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Perceptions and Practices of Physicians Regarding Outpatient Parenteral Antibiotic Therapy in Persons Who Inject Drugs

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Injection drug use (IDU) is a major public health problem leading to increased morbidity, mortality, and healthcare expenditures.[1–3] Persons who inject drugs (PWID) are often hospitalized with severe infections, such as endocarditis,[4,5] which typically require prolonged courses of intravenous (IV) antibiotics. Outpatient parenteral antibiotic therapy (OPAT) via a peripherally inserted central catheter (PICC) is the standard of care for continuing IV medications once patients are medically stable and ready for discharge.[6] PWID have been excluded from OPAT studies,[6] leaving little evidence to guide care.[7] Furthermore, likely due to fears of ongoing IDU, PWID are often kept in the hospital for the full duration of their antibiotic courses. This practice is costly and may not be optimal, especially considering that hospitalized PWID have high rates of discharges against medical advice.[8,9]

In 2012, as part of a quality-improvement effort focused on hospitalized PWID requiring long courses of IV antibiotics, UKHealthCare in Lexington, Kentucky, established a protocol for OPAT in PWID meeting specific criteria. As this protocol was not widely adopted, we sought to formally assess attitudes, practices, and mediating factors impacting the decision making about discharging PWID on OPAT to inform future efforts. This study was approved by the University of Kentucky (UK) Institutional Review Board.

METHODS

A 14-item survey (see Supporting Information, Appendix, in the online version of this article) with multiple-choice and open-ended response items was developed based on the existing protocol, and themes were confirmed through semistructured interviews with 10 attending physicians in hospital medicine (HM) and infectious disease (ID). Questions were designed to elucidate the role that IDU played in the decision to discharge patients on OPAT, identify barriers to discharging PWID on OPAT, as well as elicit recommendations for requisite services or programs. The first question excluded providers not caring for patients requiring long-term IV antibiotics. Questions that allowed for open-ended responses were categorized thematically initially by 1 researcher (L.F.), then refined and confirmed by another team member (J.L.). The survey was distributed over email through Qualtrics (Provo, Utah) software to attending physicians in HM, ID, cardiology, and surgery at UK. Qualtrics software was used to generate descriptive statistics.

RESULTS

In January 2015, the survey was emailed to 66 physicians, and the response rate was 83%, with 91% reporting caring for patients requiring long-term IV antibiotics. Of those, 41 (82%) completed all items; 66% of completers were in HM, 12% ID, 10% surgery, and 2% cardiology. Sixty percent were male and in practice an average of 7.2 years. Thirty-nine (95%) use OPAT for patients without IDU, but only 12 (29%) would consider OPAT in PWID. If the patient has a "remote" history of IDU, then 33 (79%) would consider OPAT. There was no agreed-upon definition of "remote" history of IDU (range, 2–120 months; median, 12 months).

The most common physician-identified barriers to discharging PWID on OPAT, as well as recommendations for services or processes to be in place to allow PWID to be discharged with OPAT, are listed in Table 1.

DISCUSSION

This survey illustrates the extremely complex barriers present when treating hospitalized PWID requiring long courses of IV antibiotics, and supports the anecdotal evidence that physicians often keep PWID in the hospital for weeks to administer IV antibiotics. The majority of our sample of physicians believe that the largest barriers to OPAT in PWID are socioeconomic factors and the potential risk of the patient misusing the PICC line. Although the overall response rate of our physician survey was robust,[10] our results reflect the opinions of HM and ID physicians at a single site. The low response rate among cardiologists in particular

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TABLE 1. Barriers to Discharging PWID on OPAT and Recommendations for Services or Processes to Be in Place to Discharge PWID on OPAT

Identified Barriers to Discharging PWID on OPAT (41 Responses)	% (No.)
Socioeconomic factors (stable housing, transportation, living with responsible adult)	66 (27)
Potential risk of the patient misusing PICC line for IDU	66 (27)
Willingness of ID physician to follow the patient as an outpatient	59 (24)
Potential risk of not completing IV antibiotic therapy	49 (20)
Positive urine drug screen on admission	44 (18)
Patient willingness to sign behavioral contract*	39 (16)
Patient willingness to enter mental health or substance use disorder treatment	39 (16)
Lack of a tamper-evident mechanism that discourages misuse of the PICC line	27 (11)
Lack of data on outcomes for OPAT in PWID	24 (10)
Potential risk of being sued by a patient or family	20 (8)
Other†	‡
Recommendations for services or processes among providers who do not currently consider discharging PWID on OPAT (28 responses)§	
Outpatient or ID follow-up	32 (9)
Monitoring mechanism including random urine drug screens	‡
Substance use disorder and mental health services and treatment	‡
Home health services	‡
Institutional placement (eg, inpatient rehab, extended-care facility)	‡
More explicit legal protection	‡
Screening criteria to identify high risk for PICC line misuse	‡
Designated coordinator for this patient population	‡

NOTE: **Abbreviations:** ID, infectious diseases; IDU, injection drug use; IV, intravenous; OPAT, outpatient parenteral antibiotic therapy; PICC, peripherally inserted central catheter; PWID, persons who inject drugs. *The University of Kentucky developed a behavioral agreement to outline the risks of misusing a PICC line for PWID. †Free-text responses included variability in provider practices, lack of appointment availability, close nurse follow-up. §Responses are listed in decreasing order of frequency of citation ‡Fewer than 5 responses.

limits the generalizability of this survey. We suspect, however, that our results pertain to HM in other US hospitals, as nearly three-fourths of 37 HM physicians surveyed at the University of California, Irvine were "very concerned" about PWIDs potentially misusing the PICC line, and approximately half reported they "usually" or "always" kept PWID in the hospital for prolonged treatment due to concern of substance use (personal and email communication: Lloyd Rucker, MD, unpublished data, November 6, 2015).

We were surprised that fewer than half of respondents identified substance use disorder (SUD) treatment as essential to the OPAT decision. The reasons that may explain this observation are likely multifactorial, and may include gaps in knowledge about and resources to provide evidence-based addiction medicine. Further research is warranted to explore this observation, including the effect of enrollment into medication-assisted treatment programs (eg, methadone, buprenorphine).

This survey suggests that although there is variability, OPAT may be an option in PWID, if outpatient follow-up and ancillary services (ie, home health and possibly intensive case management) were well established. We believe the comorbid SUD must be also addressed. Based on the survey results and recommendations, we have begun relationships with community SUD treatment providers willing to monitor IV antibiotics with PICC lines, and dedicated additional case management staff to this population. We are evaluating these programs with the goal of contributing to an evidence base for this high-risk population.

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