

# DURATION OF ANTIMICROBIAL THERAPY FOR BLOODSTREAM INFECTIONS IN CRITICALLY ILL PATIENTS IN THE UNITED KINGDOM

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## Introduction

The optimum duration of antibiotic therapy for bacteraemia is unknown. Only one trial, in neonates, has compared shorter versus longer therapy<sup>1</sup>. A recent report of Canadian practice demonstrated that the median duration of appropriate treatment was 14 days (interquartile range 9-17.5) among patients with a predicted mortality of 46% (actual 27%)<sup>2</sup>. In contrast, UK data from a single centre, demonstrated shorter courses of antibiotics – a median of 5 days<sup>3</sup>.

We aimed to determine the duration of antibiotic therapy in two general UK ICUs.

## Methods

- Salford data: retrospective analysis of previous prospective data
- Sunderland data: retrospective data from electronic and paper records
  - Using BALANCE study case report forms<sup>4</sup>
- Inclusion: Critical care & positive blood culture
- Exclusion: Probable contaminant (coag neg *Staphylococci*, *Bacillus* spp., *Corynebacterium* spp., *Propionibacterium* spp., *Aerococcus* spp., *Micrococcus* spp.) and infection with established need for prolonged treatment (Infective endocarditis, osteomyelitis, septic arthritis, undrainable abscess, unremovable prosthetic material)
- Adequate antibiotic therapy: least one antibiotic with activity against all pathogens cultured.

## Results

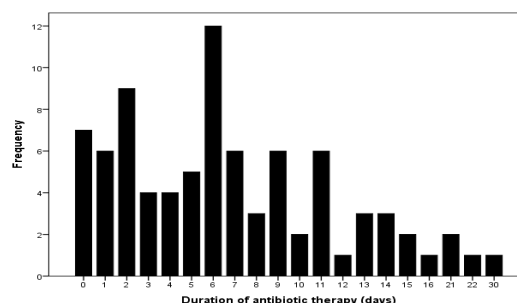
### Characteristics

37 Sunderland (Dec 2011-Oct 2014), 47 Salford (Aug 2010-Jan 2013)

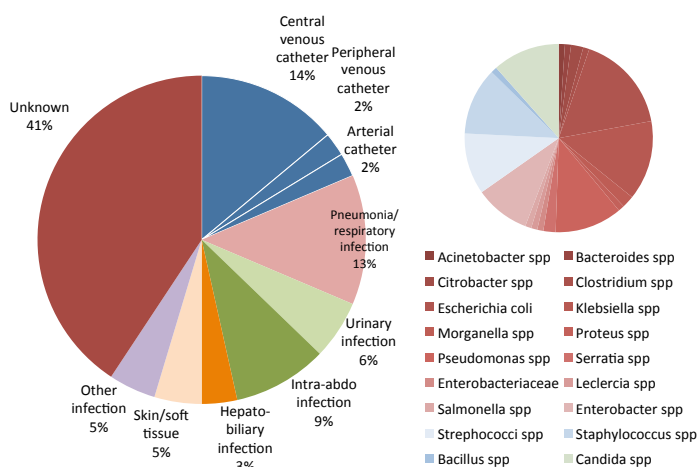
Age mean (SD)	58.4 (15.3)
Male n (%)	44 (52.4)
Admission category n (%)	Medical 55 (65.5); Surgical 21 (25); Neuro 8 (9.5)
APACHE 2 mean (SD) (Sunderland only)	28.4 (8.0)
Any cancer n (%)	31 (36.9)
Immunosuppression n (%)	28 (33.3)
Polymicrobial n (%)	14 (16.7)
Antibiotics at time of bacteraemia n (%)	38 (45.2)
Hospital LOS Median (IQR)	28 (15.2-48.3)
ICU LOS Median (IQR)	17 (8.3-27.8)
ICU death n (%)	32 (38.1)
Hospital death n (%)	35 (41.7)

### Duration of adequate therapy: Median (IQR)

Duration adequate therapy	6 days (2-10)
Excluding deaths within 10 days while on or before antibiotics	7 days (5-11)
Salford	7 days (4.5-9.5)
Sunderland	5 days (1-10)
Breakthrough bacteraemia	2 patients (2.4%)



### Source and Microbiology



### Less than 7 days Vs greater than 7 days therapy

Characteristic	≤ 7 days (n=33)	>7 days (n=31)
Age mean (SD)	59 (14.7)	57 (16.7)
Male n (%)	24 (45.3)	20 (64.5)
Admission cat n (%)	Med 21 (63.6); Surg 8 (24.2); Neuro 4 (12.1)	Med 21 (67.7); Surg 7 (22.6); Neuro 3 (9.7)
APACHE 2 mean (SD)	26.6 (6.2)	26.0 (10.1)
ICU mortality n (%)	10 (30.3)	4 (12.9)
Hospital mortality n (%)	12 (36.4)	5 (16.1)
Hospital LOS Median (IQR)	30.0 (18-50)	30.0 (25-50)
ICU LOS Median (IQR)	21 (11-31)	20 (10.5-29)
Solid cancer n (%)	1 (3.0)	1 (3.2)
Leukaemia n (%)	15 (45.5)	8 (25.8)
Neutropenia n (%)	10 (30.3)	5 (16.1)
Chemotherapy n (%)	14 (42.2)	8 (25.8)

## Discussion

There is practice variability in treatment in the UK and in comparison to other countries, among patients with high overall mortality but low rates of breakthrough bacteraemia. This variability highlights the need for a trial to determine optimal duration of therapy for bacteraemia in critically ill patients.

## References

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### Disclaimer

This abstract has been presented at the Intensive Care Society State of the Art meeting, Dec 2015.