View metadata, citation and similar papers at core.ac.uk
brought to you by CORE
provided by DigitalCommons@University of Nebraska

University of Nebraska - Lincoln
DigitalCommons@University of Nebraska - Lincoln

Uniformed Services University of the Health Sciences
U.S. Department of Defense

2016

Reimagining Long-term Antibiotics in Persons Who Inject Drugs: Time to Shift the Status Quo?

Jesse Theisen-Toupal
Veterans Affairs Medical Center

Elana S. Rosenthal
DC Partnership for HIV/AIDS Progress

Christopher F. Rowley
Beth Israel Deaconess Medical Center

Follow this and additional works at: http://digitalcommons.unl.edu/usuhs

Theisen-Toupal, Jesse; Rosenthal, Elana S.; and Rowley, Christopher F., "Reimagining Long-term Antibiotics in Persons Who Inject Drugs: Time to Shift the Status Quo?" (2016). *Uniformed Services University of the Health Sciences*. 176.
http://digitalcommons.unl.edu/usuhs/176

This Article is brought to you for free and open access by the U.S. Department of Defense at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Uniformed Services University of the Health Sciences by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

Journal of HOSPITAL MEDICINE
www.journalofhospitalmedicine.com

EDITORIALS

Reimagining Long-term Antibiotics in Persons Who Inject Drugs: Time to Shift the Status Quo?

Jesse Theisen-Toupal, MD[1,2,3]*, Elana S. Rosenthal, MD[4], Christopher F. Rowley, MD, MPH[5,6,7]

[1]Medical Service, Veterans Affairs Medical Center, Washington, DC; [2]George Washington University School of Medicine and Health Sciences, Washington, DC; [3]Uniformed Services University of the Health Sciences, Bethesda, Maryland; [4]DC Partnership for HIV/AIDS Progress, Washington, DC; [5]Division of Infectious Diseases, Beth Israel Deaconess Medical Center, Boston, Massachusetts; [6]Harvard Medical School, Boston, Massachusetts; [7]Harvard T.H. Chan School of Public Health, Boston, Massachusetts.

In the United States, there are an estimated 744,000 individuals who have engaged in recent injection drug use (IDU) and 6.6 million individuals who have ever injected a drug.[1] The practice of IDU predisposes individuals to serious bacterial and fungal infections that often require long-term intravenous antibiotics. In individuals without IDU, these serious infections are often treated with outpatient parenteral antibiotic therapy (OPAT). However, a different standard exists for many persons who inject drugs (PWID)—the mandated completion of antibiotics in an inpatient setting.

Though mandating inpatient antibiotic therapy for PWID is a widely adopted standard, this practice is not evidence based and may increase overall costs to the healthcare system. In 2012, in a quality-improvement initiative, UKHealthCare established a protocol for treating appropriate PWID with OPAT.[2] They found very few inpatient providers willing to discharge PWID on OPAT, even with an established protocol.

To better understand the reasons for the low adoption of this protocol, Fanucchi and colleagues developed a survey designed to "assess attitudes, practices, and mediating factors impacting the decision making about discharging PWID on OPAT."[2] The results of this survey are reported in this issue of the *Journal of Hospital Medicine*.

The study found that 95% of inpatient providers use OPAT for patients without IDU, but only 29% would even consider OPAT in PWID. The most common barriers to discharging a patient with IDU on OPAT were socioeconomic factors, willingness of infectious diseases physicians to follow as an outpatient, and concerns for misuse of peripherally inserted central catheters and adherence with antibiotic treatment.

At first glance, these reservations seem very reasonable. The presence of socioeconomic factors such as homelessness or lack of infectious diseases specialist follow-up would make the risks of discharge on OPAT significant. The concerns for misuse of peripherally inserted central catheters and adherence to antibiotic treatment suggest that inpatient providers have an overall goal of reducing drug misuse and improving treatment outcomes.

Unfortunately, there are no data to suggest that completion of antibiotics in an inpatient setting reduces drug misuse or improves adherence to antibiotic treatments. Studies have found that at least 16% of PWID will misuse drugs during their hospitalization,[3] and 25% to 30% will be discharged against medical advice.[3,4] This may be in large part due to the fact that inpatient providers are historically poor at addressing substance use disorders, even in patients with serious infections associated with IDU.[5] Yet the provision of methadone during hospitalization has been associated with a significant reduction in discharges against medical advice.[4] Rather than focusing on placing restrictions on individuals with risky behaviors, patients may benefit more from minimizing these risks through prompt recognition and management of substance use disorder.

