A comparison of bolus versus infusion administration of ceftriaxone in patients under OPAT

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Background

- Ceftriaxone is commonly used in the treatment of orthopaedic infections
- Many centres in the UK give ceftriaxone as an infusion over 1 hour
- Infusion is thought to be associated with less ADRs than bolus
- At Addenbrooke's Hospital, patients under OPAT may receive ceftriaxone as an infusion (nurse-administration) or as a bolus (self-administration)

Teaching self-administration

1. Ward nurse shows the patient (or a relative) how to safely self-administrate antibiotics into their line

2. 3 doses under supervision

3. Final assessment is done by an OPAT specialist nurse

Cambridge Independent

Cambridge University Hospitals saves £300,000 with DIY intravenous administration videos

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Objective

Our objective was to determine whether there was a difference in patient outcome or reported frequency of ADRs between patients receiving ceftriaxone as a bolus versus an infusion

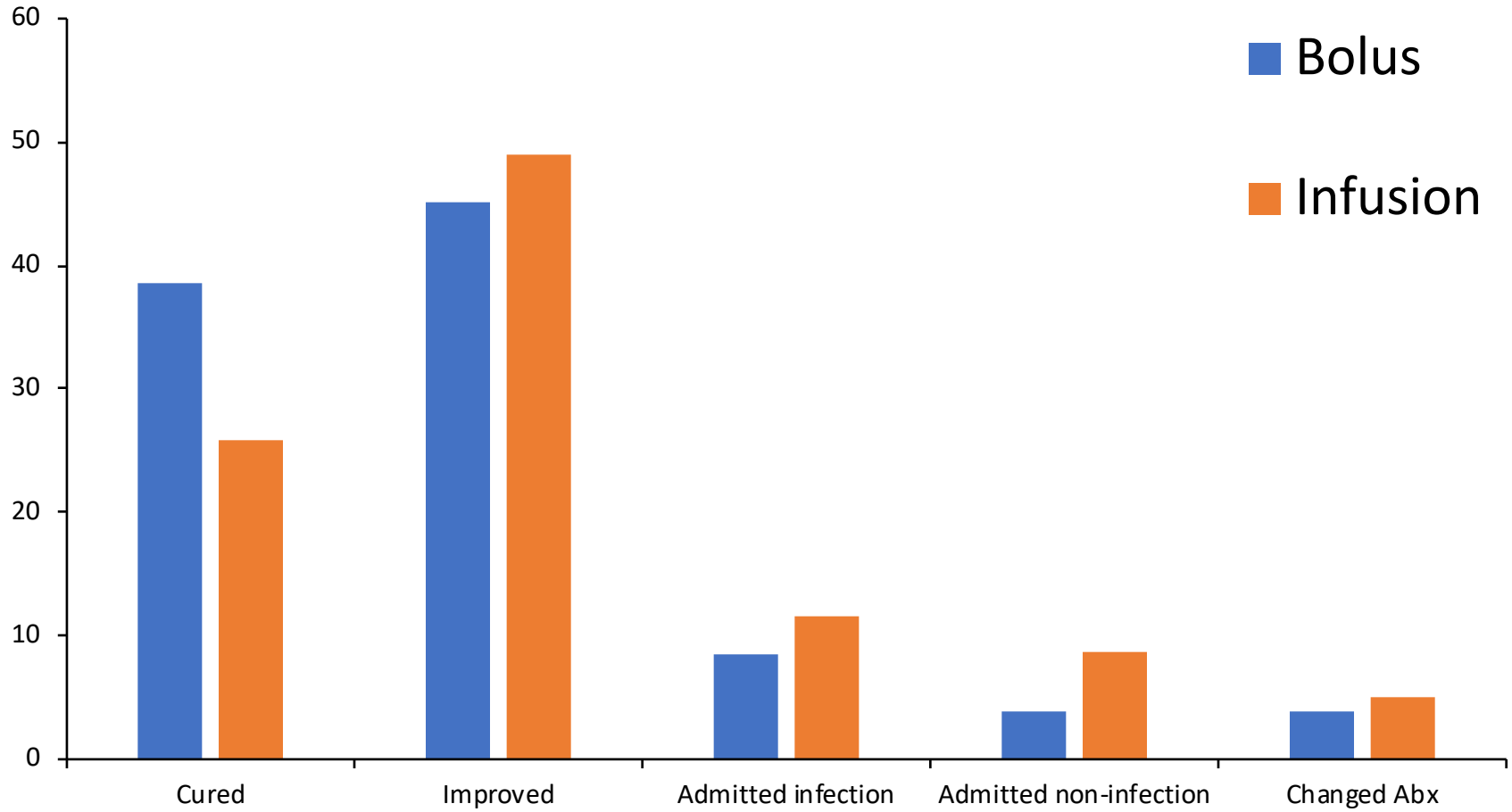
Why does it matter?

