care Research), NIHR

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
United Kingdom

Results and Publications

Publication and dissemination plan
To be confirmed at a later date

Intention to publish date

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Statistical Analysis Plan	version v1.05	16/05/2016	25/05/2016	No	No
Protocol file	version v1.03	28/07/2014	16/06/2017	No	No
Results article	results	23/03/2019	08/05/2019	Yes	No