Although limited, there is also evidence to support the feasibility of safe and effective OPAT in some PWID. A study by Ho et al. used OPAT to treat 29 PWID hospitalized with serious infections.[6] The study population had adequate housing, a reliable guardian, and signed a contract agreeing to abstain from drug misuse. In addition, all patients received substance use counseling and novel tamper-proof security seals to prevent misuse of peripherally inserted central catheters, and antibiotics were delivered daily at an infusion center. They found no evidence of line tampering, excess readmissions, or excess line infections. Of note, the study population included 2 patients who were discharged against medical advice but successfully completed OPAT without issue. Although we do not believe that all individuals are appropriate for OPAT, this study suggests that OPAT can be considered in select PWID.

The study by Fanucchi et al. also reinforces the importance of making individualized risk assessments of persons with a history of IDU rather than assuming uniformity among the population. Of particular note

*Address for correspondence and reprint requests: Jesse Theisen-Toupal, MD, 50 Irving Street NW, Medical Service (111), Washington, DC 20422; Telephone: 651-249-7067; Fax: 202-745-8141; E-mail: Jesse.Theisen-Toupal2@va.gov

Received: February 18, 2016; Accepted: February 20, 2016
2016 Society of Hospital Medicine DOI 10.1002/jhm.2581
Published online in Wiley Online Library (Wileyonlinelibrary.com).

This document is a U.S. government work and is not subject to copyright in the United States.

is the lack of agreed-upon definition of "remote" history of IDU (range, 2–120 months; median, 12 months). The idea that individuals with a decade of sobriety could be subject to the same restrictions as a patient injecting multiple times a day speaks to providers' discomfort with assessing the individual risk of a person who has suffered from substance use disorder. Further, the fact that so few providers felt substance use disorder treatment was a critical component of a decision to allow OPAT raises concerns that providers are not aware of effective means to treat addiction. In particular, it is crucial for providers to understand that medication-assisted treatment, such as methadone or buprenorphine for opioid use disorder, has significant evidence to support efficacy in decreasing drug misuse and improving outcomes.

This study suggests more work will need to be done before inpatient providers will be comfortable discharging any PWID with OPAT. This includes improved outpatient services (enhanced case management and home health services, and better access to outpatient physicians including infectious diseases specialists), the development of tamper-evident devices to deter misuse of peripherally inserted central catheters, and defined legal protection for providers.

In addition, more research needs to be done on this population to objectively stratify risk for PWID and assess outcomes for PWID treated with OPAT versus the current standard of care. This research should have a particular focus on the long-term financial and societal costs associated with PWID leaving against medical advice or receiving potentially unnecessary inpatient services. Minimizing the length of stay may defray inpatient costs and afford investment into more robust, effective outpatient services. It is essential that we develop a system to provide antibiotics in a way that optimizes outcomes and is cost-effective.

Regardless of the decision to mandate antibiotic treatment in an inpatient setting or to discharge with OPAT, it is clear that more needs to be done to address addiction in hospitalized patients. All hospitalized PWID should receive safe injection education and a referral to a substance use disorder specialist. In addition, individuals with opioid-misuse or opioid use disorder should receive opioid overdose education and naloxone distribution. Hospitalizations serve as important opportunities to engage individuals in the treatment of their addiction. It is essential that hospitalists begin utilizing these opportunities.

Disclosures: Nothing to report.

References

1. Lansky A, Finlayson T, Johnson C, et al. Estimating the number of persons who inject drugs in the United States by meta-analysis to calculate national rates of HIV and hepatitis C virus infections. *PLoS One*. 2014;9:e97596.
2. Fanucchi L, Leedy N, Li J, Thornton A. Perceptions and practices of physicians regarding outpatient parenteral antibiotic therapy in persons who inject drugs. *J Hosp Med*. 2016;11(8):581–582.
3. Marks M, Pollock E, Armstrong M, et al. Needles and the damage done: reasons for admission and financial costs associated with injecting drug use in a Central London teaching hospital. *J Infect*. 2012;66: 95–102.
4. Chan ACH, Palepu A, Guh DP, et al. HIV-positive injection drug users who leave the hospital against medical advice: the mitigating role of methadone and social support. *J Acquir Immune Defic Syndr*. 2004; 35:56–59.
5. Rosenthal ES, Karchmer AW, Theisen-Toupal J, Castillo RA, Rowley CF. Suboptimal addiction interventions for patients hospitalized with injection drug use-associated infective endocarditis [published online November 18, 2015]. *Am J Med*. doi: 10.1016/j.amjmed.2015.09.024.
6. 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 service. *J Antimicrob Chemother*. 2010;65:2641–2644.