

Little evidence of oral, same-day antibiotic prescribing at ambulatory surgery centers

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Background

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- Ambulatory surgery centers (ASC) are non-hospital facilities specializing in outpatient surgical procedures.¹
- Between 2000 and 2015, the number of ASCs grew by 81%.¹ Despite their growing role, little is known about oral antibiotic prescribing in ASCs.
- Pre- or peri-operative antibiotic prophylaxis is commonly recommended; however, post-surgical oral prophylaxis is not recommended for most procedures and may put patients at increased risk of avoidable adverse events.²

Study objective

The objective of our study was to describe oral antibiotic prescriptions associated with procedures in ASCs to evaluate if there are major national opportunities to improve antibiotic use in this setting.

Methods

- We identified surgical procedures in ASCs and dispensed oral antibiotic prescriptions in the IBM® MarketScan® Commercial 2018 database, a large convenience sample of privately-insured individuals <65 years.
- We excluded visits with same-day hospitalizations and those with infectious diagnoses potentially warranting antibiotic treatment.
- We included oral antibiotic prescriptions dispensed from community pharmacies on the same day as an ASC procedure.
- We excluded antibiotic prescriptions denoted as refills.
- Antibiotics administered at ASCs (peri-operative antibiotics) were not captured.
- We calculated the number of visits and oral antibiotic prescriptions, and the percent of visits with oral antibiotic prescriptions overall, and by patient age group, patient sex, region, and procedure type.
- Data analysis conducted using SAS version 9.4 (Cary, NC).

Results

Characteristics of ambulatory surgery center procedures

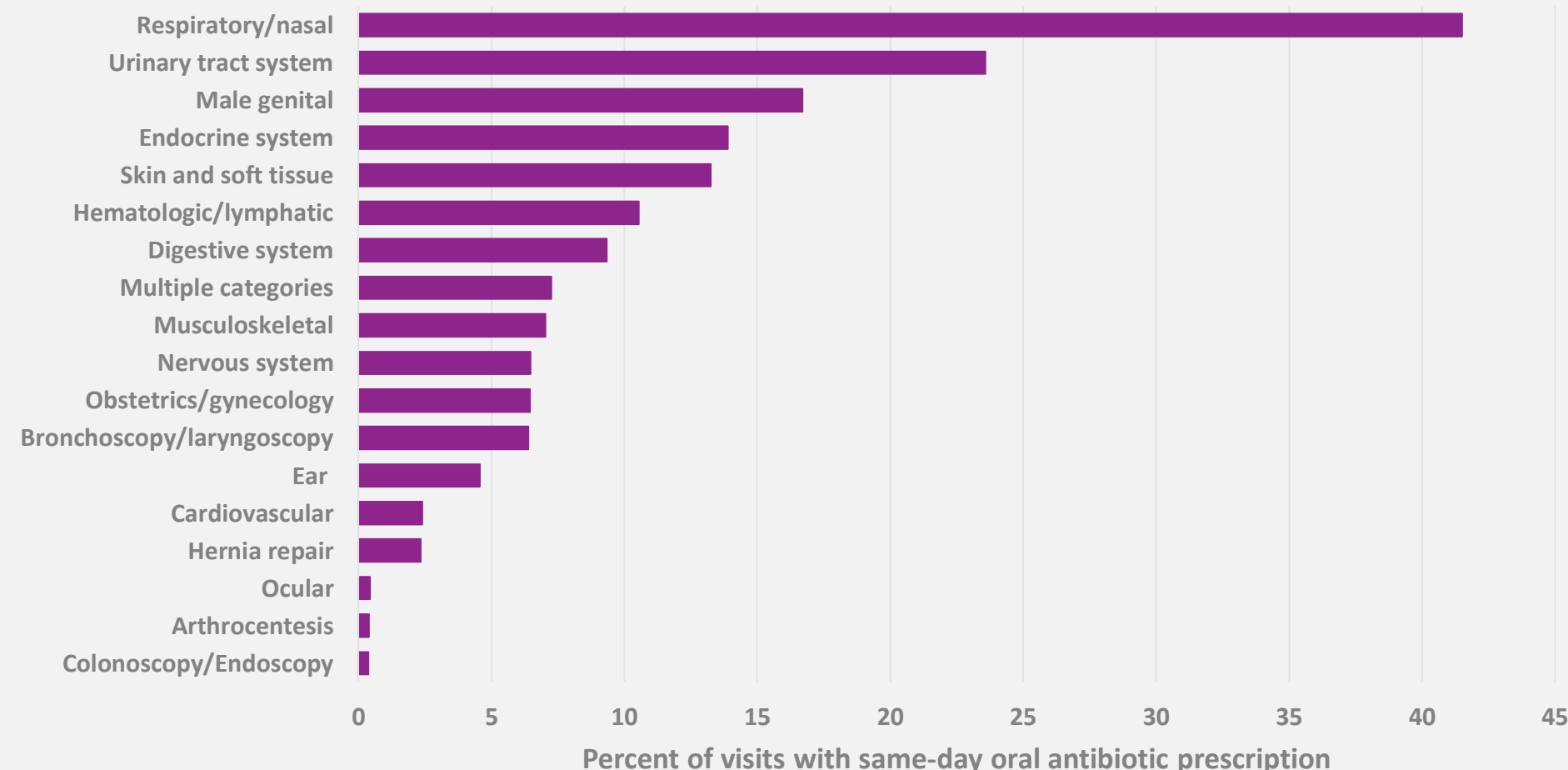
Characteristic	No. procedures (%) ^A	No. procedures w/ same-day oral antibiotics (%) ^A	% procedures w/ same-day oral antibiotics
Total	918,127 (100)	37,032 (100)	4.0
Sex			
Female	511,058 (56)	19,033 (51)	3.7
Male	407,069 (44)	17,999 (49)	4.4
Age group			
0-17 years	43,827 (5)	4,107 (11)	9.4
18-64 years	874,300 (95)	32,925 (89)	3.8
Region			
Northeast	151,486 (16)	4,869 (13)	3.2
Midwest	182,555 (20)	8,746 (24)	4.8
South	438,241 (48)	18,913 (51)	4.3
West	144,568 (16)	4,449 (12)	3.1

