

Comparing Injecting Drug Users with Others Receiving Outpatient Parenteral Antibiotic Therapy

TO THE EDITOR—We read with interest the article by Buehrle et al. outlining their experience with injecting drug users (IDUs) on an outpatient parenteral intravenous (IV) therapy (OPAT) program and believe that it adds much needed evidence to evaluate the place of OPAT for IDUs [1]. We question whether a number of the definitions of failure included in the study, eg, antibiotic noncompliance or missed doses, noncompliance with follow-up clinic appointments, are a true reflection of the success of OPAT.

Our service defines success as completion of an OPAT course with measurable signs of clearance of infection regardless of whether a patient has had an episode of noncompliance during the treatment course. It is worthwhile to note that noncompliance is not specific to IDUs on OPAT programs due to the freedom of movement and choice inherent in home treatment that is not available when confined to a hospital

bed. We have therefore compared outcomes of our cohort of both IDU and non-IDU OPAT patients, all of whom receive OPAT in the home environment. In our service, IDU OPAT patients have their antibiotics administered by visiting nurses so that their catheter can be monitored, whereas 50% of non-IDU OPAT patients are taught to self-administer. Since 1995, our service has managed 159 IDUs receiving OPAT for bone and joint infections (51.8%), endocarditis (21.6%), bacteremia (11.1%), abscess (including lung, liver, epidural abscess; 7.4%), skin and soft tissue infections (2.5%), and other infections (5.5%), eg, mycotic aneurysm, infected cranioplasty, empyema, neurosyphilis, pneumonia, infected pacemaker leads. In IDUs, the OPAT was administered through PICC lines in 88.6%, subclavian central venous catheters in 9.5%, or implantable port in 1.9%. IDU patients were more likely to be male, with a lower median age, and have a longer stay on OPAT than the non-IDU cohort (Table 1). Compared with non-IDUs, current IDUs (reported use in the last 3 months)

were 16.4 times more likely to be non-compliant during OPAT (95% confidence interval [CI], 6.2–43.4; $P \leq .001$), recent IDUs (reported use between 4 months and 2 years prior to OPAT) were 14.3 times more likely to be noncompliant (95% CI, 3.25–62.63; $P \leq .001$), and those reporting distant use (more than 2 years from the start of OPAT) were 7.7 times more likely to be noncompliant (95% CI, 2.3–25.55; $P \leq .001$). Despite the episodes of noncompliance on OPAT, IDUs were less likely to be discharged early from the OPAT program due to a complication, and only 1 IDU was readmitted to the hospital. Overall, 98% of IDUs completed their OPAT course. They were more likely to use the after-hours on-call nurse for a telephone consultation and significantly more likely to require an after-hours call out to troubleshoot a catheter complication. There was no statistical difference between IDUs and non-IDUs when comparing catheters removed for any complication ($P = .31$); however, current users had a hazard ratio of 2.4 for line failure (95% CI, 1.23–4.64; $P = .01$). In

Table 1. Comparison of IDUs and Non-IDUs Receiving OPAT

Measure	Non-IDUs	IDUs	<i>P</i>
OPAT admissions, No.	6493	159	
OPAT (median), d	134 909 (20)	3502 (23)	.013 ^a
Male, %	61	70	.015 ^a
Age (median), y	56.8	41.4	.009 ^a
Early discharge (complication), No. (%)	143 (2.2)	2 (1.3)	.032 ^a
Readmission, No. (%)	169 (2.6)	1 (0.6)	.08
After hours on-call nurse utilisation, No. (%)	1021 (15.8)	29 (18.3)	.22
After hours on-call nurse call out, No. (%)	240 (3.7)	14 (8.9)	.003 ^a
Noncompliant events, No. (%)	38 (0.61)	10 (6.4)	<.001 ^a
Catheter removal for any complication, rate per 1000 line days	3.4/1000 line days	4.8/1000 line days	.31
Catheter blockage, events (IR)	93 (0.69)	4 (1.1)	.42
Phlebitis, events (IR)	56 (0.42)	1 (0.29)	.76
Catheter damage/breakage, events (IR)	65 (0.48)	3 (0.85)	.36
Catheter-related thrombosis, events (IR)	33 (0.24)	0	.34
Accidental removal/dislodgment, events (IR)	23 (0.17)	3 (0.86)	.003 ^a
Definite line infection (LCBI), events (IR)	4 (0.029)	0	.72

Abbreviations: IDU, injecting drug user; IR, incidence rate; LCBI, Laboratory Confirmed Bloodstream Infection; OPAT, outpatient parenteral intravenous therapy.

^aSignificant result.

IDU OPAT patients, there was no incidence of catheter-related thrombosis or catheter-related bloodstream infection. IDUs had a higher incidence rate for catheter blockage and damage, and a significantly higher rate of accidental catheter removal/dislodged catheters.

To determine if patients have a sustained benefit from their OPAT treatment course, the infectious diseases physician chooses the long-term success criteria for each patient before they finish their IV therapy. The patient is contacted 6 months following discharge to ascertain if they have met their success criteria, eg, “no readmission for referred condition,” or “no clinical relapse,” or “functional joint” or “off antibiotics.” There was no statistical difference between IDUs and non-IDUs in long-term outcomes, with 80.5% of non-IDUs and 78% of IDUs having long-term success ($P = .6$).

Increasing numbers of IDUs require long-term IV antibiotics, generally as a

direct result of the medical consequences of injecting practices [2]. Strategies for safely managing IDUs should include OPAT in patients who have shown reasonable compliance with in-hospital care. In our service, appropriately selected IDUs can have comparative outcomes on home OPAT to non-IDU patients, and this is sustained in the long term. The risk of noncompliance on OPAT is much greater with IDUs, but it reduces with the passage of time since last reported injecting and, except for a small percentage, does not impact the IDUs who reach the planned end of OPAT.

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