

The Challenges of Caring for People Who Inject Drugs – an opportunity for an Infectious Diseases Service

A Riddell, E McGuire & M S Habibi, Division of Infection, Barts Health NHS Trust, London, UK



Barts Health
NHS Trust

Introduction

- The Royal London Hospital is a tertiary public (NHS) hospital in East London, UK - an area with diverse ethnicity, high levels of poverty and homelessness.
- 10% of inpatients cared for by Infectious Diseases (ID) service were people who inject drugs (PWID).
- These patients were observed to have complex medical and social problems including homelessness, domestic violence and psychiatric illness.

Aim

- To evaluate the management and treatment outcomes of PWID inpatients managed by the ID team from April 2015 to June 2017 to identify how the management of these patients could be improved.

Methods

- Patients were identified via electronic patient records from April 2015 to June 2017.
- PWID patients not under the direct care of the Infectious Diseases team were excluded.
- Reason for admission, microbiological diagnosis, antibiotic management, blood borne virus status, central line access and other specialist input were all recorded from the patient records.

Diagnosis	Cases (%)
Bacteraemia (total)	16
<i>Methicillin-sensitive Staphylococcus aureus (MSSA)</i>	11
<i>Methicillin-resistant Staphylococcus aureus (MRSA)</i>	1
<i>MSSA + Streptococcus oralis</i>	1
<i>MRSA + Group G Streptococcus</i>	1
<i>Streptococcus mitis</i>	1
<i>Granulicatella adiacens + Actinomyces odontolyticus</i>	1
Associated complications	
1. Endovascular (total patients)*	8
Thrombophlebitis	7
Pulmonary emboli	4
Infective endocarditis	3
2. SSTI (groin abscess)	3
3. Osteomyelitis	4
Thoracic	1
Lumbar	2
Multi-level spinal (C3-S1)	1
4. Pneumonia	2
Non bacteraemia (total)	6
Suppurative thrombophlebitis with pulmonary emboli**	1
Groin abscess and cellulitis	1
Osteomyelitis (cervical spine)	1
Pulmonary tuberculosis***	3
Microscopy positive for acid fast bacilli	2
RHZE sensitive***	1
Isoniazid mono-resistance***	2

Table 1. Summary of blood culture results and clinical diagnoses for 22 PWID patients admitted under ID service
*some patients had multiple endovascular complications
**no blood culture on admission
***one patient with culture positive pulmonary TB also had osteomyelitis of hallux, another had groin abscess at initial presentation

Results

- 229 inpatients were cared for by the Infectious Diseases team; 22 (10%) of which were PWID.
- 13 (59%) patients were male, median age is 39.5 years (IQR 32.5-46).
- 6 (27%) were non-UK nationals.
- 10 (45%) presented with fever >38.5 °C.
- 17 (77%) had elevated white blood cell (WBC) count cases (77%)(normal range 4-10 x10⁹/L; median WBC 13.7 (IQR 10.2-19.3).
- C-reactive protein (CRP) was elevated in all patients (normal range 0-5mg/L); median CRP was 220.5 (IQR 91-273).