^A Numbers may not sum to total due to missing values

Antibiotic classes and course durations associated with ambulatory surgery center procedures

Antibiotic Class	Percent of prescriptions	Median duration, days (IQR)
Total	100	5 (3-7)
Cephalosporins	49.6	5 (3-7)
Penicillins	12.6	7 (7-10)
Quinolones	10.9	5 (3-7)
Sulfonamides	7.9	5 (3-7)
Tetracyclines	5.6	7 (5-7)
Macrolides	3.1	5 (5-5)
Urinary anti-infectives	1.9	5 (3-7)
Multiple classes	8.5	7 (4-10)

Percent of ambulatory surgery center visits with same-day antibiotic prescriptions by procedure category



Conclusions

Conclusions

- The percent of visits associated with a same-day oral antibiotic prescription was highest among nasal and respiratory tract procedures, followed by urinary tract system procedures.
- Cephalosporins accounted for almost half of all same-day oral antibiotic prescriptions
- The observed 5-day median duration may suggest that some of these courses are intended for treatment rather than prophylaxis.

4% of ASC procedures were associated with same-day oral antibiotic prescriptions, suggesting antibiotics are not commonly prescribed on the day of ASC procedures. ASC facilities may not be high-impact targets for national, public health antibiotic stewardship efforts.

Limitations

- Although we excluded visits with infectious diagnoses, we were not able to ascertain the indication (i.e., treatment or prophylaxis) for these prescriptions.
- Our estimates represent lower bounds for oral antibiotic prescriptions from ASCs, as we only captured same-day prescriptions.

References

1. MEDPAC (2017). Report to the Congress: Medicare Payment Policy. MEDPAC. Washington, DC, MEDPAC.
2. Bratzler, D. W., E. P. Dellinger, K. M. Olsen, T. M. Perl, P. G. Auwaerter, M. K. Bolon, D. N. Fish, L. M. Napolitano, R. G. Sawyer, D. Slain, J. P. Steinberg and R. A. Weinstein (2013). "Clinical practice guidelines for antimicrobial prophylaxis in surgery." *Am J Health Syst Pharm* **70**(3): 195-283.

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