

The effect of different methods of stability assessment on fixation rate and complications in supination external rotation (SER) 2/4 ankle fractures.



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Disclosures

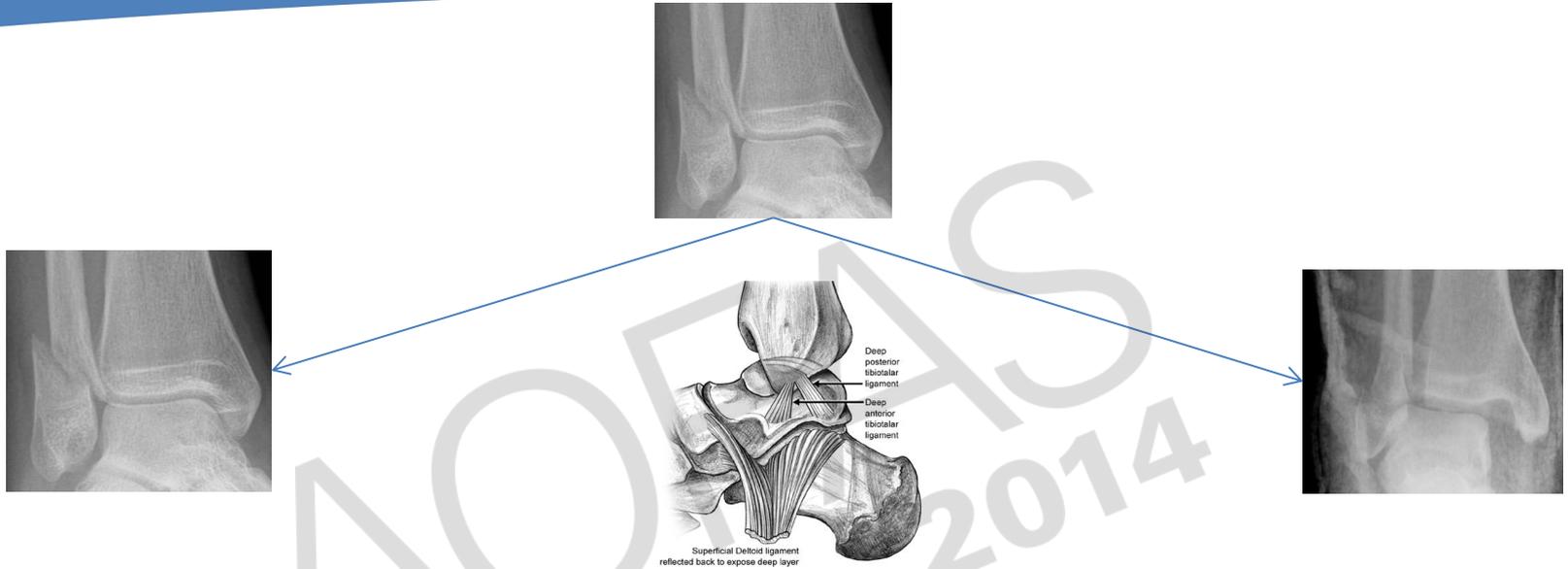


The effect of different methods of stability assessment on fixation rate and complications in supination external rotation (SER) 2/4 ankle fractures.

E.J.C. Dawe, R. Shafafy, J. Quayle, N. Gougoulas, A. Wee, A. Sakellariou.

My disclosure is in the final AOFAS Mobile App.
I have no potential conflicts with this presentation.

Stability in SER 2/4 fractures



- The ankle is stable when the deep deltoid ligament is intact (Richter *et al*)
- Stable fractures will reduce on weightbearing and may be treated non-operatively (Tochigi *et al*)
- Unstable fractures are usually treated operatively whilst stable fractures are not.
- Medial tenderness is a poor predictor of stability (De-angelis *et al*)

Assessing stability

Three different methods used over 5 years

1. Non-weight bearing repeat radiographs - Examination Under Anaesthesia for patients with medial tenderness



2. Gravity stress views



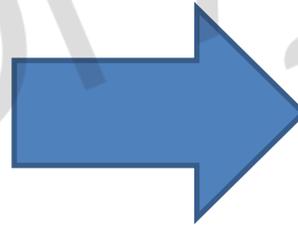
3. Weight bearing radiographs (taken 5-7 days after injury)



Aims

To compare 3 different assessment protocols.

