Outpatient Parenteral Antimicrobial Therapy in Injection Drug Users: Is It Safe?

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Abstract

Introduction:
Outpatient parental antimicrobial therapy (OPAT) is widely implemented in the US. However, there are concerns surrounding discharge of IDU with a peripherally inserted central catheter (PICC). The objective of this study is to evaluate the characteristics and treatment outcomes of IDUs discharged on OPAT.

Methods:
This is a retrospective observational study conducted on patients (pts) discharged from an Infectious Diseases Unit at a quaternary academic healthcare center in Detroit. Charts of all IDUs discharged on OPAT between 2011 and 2017 were reviewed. Current or former IDU were discharged on OPAT if they met the following criteria: self-reported history of IDU, stable living conditions, controlled psychiatric illness (if present) and willingness to sign a discharge agreement to refrain from using the PICC (peripherally inserted central catheter) as a route for illicit drugs. Pts were categorized based on clinic follow-up (f/u) vs no clinic f/u. Outcomes evaluated were: cured (completed treatment and symptom free for 1 month after completion), improved (symptoms were improved but there was no confirmation of treatment completion); and relapsed (readmitted within 30 days for the same infection or sequela). Outcomes of pts with no clinic f/u were based on chart review of subsequent emergency department visits or admissions.

Results:
Pt characteristics are shown in Table 1. Of the 61 pts evaluated, 33 (54.1%) attended clinic f/u and 28 (45.9%) did not. Outcomes based on clinic f/u are shown in Table 2. Of the 18 patients who were cured, 16 attended clinic f/u vs 2 who did not.

Conclusions:
This study demonstrates that some IDUs can be discharged safely on OPAT. Pts with clinic follow-up had improved outcomes compared to those who did not. Further studies are needed to look at other predictors of outcome in this patient population.

Background

- OPAT is a practical and cost-effective way of delivering antimicrobial therapy once a patient is discharged from the hospital (1,2). Approximately 1 out of 1000 Americans today receive OPAT annually (1).
- The use of OPAT in Injection Drug Users (IDU) is controversial and often avoided due to the risk of infection, thrombosis and continued drug abuse with a PICC line in place (2).
- There are no clear-cut guidelines concerning the use of OPAT in IDUs by national medical societies (2).
- There are no studies that compare OPAT to continuation of antibiotics while remaining inpatient in IDU patients.
- OPAT may be safe in IDU, with rates of mortality and catheter-related complications comparable to rates among patients without a history of IDU (3,4).

Objectives

The objective of this study is to evaluate the characteristics and treatment outcomes of IDUs discharged on OPAT in our healthcare center.

Methods

Study Design: A retrospective observational study

Data Collection: Individual patient information collected included age, gender, length of hospital stay, IDU status, psychiatric illness, discharge antibiotics, and disposition at discharge. This information was extracted through chart review of electronic medical records.

Methods (cont.)

Patient Identification: The period of study was from 2011 to 2017. Cases were patients admitted to a tertiary academic healthcare center in Detroit, MI. Current or former IDU were discharged on OPAT if they had a self-reported history of IDU, stable living conditions, controlled psychiatric illness (if present) and were willing to sign a discharge agreement to refrain from using a PICC as a route for illicit drugs. Patients were categorized based on clinic follow-up vs no clinic follow-up. Outcomes evaluated were cured (completed treatment and symptom free for 1 month after completion), improved (symptoms were improved but there was no confirmation of treatment completion and relapsed (readmitted within 30 days for the same infection or sequela). Outcomes of pts with no clinic f/u were based on chart review of subsequent emergency department visits or admissions.

Statistical Analysis: Chi-square and Fischer's exact tests were used to determine statistical significance. A P-value less than .05 was considered to be statistically significant.

Results

Table 1. Clinical Characteristics of Patients

Variables	N=61 (%)
Mean age (±SD)	46.2 (±12.4)
Male	33 (54.1)
Mean LOS (± SD)	15.3 (±10.9)
IDU status	
Active	49 (80.3)
Former	10 (16.4)
Unknown	2 (3.3)
Psychiatric illness	12 (19.7)
Infection Type	
Bone/Joint	32 (52.5)
Endocarditis	20 (33)
Other	9 (14.8)
Discharge Antibiotics	
Vancomycin	13 (21.3)
Penicillins	9 (14.8)
Combination	17 (27.9)
Others	22 (36.1)
Disposition at discharge	
Home	37 (60.6)
Nursing Facility	24 (39.3)

Results (cont.)

Table 2. Outcomes Based on Clinic Follow-up vs No Clinic Follow-up

Outcome	Clinic Follow-up n= 33 (%)	No Clinic Follow-up n=12 (%)	P-value
Cured	16 (48.5%)	2 (16.7%)	0.086
Improved	14 (42.4%)	6 (50%)	0.74
Relapsed	3 (9%)	4 (33.3%)	0.069

- 16 patients were excluded from the analysis because their outcome was unknown.

Conclusion

- Current or former IDU may be discharged safely and successfully on OPAT based on our findings.
- Patients who were monitored closely in the clinic had favorable outcomes compared to those who did not follow-up.
- Further studies are needed to identify other predictors of outcome in this patient population.
- There is an urgent need to establish national guidelines and protocols for effective management of these challenging patients in outpatient setting.

Limitations

- Retrospective study design
- Single study site
- Small sample size
- No comparison group

References

1. Huang V, Ruhe JJ, Lerner P, Fedorenko M.. (2018, August 6). Risk factors for readmission in patients discharged with outpatient parenteral antimicrobial therapy: a retrospective cohort study. BMC Pharmacol Toxicol. 2018 Aug 6;19.
2. Tice AD, Hoaglund PA, Nolet B, McKinnon PS, Mozaffari E. Cost perspectives for outpatient intravenous antimicrobial therapy. *Pharmacotherapy*. 2002;22(2, pt 2):63S-70S.
3. Tice AD, Rehm SJ, Dalovisio JR, et al. Practice guidelines for outpatient parenteral antimicrobial therapy, IDSA guidelines. *Clin Infect Dis*. 2004;38(12):1651-1672.
4. Vazirian M, Jerry JM, Shrestha NK, Gordon SM. (2018, March 3). Outcomes of outpatient parenteral antimicrobial therapy in patients with injection drug use. Psychosomatics. 2018 Mar
5. Ho J, Archuleta S, Sulaiman Z, Fisher D. Safe and successful treatment of intravenous drug users with a peripherally inserted central catheter in an outpatient parenteral antibiotic treatment services. *J Antimicrobial Chemotherapy*. 2010;65(12):2641-2644.