

Wound Management of Open Lower Limb Fracture: The WOLLF Trial

Dr Julie Bruce, Principal Research Fellow



WOLLF
Wound Management of Open Lower Limb Fractures

Chief Investigator: Prof Matt Costa

Background

- Open lower limb fractures at high risk of microbial contamination
- Rates of infection high – **27%** (Pollack, 2010)
- Usual management: early lavage, surgical debridement, fracture stabilisation +/- bone grafting, wound coverage
- Antibiotic prophylaxis



Negative Pressure Wound Therapy

- NPWT removes wound exudate by active suction
- Changes the bacterial environment, increases oxygenation
- Little evidence for open fractures (Stannard 2009)
- Consensus document (2011) concluded that the evidence base was limited
- Increased use in NHS



Aim of trial

To compare the **effectiveness** and **cost-effectiveness** of NPWT with standard postoperative wound dressings in treatment of wounds associated with **open fractures** of lower limb



Negative Pressure Wound Therapy



versus



Standard Care

Overview



Study Design

Multi-centre, randomised controlled trial (RCT)

Setting

18 Trauma Centres, UK

Sample size

460 patients

Interventions

Standard care vs. Negative Pressure Wound Therapy

Outcomes

Disability Rating Index, SSI, reoperation, QoL, costs



Participants

Inclusion criteria

- Aged 16 years or older
- Present within 72 hours of injury
- Open fracture of the lower limb: Gustilo & Anderson 2, 3 or 3+

Exclusion criteria

- Cannot undergo general anaesthesia /surgery
- Unable to adhere to trial procedures or complete questionnaires



Outcomes

Primary outcome

- Disability Rating Index (DRI)* at 12 months
- VAS, gross movement scale, suitable for different #'s
- Scale: **no difficulty** _____ **great difficulty**

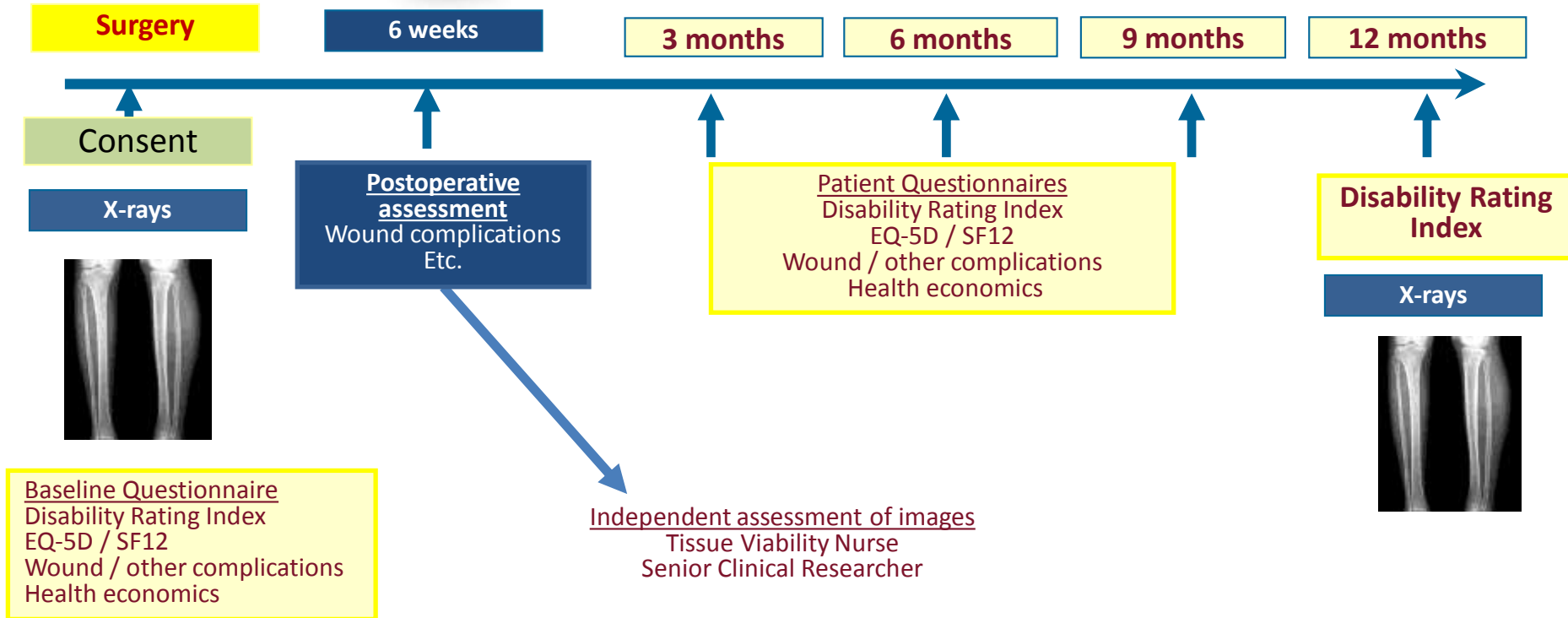
e.g. walking, climbing stairs, running etc.