- Medial tenderness assessment (Plain or EUA)
- Gravity Stress view (Gravity Stress)
- Weight bearing stress view (WB)



- % Treated operatively
- % Further surgery
- % Complications

Patients and Methods



- 1500 patients with ankle fractures treated over five years.
- Radiographic review of initial radiographs (ED, RS, JQ) to identify SER 2/4 injuries.
- Review of clinic letters, discharge summaries and theatre records.
- Stress view protocol at preference of weekly Trauma Surgeon
- Validation of questions required to determine the need for a stress view and recognise the SER2/4 injury was carried out by 3 authors over 100 ankle injuries on two separate occasions.

Results

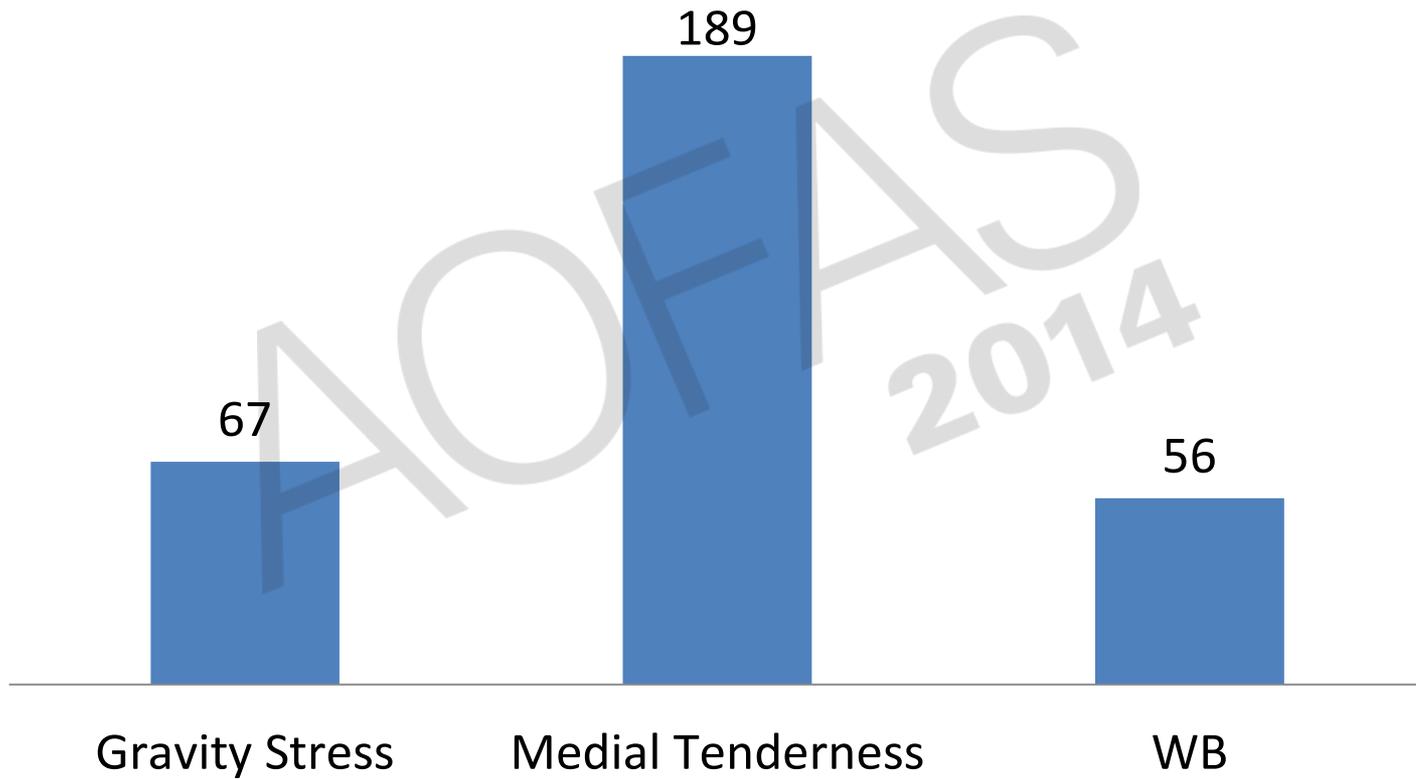
Study sample

- 310 SER 2/4 fractures
- Mean follow-up 2 years 6 months (Min 1 year)
- Mean age 52 years (SD 18 years)
- Male : Female 1:1

