



The global point prevalence survey of antimicrobial consumption and resistance in Canadian hospitals (2017)

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INTRODUCTION AND PURPOSE

The Global Point Prevalence Survey (PPS) is a well established worldwide initiative for monitoring antimicrobial usage and resistance in hospitals initiated in 2015. After a pilot study in two hospital systems in 2016 the survey was offered on a voluntary basis to all Canadian hospitals staffed with an Infectious Diseases/ Microbiologist specialist in Canada. Fourteen hospitals completed the survey across the country in 2017.

METHODS

The standard PPS questionnaire was completed on line by each site for all patients receiving antimicrobials on a selected day of their choice between February and November 2017. Detailed data collected included inpatient unit type, age, sex, antimicrobial (AB) prescribed, dose, route, indications, compliance with local guidelines, origin of infection and presence of targeted antimicrobial resistant organisms. A web based application was used for data entry validation and reporting (www.global-pps.com).

RESULTS

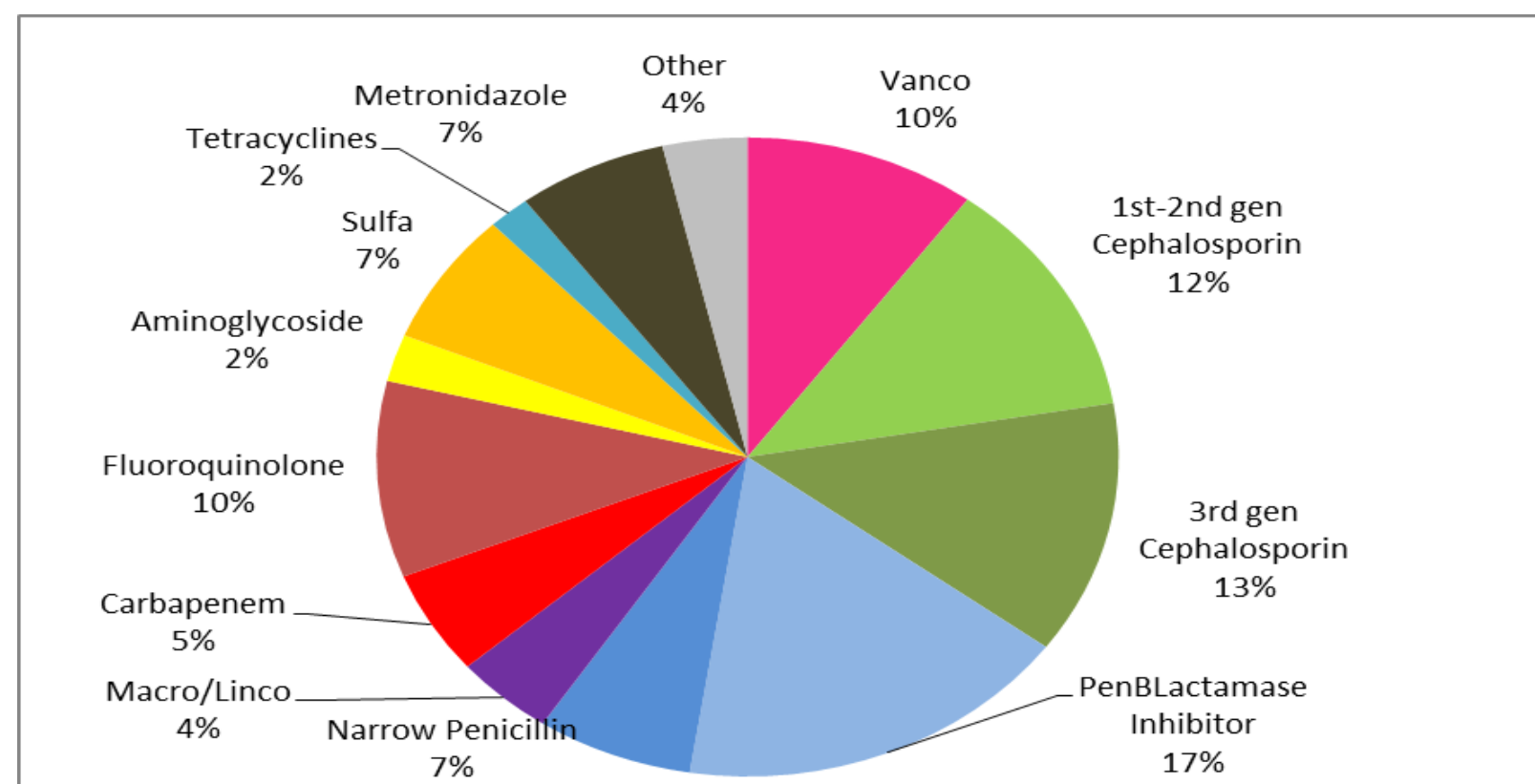
Hospital characteristics :

- 10/14 were teaching hospitals, 7/14 were tertiary/specialized hospitals
- 2/14 were paediatric centers.
- 4118 patients admitted on 237 units