Secondary outcomes

- Surgical site infection @6 weeks, 12 months (Deep SSI)
- Wound healing
- Quality of life – SF-12 & EQ-5D
- Resource use

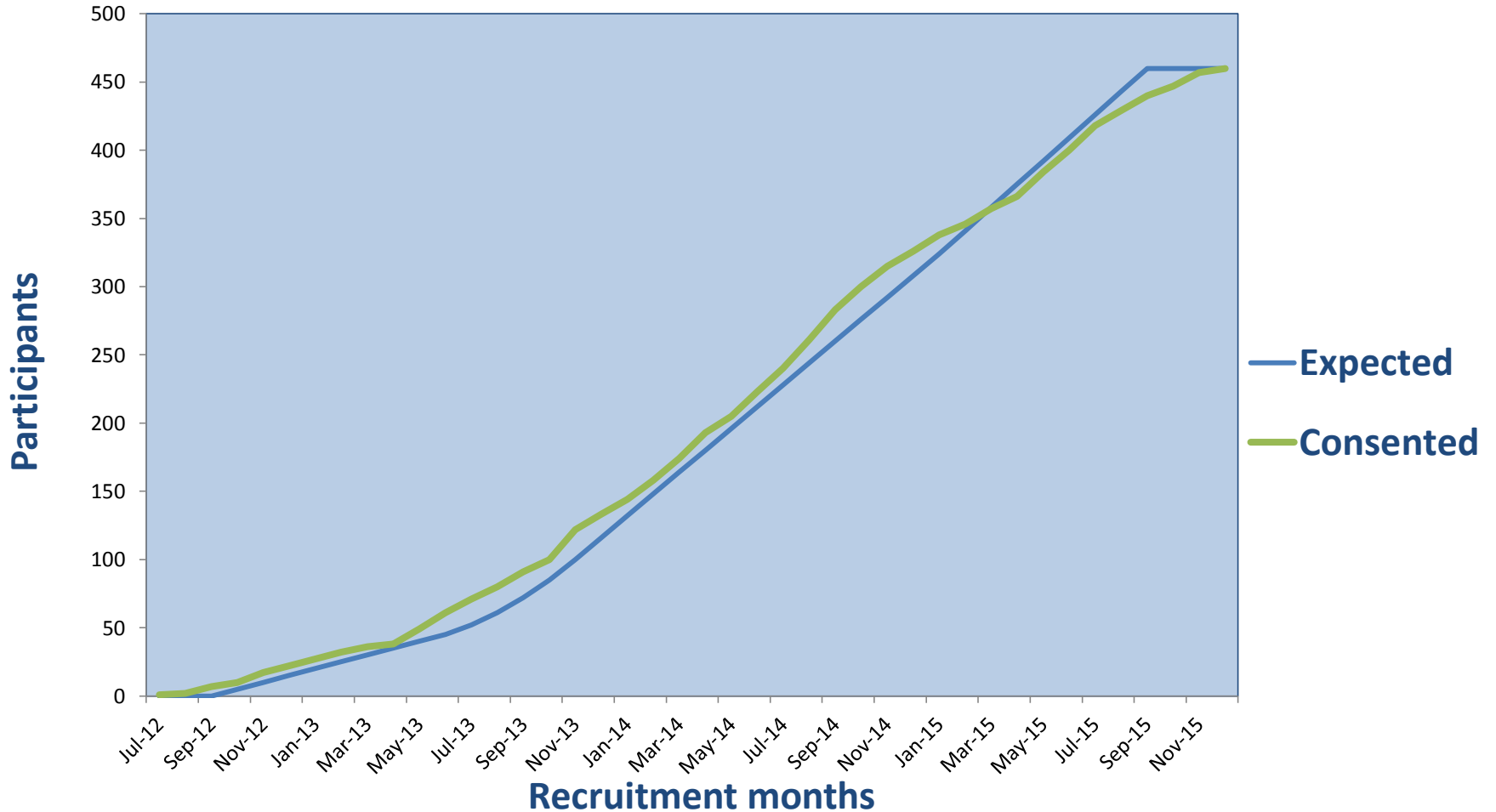
*Salen et al, *J Clin Epidemiol*, 1994

WOLLF Data Collection



Status

Recruitment closed 10th Dec 2015, **n=460**



Example images

6 weeks postoperatively – photos by RAs

Images removed

Challenges

Data collection

- Good relationships with patients, long hospitalisations
- Patients traumatised
- All consented for images – patient involvement!
- Challenging to use scale if external fixator
- Overall adhered to protocol

Data management

- Range 1 - 10 images x 460 patients
- Good visual indicator
- Used to supplement decisions re wound infection

Follow-up ongoing.....



University Hospitals **NHS**
Coventry and Warwickshire
NHS Trust

Warwick
Medical School
CLINICAL TRIALS UNIT



Thanks to:

Amy Verdon, Tissue Viability Specialist,
University Hospitals Coventry & Warwickshire

WOLFF
Wound Management of Open Lower Limb Fractures

WARWICK

- Upper & lower limb trauma
- Closed surgical incisions, **N=2000**

WE NEED: Major Trauma Centres
Independent Assessment Panel

WHIST@ndorms.ox.ac.uk

OR

julie.bruce@warwick.ac.uk