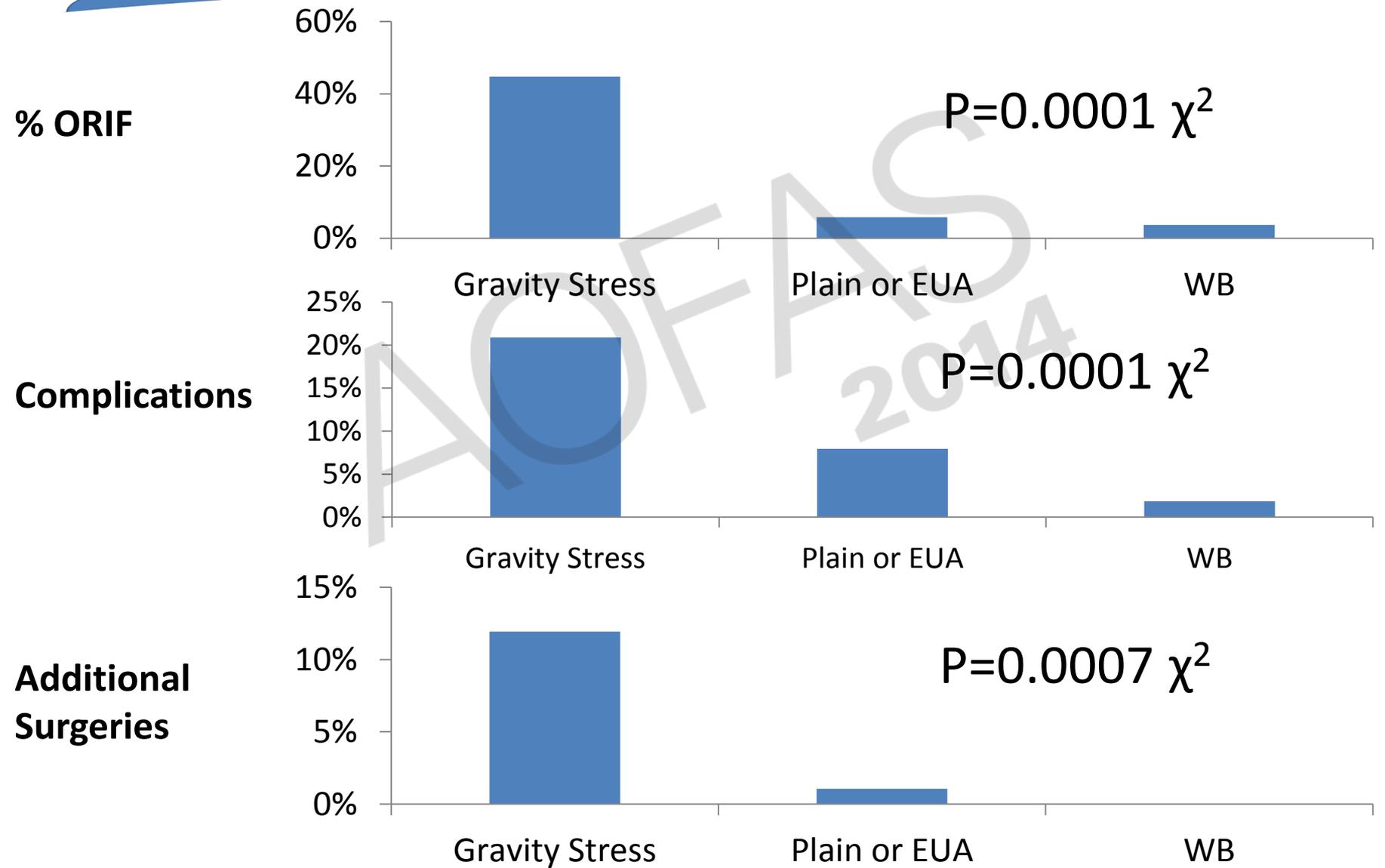
Validation Results

- Is this a Weber B fracture?
Inter-observer $\kappa = 0.90$
Intra-observer $\kappa = 0.97$
- Is there talar shift?
Inter-observer $\kappa = 0.93$
Intra-observer $\kappa = 0.97$
- Are stress radiographs required?
Inter-observer $\kappa = 0.83$
Intra-observer $\kappa = 0.95$

