INDIA

The Global Point Prevalence Survey of Antimicrobial Consumption and Resistance (Global-PPS): Results of antimicrobial prescribing in India

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INTRODUCTION AND PURPOSE

• Antimicrobial resistance (AMR) is a global concern particularly in developing countries like India, where the burden of AMR and infectious diseases is very high. Point prevalence surveys (PPS) is a tool to understand antimicrobial consumption and its resistance pattern.
• A study was conducted in 2017 in selected 16 specialized tertiary care centres across India.

METHODS

• All patients who received systemic antimicrobials at 8:00hrs on the day of survey (inclusive of antibacterial prophylaxis for surgery) were included.
• A web based tool developed by University of Antwerp, Belgium was used to enter and analyse data (www.global-pps.com)

RESULTS

• Among total of 1715 adult patients admitted across India, the percentage of adults treated with at least one antimicrobial was 57.1% (N=979).
• 720 patients were on antibiotic treatment, among them 58.1%(N=418) were diagnosed with community acquired infections(CAI) and 41.9%(N=302) with healthcare acquired infections(HAI). Majority of patients received empiric than targeted antimicrobial therapy.(**Table 1**).
• 709 patients received antimicrobial prophylaxis, among them 36.1% (N=256) received medical prophylaxis and 63.9%(N=453) received surgical prophylaxis.
• Ceftriaxone (24%), Piperacillin-tazobactam (8%), Meropenem (8%) were the commonest antimicrobial prescribed for medical prophylaxis.
• Prolonged surgical prophylaxis (SP) was most common (77%) (**Figure I**). Cefuroxime (36%), Amikacin (10%) and Ceftriaxone (8%) was widely prescribed as SP.
• The most common diagnosis was pneumonia or lower respiratory tract infections.(**Figure II**)
• Antibiotic quality indicators (Criterias in G-PPS Protocol)such as reason in notes and documentation of review date was comparatively lower. (**Table II**).
• Out of the patients who received targeted treatment, 5.3%(N=22) were reported to have extended spectrum beta-lactamase (ESBL) producing Enterobacteriaceae.

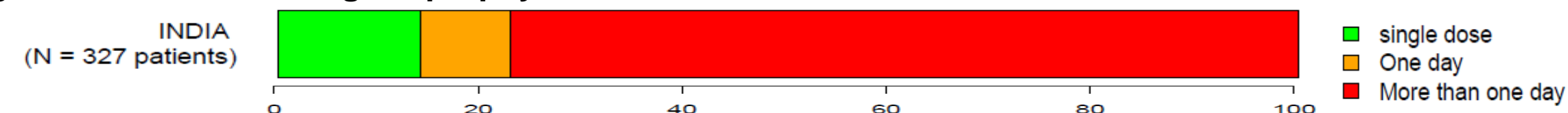**Figure I. Duration of surgical prophylaxis in adults and children in India in 2017**

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- single dose
- One day
- More than one day

Fig II: Ten most common diagnoses to be treated with therapeutic antimicrobials (in percentage)

- Skin and soft tissue
- Cardiovascular system infections
- Pneumonia or lower respiratory tract infection
- Bronchitis
- Other
- Infection of central nervous system;
- Obstetric/gynaecological infections;
- Upper respiratory tract infection;
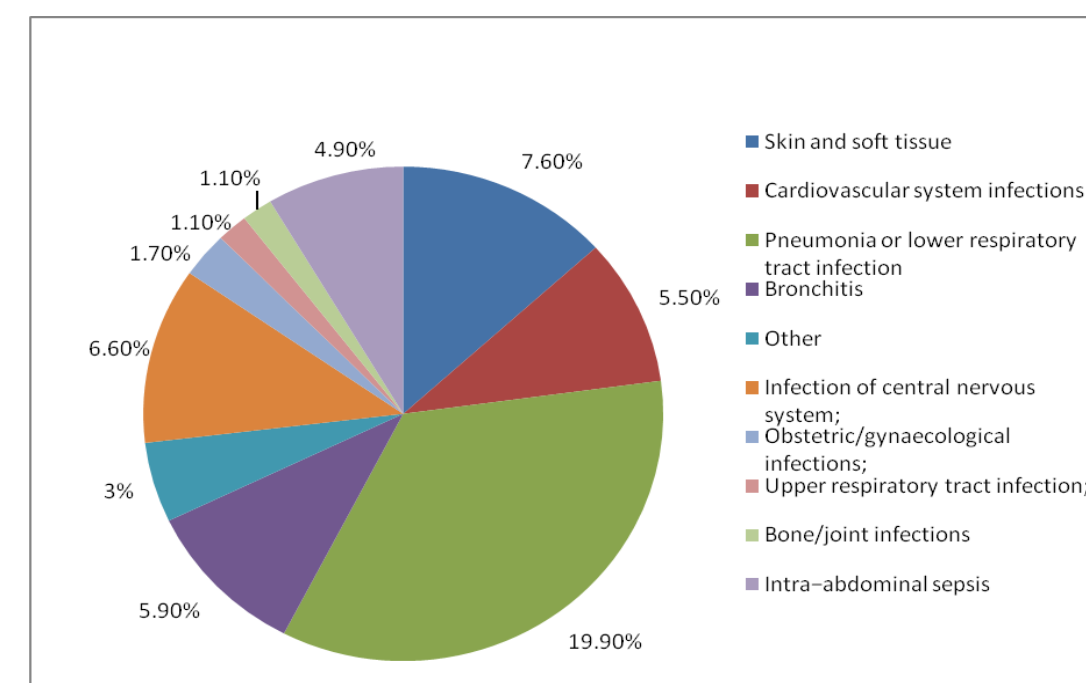- Bone/joint infections
- Intra–abdominal sepsis

Table 1: The proportion of patients on empiric and targeted therapy among patients with community acquired and healthcare associated infections

	CAI	HAI
Empiric	84.20%	65.20%
Targeted	15.80%	34.80%

Table II : Summary of quality indicators for antibiotic use (in numbers)

	N	%
MEDICAL		
Reason in notes	188	45.5
Guidelines missing	85	20.6
Guideline compliant	167	70.2
Stop/review date documented	78	18.9
SURGICAL		
Reason in notes	178	47.3
Guidelines missing	91	24.2
Guideline compliant	142	70.0
Stop/review date documented	181	48.1
ICU		
Reason in notes	245	37.9
Guidelines missing	103	15.9
Guideline compliant	276	79.5
Stop/review date documented	315	48.7

CONCLUSION

The Web based PPS suggests widespread antibiotic usage among adults in selected tertiary care Indian hospitals and underlines the need for antibiotic stewardship in order to promote rational and evidence based practice to limit the emergence of antibiotic resistant microbes.