- Bolus is more convenient for patients
- Patients could be discharged faster
- Saves the trust lots of money

Design

- Retrospective study of 292 patients receiving ceftriaxone for orthopaedic infections between 27/9/10 and 1/2/18
- 153 patients had bolus (52.4%) and 139 infusion (47.6%)
- Patient outcomes: cured *(no follow-on oral antibiotics)*, improved *(follow-on oral antibiotics)*, admitted due to infection, admitted not for infection, changed antibiotics

% patient outcomes in bolus versus infusion patients



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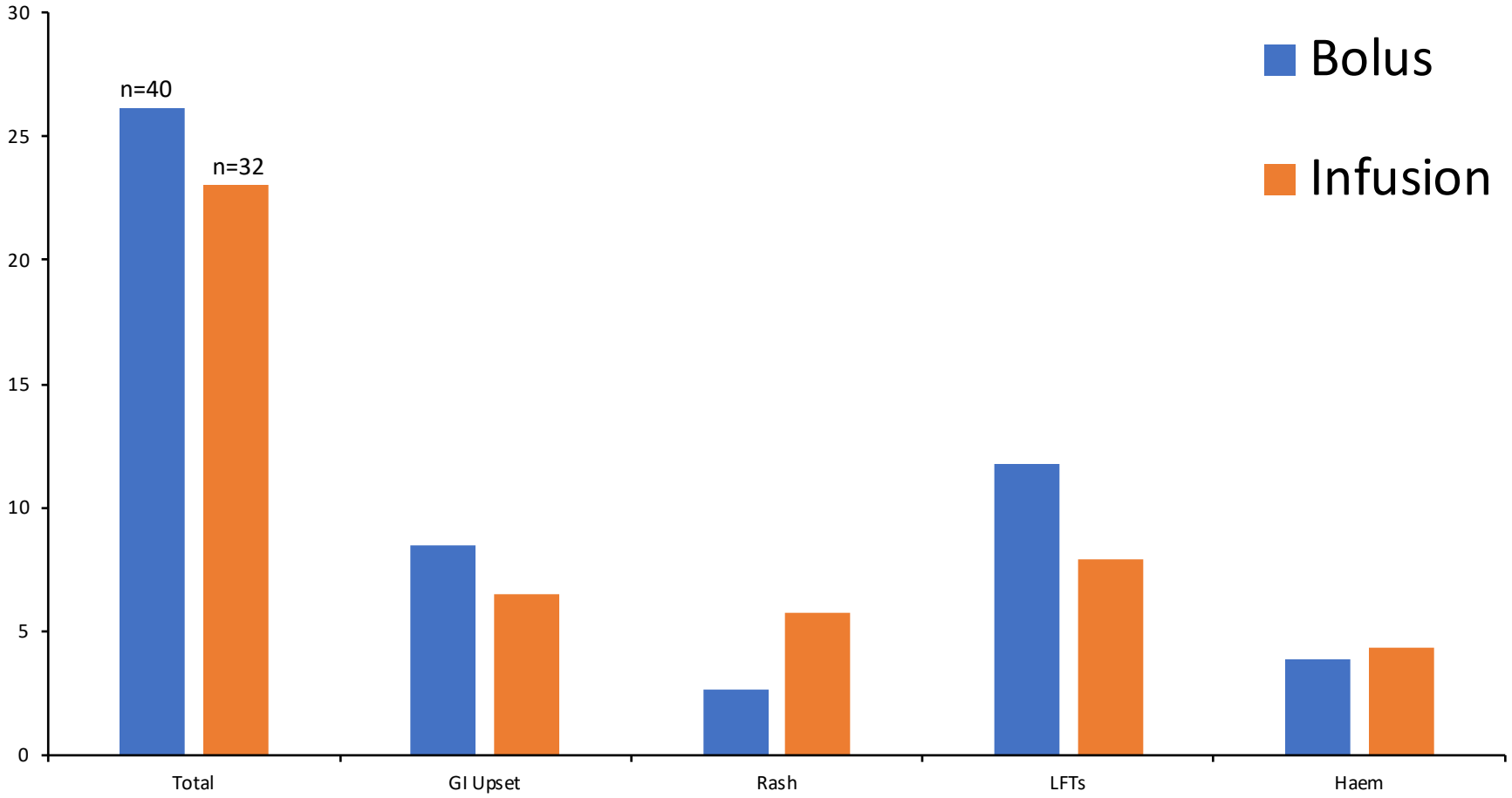
% recorded ADRs in bolus versus infusion patients



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Results

- No significant difference in patient outcome between bolus (39% cured, 45% improved) and infusion (26% cured, 49% improved) (p=0.120)
- No significant difference in the proportion of patients that experienced an ADR during treatment between bolus (26%) and infusion (23%) (p=0.536)
- No significant difference in the types of ADR experienced (p=0.353)
    - Rash
    - GI upset
    - LFT abnormalities
    - Haematological toxicity

Conclusions

- Ceftriaxone can be safely and effectively given as a bolus
- Giving ceftriaxone as a bolus does not adversely affect patient outcome or increase the likelihood of an ADR compared to infusion
- This is true even with long courses of the drug as seen here

More centres could teach self-administration of ceftriaxone as a bolus

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