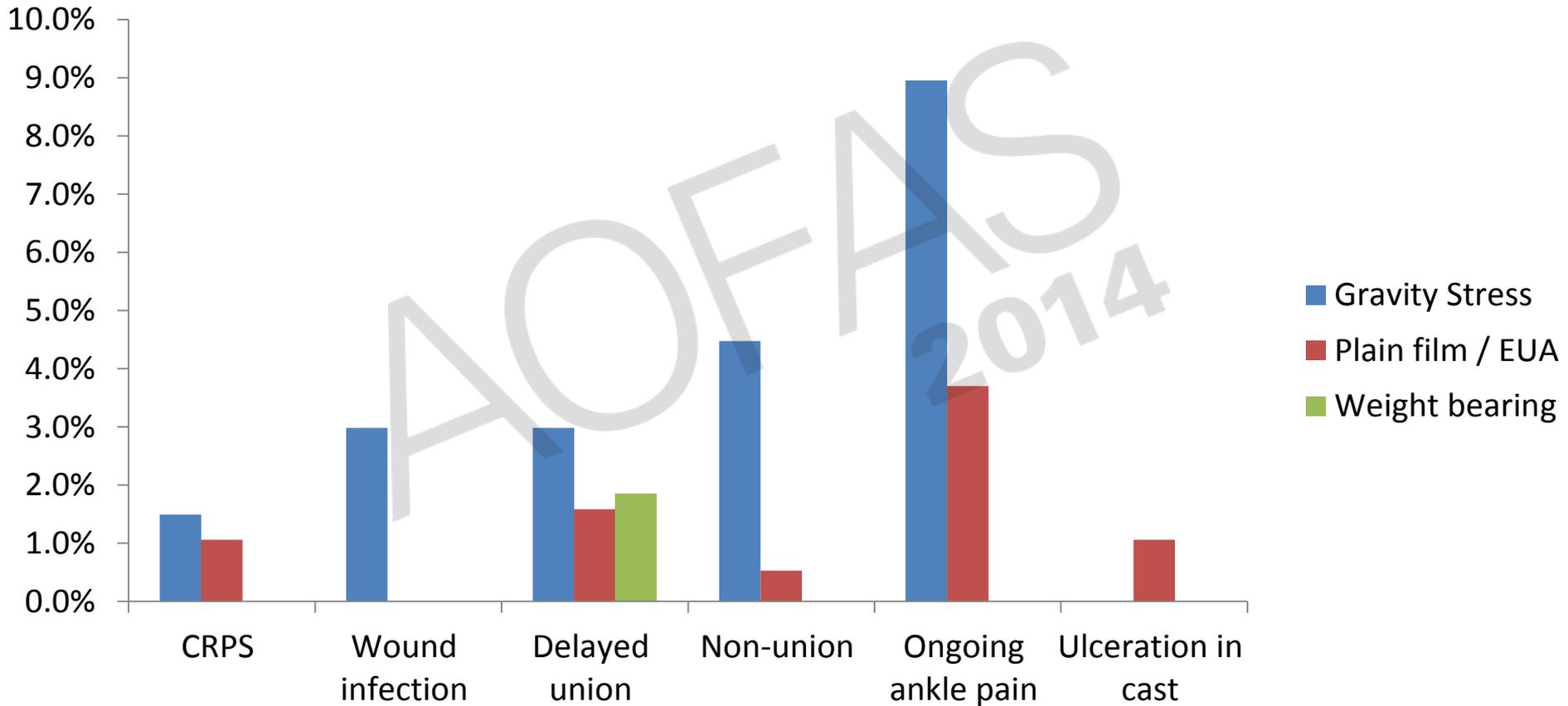
Patient group size



Results - complications



Complications



Conclusions



- This study finds a high rate of surgery, complications and additional surgeries were found in patients assessed using gravity stress views.
- Gravity stress views may overestimate instability as eversion stress does not necessarily reproduce the joint stabilising action of the deep deltoid on axial loading (Tochigi *et al*)
- The short follow-up of this study (Minimum 1 year) does not allow us to determine whether choice of stability assessment affects longer term outcomes such as the development of arthritis.
- We recommend weight bearing radiographs for assessing stability in this type of injury.

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