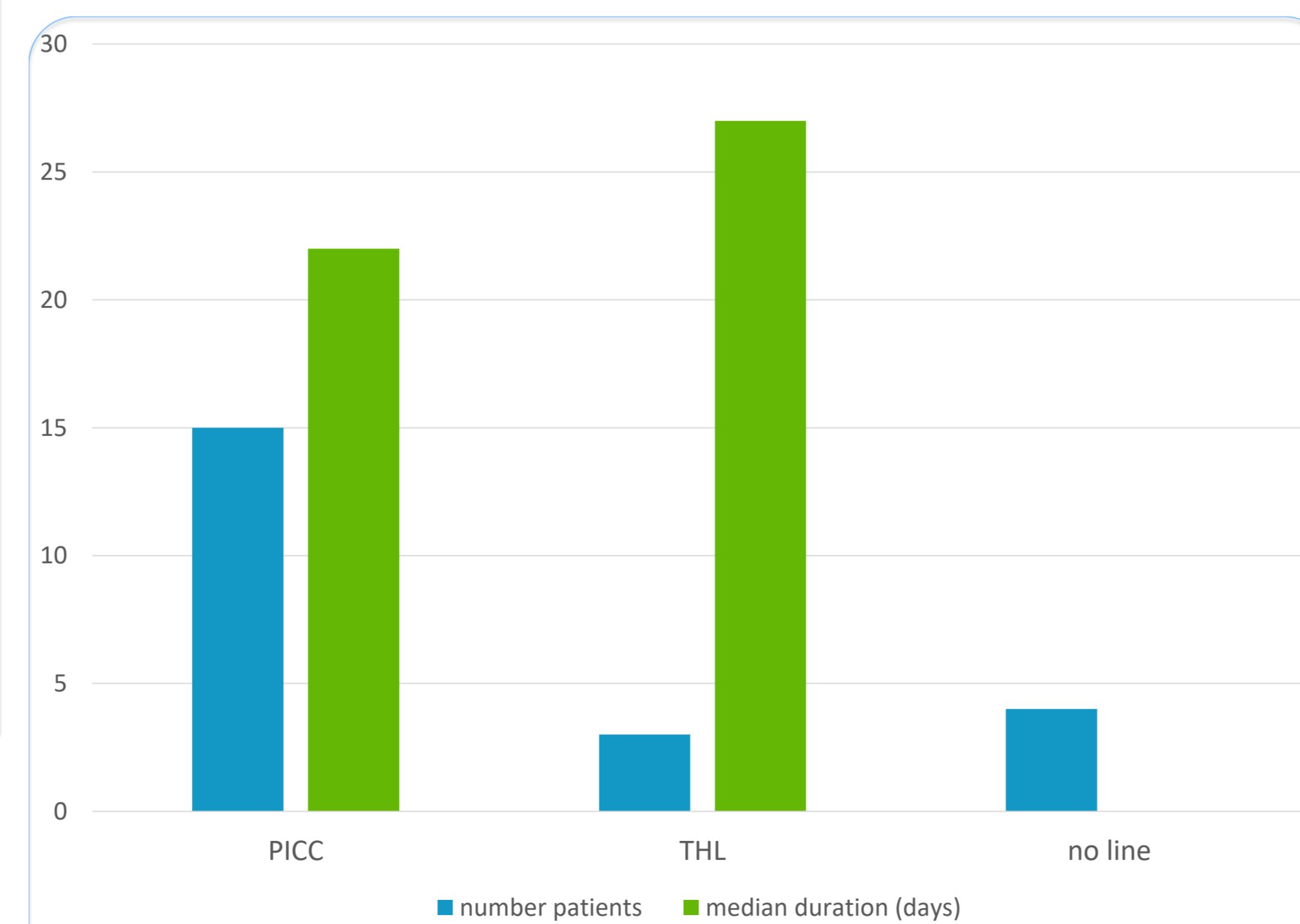


Figure 1. Type of vascular access device and median duration of time with central venous access

Management of Staphylococcus aureus bacteraemia (SAB) in 14 PWID patients

- 13/14 (93%) patients with SAB underwent trans-thoracic echocardiography (TTE), details in figure 2.
- 6/10 (55%) went on to have trans-oesophageal echocardiography (TOE).
- 5 (63%) were normal and one patient did not tolerate the procedure.
- Four major conditions were identified in patients with SAB, the antimicrobial management is detailed in table 2.
- 13 (93%) patients received flucloxacillin as the first line therapy.

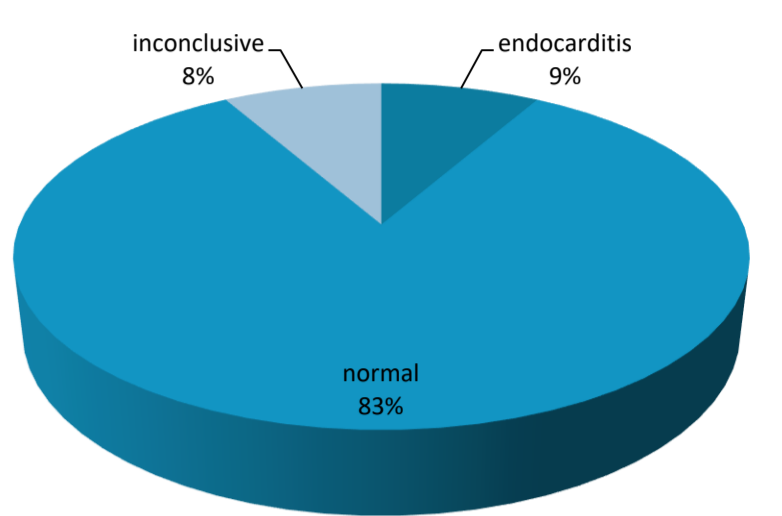


Figure 2. Findings on TTE in SAB

Diagnosis	Intravenous therapy (median antibiotic days)			Oral therapy (median antibiotic days)			Total median antibiotic days	Median length of hospital stay
	Flucloxacillin	Other	Total	Flucloxacillin	Other	Total		
Osteomyelitis	21	0	21	35	10.5	35	63	32
Thrombophlebitis	14	5	14	14	0	14	28	17
Pneumonia	7	5	12	NA	NA	NA	NA	28
Infective Endocarditis	42	14	42	2	0	2	44	52

Table 2. Summary of antimicrobial therapy for patients presenting with SAB. *NA = information not available from records

Co-morbidities in PWID patients

13 (60%) patients were homeless and 11 (50%) patients had evidence of psychiatric illness (see table 3).