Antimicrobial usage : 2041 AB given in 1400 patients

- 34.4 % of adults patients and 31.7% paediatrics were on AB (site ranges 18.6 - 46.2%)
- Usage by type of unit was lowest in neonatal ICU (18.6%) and highest in adult transplant wards (78%) and paediatrics hem-oncology wards (86.5%).
- Usage by departments was highest in ICU (45%) followed by surgical ward (38.5%), medical wards (30.7%) in adults.
- Of all antimicrobials used Community Acquired Infections (CAI) accounted for 40.6% and Health Care Associated Infections (HAI) for 34.6%; prophylaxis accounted for 24.8 %.
- Targeted therapy was present in 40.4 % and more frequent in HAI than CAI (47% vs 34.8%)

Figure1 : Relative frequency of Antibacterial classes (% , n=1762, excludes systemic antivirals, antifungals, exclusive anti TB and antiparasitics drugs)



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Top 5 AB were : piperacillin/tazobactam (12.4%), vancomycin (10%), ceftriaxone (9.2%), cefazolin(7.5%), ciprofloxacin (7.5%). Relative frequency amongst antibacterial classes is illustrated in Figure 1.

Antibiotic Stewardship

- Justification of AB present in 84 % (1720/2041)
- Local guidelines present in 79 % (1362/1720)
- Compliance with guidelines 82 % (1113/1362)
- Stop/review date present in 62 %
- Surgical prophylaxis given >24hours in 52 %, and single dose in only 11%.

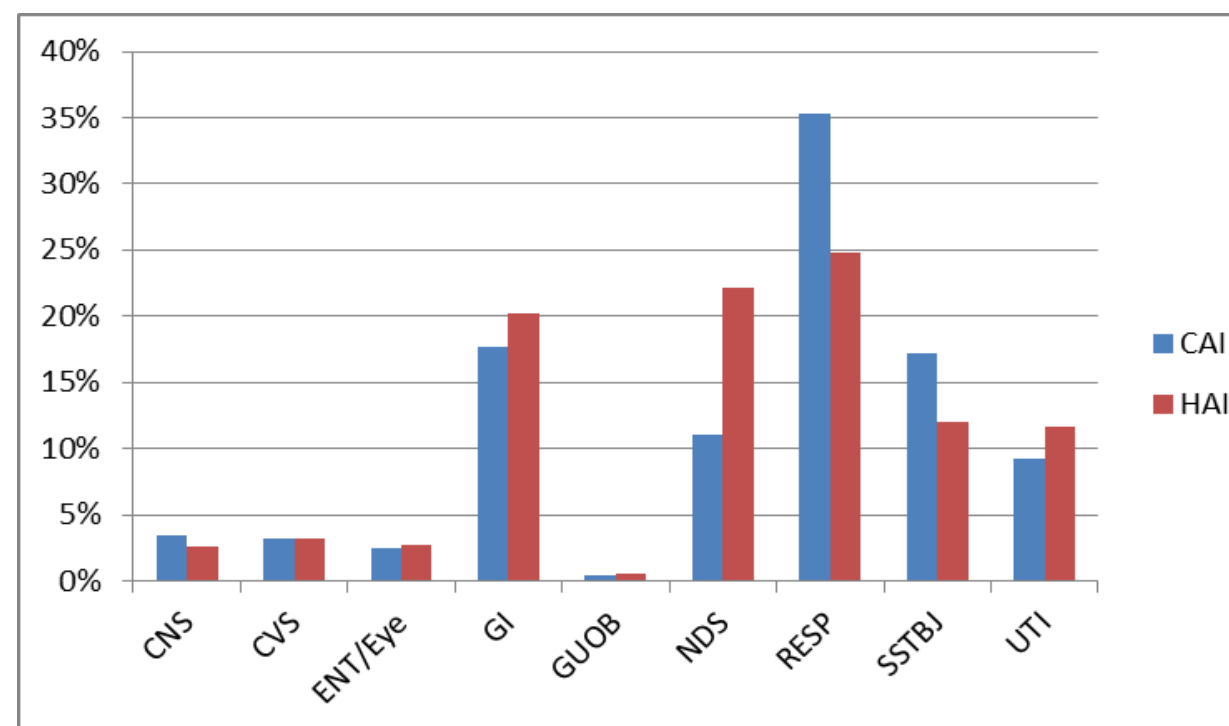
Prescription patterns :

- IV therapy was given in 69.4% of cases
- Multiple AB given for single diagnosis in 18.3%
- Multiple AB in a single patient in 24.5%

Multidrug Resistant Organisms (MDRO) denominator=all patients receiving therapeutic treatment (CAI-HAI) with at least 1antibiotic (J01)
• MDRO were targeted in 8.5% of patients

- ESBL 1.9 %
- MRSA 2.8 %
- VRE 1.0 %
- CRE/CPE 0
- ESBL/CR-NF 0.4 %
- Other MDRO 1.8 %

Figure 2. Indications for AB usage



CONCLUSION

Survey provides interesting benchmarks for national and international comparisons. Respiratory Tract Infections are the most common cause of AB usage and more so in CAI. Non-defined sites are second most frequent in HAI. Antimicrobial prophylaxis, medical and surgical, makes up a fair amount of AB usage and surgical prophylaxis seem to be continued longer than it should.

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