

Optimising Care for People Who Inject Drugs: A retrospective medical records review of *Staphylococcus aureus* bacteraemia treatment

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Introduction

- People who inject drugs (PWID) have been shown to be at increased risk of discharge against medical advice (DAMA)
- *Staphylococcus Aureus* bacteraemia (SAB) is a highly virulent infection, and injecting drug use places users at higher risk of SAB infection due to direct inoculation with skin flora
- International guidelines for treatment of SAB specify a minimum of 14 days IV antibiotics, with complex presentations requiring longer courses
- **Aim:** To establish rates of completion of at least two weeks of IV antibiotic therapy for PWID who have been diagnosed with SAB

Methods

- Retrospective medical record review of all patients admitted with a blood culture positive for *S. Aureus*, confirmed by query to the microbiology database between June 2015 and September 2018.
- Records were excluded if patients were admitted as an outpatient only, were admitted directly to the adjoining private hospital or were discharged directly from the E.D.
- Paper and electronic medical records, as well as medication charts were audited as part of this review.
- Data including demographic information, admission details, substance use history, infection characteristics, psychiatric and viral comorbidities and hospital discharge information was collected.

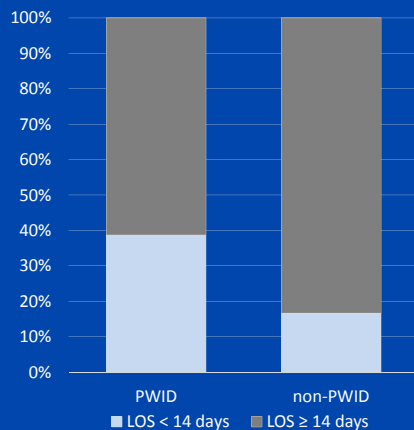
Statistical Analysis

- Categorical variables compared using Chi-squared (χ^2) and Fisher's exact tests.
- Continuous variables were analysed using paired and independent t-tests.

Key findings

- **PWID were more likely to discharge early or against medical advice** than their non-PWID counterparts:
 - 39% of PWID versus 17% of non-PWID had a length of stay (LOS) <14 days (odds ratio [OR] 3.2, 95% CI 1.1-9.4, p=0.034)
 - 41% of PWID discharged against medical advice (DAMA), versus 0% of non-PWID (p<0.001)
- A higher proportion of **PWID were readmitted to hospital within 28 days with positive *S. Aureus* cultures** (8% versus 0%, p=0.011), and of those PWID who DAMA 81% were readmitted within one year
- PWID were more likely to have concurrent:
 - Psychiatric comorbidities (51% versus 26%, OR 3.0, 95% CI 1.4-6.2, p=0.003)
 - Hepatitis C infection (49% versus 3%, OR 30.7, 95% CI 9.5-99.4, p>0.001)

Proportion of at risk of incomplete treatment



41% (n=16) of Current PWID Discharged Against Medical Advice (p<0.001). Current PWID accounted for all DAMA.



Increased psychiatric diagnoses (51%, n=20) and Hepatitis C (49%, n=19) amongst PWID (p<0.004)



PWID were more likely to be documented living in unstable housing (36% vs. 2%, OR 24.3, 95% CI 6.5-90.7, p<0.001)



For PWID, those who DAMA were significantly more likely to be tobacco smokers (81% vs 49%, p=0.035)

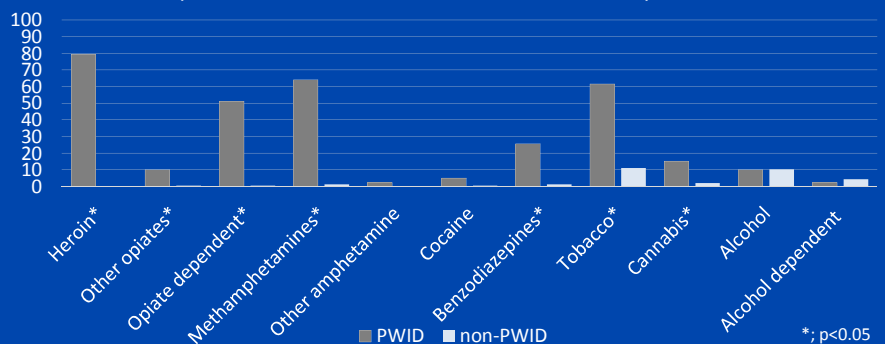


81% (n=13) of PWID who DAMA were readmitted within 1yr, twice the rate of their non-DAMA counterparts (p=0.009)

Results: Patient characteristics

Demographics	PWID	non-PWID	p-value
Total count, No.	39	133	-
Male, No. (%)	23 (59)	98 (74)	0.077
Age, mean (SD)	43 (8.2)	65 (18.9)	<0.001
Documented homeless, No. (%)	7 (18)	0 (0)	<0.001
Living in hostel/ boarding house, No. (%)	7 (18)	3 (2)	<0.001
Unstable housing, No. (%)	14 (36)	3 (2)	<0.001
Private health insurance, No. (%)	2 (5)	68 (51)	<0.001
Documented unemployed, No. (%)	28 (72)	22 (17)	<0.001
Australian born, No. (%)	35 (90)	89 (67)	0.005

Proportion of documented substance use and dependence



Acknowledgements

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Limitations & Conclusions

- Data cannot be generalized to other populations including non-injecting drug use
- Retrospective reviews cannot determine causality, further research is needed
- Inconsistent record keeping can reduce reliability of results
- PWID are significantly more likely to discharge prior to the recommended 14 days of IV antibiotics and DAMA, potentially leading to unfinished treatment and negative sequelae
- Addressing multiple intersecting social and health risk factors likely to be of benefit in supporting optimal treatment for SAB in this population