Bipolar disorder	Major depression	Paranoid schizophrenia	PTSD	History of deliberate self-harm	Unspecified psychiatric disorder	Alcohol Abuse	Homeless
1 (5)	2 (9)	1 (5)	1 (5)	3 (14)	3 (14)	5 (23)	13 (60)

Table 3. Summary of psychiatric and social co-morbidities among PWID patients; n (%)

Screening for blood borne viruses was complete in all patients, with results reflecting the UK PWID population (see table 4). There was a low prevalence of HBV, no HIV and the majority had evidence of HCV IgG (82%); of which 13 (72%) had detectable HCV RNA. The distribution of genotypes (shown in fig 3) reflects the common genotypes seen within the UK.

	HIV Ab/Ag	HCV IgG	HBV surface antigen (sAg)	HBV core antibody (sAg negative)	anti-HBV surface antibody >10 (cAB negative)
Detected	0	18	1	5	8
Not detected	22	4	21	16	8

Table 4. HIV, hepatitis B virus (HBV) and hepatitis C virus (HCV) serology screening results for PWID patients

Follow up and admission outcomes

8 patients attended planned follow up, 3 patients left hospital during their admission against medical advice. There were no deaths recorded during admission or at 6 months.

Discussion

- The majority of patients admitted under our Infectious Diseases service were bacteraemic and had evidence of hepatitis C infection.
- Prolonged antimicrobial therapy was often necessary due to complicated infections, however other psychosocial issues associated with drug use influenced the length of stay.
- There were no adverse outcomes in our patient group.
- Our data supports the use of shorter courses of intravenous antibiotics in MSSA associated suppurative thrombophlebitis (similar to Mertz et al.[†]) and MSSA vertebral osteomyelitis followed by prolonged oral therapy of an appropriate anti-staphylococcal antibiotic.
- Harm reduction already takes place here: education regarding injection technique, appropriate choice of site and opportunistic HBV vaccination. There is an opportunity at the needle exchange for an Infectious Diseases service to manage some infections via outpatient antimicrobial therapy (OPAT) potentially tied to opioid substitution prescribing. This may help prevent prolonged admissions to acute hospitals and associated costs to the National Health Service.

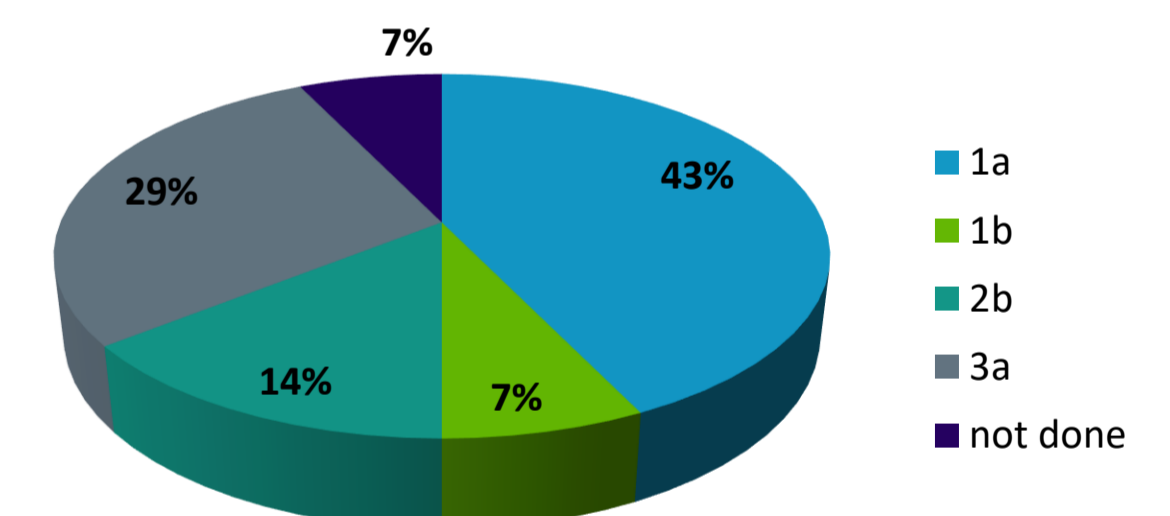


Figure 3. HCV genotypes of 13 PWID patients

[†]Mertz, D et al. Less than 28 days of intravenous antibiotic treatment for suppurative thrombophlebitis in injection drug users. CID 2008; 46:741-4