Surgical Prophylactic Prescribing in African Hospitals. Findings from the Global-Point Prevalence Survey on Antimicrobial Consumption and Resistance (Global-PPS)

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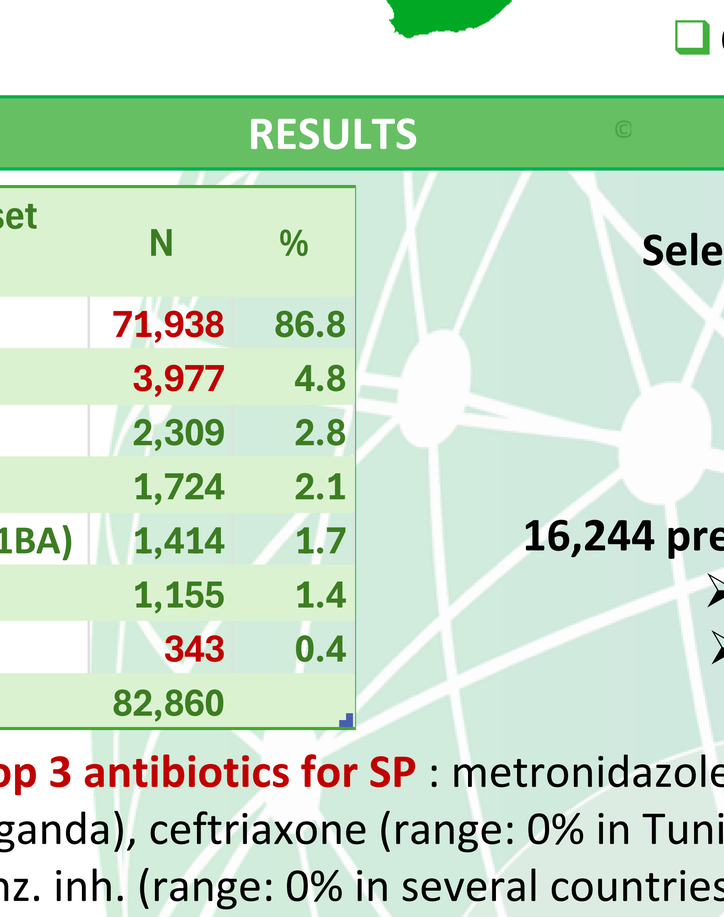
BACKGROUND & AIMS

The Global-PPS (www.global-pps.com) monitors antimicrobial prescribing, healthcare associated infections and resistance in hospitals worldwide.

We analyzed a sub-group of patients who received an antibiotic for surgical prophylaxis (SP) in African hospitals.

Main aims:

- Determine the variation in quantity and quality of surgical prophylactic prescribing.
- Identify targets for quality improvement.



METHODS

We examined Global-PPS data from 2015-2024

- ❑ 23 African countries
- ❑ 398 hospitals
- ❑ 641 validated surveys

In-depth analyses for patients receiving SP at country level (indication code = SP)

Assessed quality indicators (QI)

- ❑ Choice of antibiotic
- ❑ Prolonged SP (> 1 day)
- ❑ Existence of guidelines
- ❑ Compliance to guidelines (choice of drug)

RESULTS

Table 1. Antimicrobials for Africa in Global-PPS dataset (2015-2024)

	N	%
Antibacterials for systemic use (J01)	71,938	86.8
nitroimidazole derivatives (P01AB)	3,977	4.8
Antimalarials (P01)	2,309	2.8
Drugs for treatment of tuberculosis (J04A)	1,724	2.1
Antimycotics/antifungals for systemic use (J02 & D01BA)	1,414	1.7
Antivirals for systemic use (J05)	1,155	1.4
Antibiotics used as intestinal anti-infectives (A07AA)	343	0.4
	82,860	

Selection on J01+P01AB+A07AA (76,258 prescriptions)

16,244 prescriptions (21.3%) for SP of which

- **89.2% for age >17years**
- **10.8% for age ≤17 year**

Table 2 . Top 5 diagnostic codes for SP in Africa*

	%
Proph obstetric/gynaecology	37.9
Proph bone/joint	29.2
Proph gastrointestinal	14.7
Proph Central Nervous System	4.9
Proph Urinary Tract	4.9

* Diagnostic codes includes those for prophylactic & therapeutic use for indication=SP

- **Top 3 antibiotics for SP** : metronidazole (range: 5.8% in Tunisia to 41.7% in Uganda), ceftriaxone (range: 0% in Tunisia to 48.9% in Niger) and amoxicillin & enz. inh. (range: 0% in several countries to 57.5% in Tunisia) (***Table 3***).
  - Metronidazole was mainly prescribed in combination with another antibiotic for obstetric/gynaecology or gastro-intestinal SP.
- **Prolonged SP** (>one day) **was common** (84.2%; range: 11.3% in Ivory Coast to 97.0% in Guinea).
- **Local guidelines** (referring to choice of drug) were lacking in 38.3% of all SP prescriptions and compliance to the type of antibiotic was 67.4%.

	CAMEROON (N=120)	COTE D'IVOIRE (N=274)	EGYPT (N=1,464)	GHANA (N=2093)	GUINEA (N=365)	KENYA (N=579)	MALAWI (N=690)	NIGERIA (N=6,564)	SOUTH AFRICA (N=1,116)	TANZANIA (N=700)	TOGO (N=184)	TUNISIA (N=154)	UGANDA (N=1,100)	ZAMBIA (N=291)	ZIMBABWE (N=229)	Total* (N=16,244)
Metronidazole	20.8	25.9	15.4	33.8	22.5	29.0	39.4	34.4	13.2	35.7	21.7	5.8	41.7	40.2	38.0	30.7
Ceftriaxone	15.8	36.1	19.9	7.8	27.9	33.5	43.8	20.7	4.5	36.4	28.3	0.0	38.6	30.2	15.7	21.6
Amoxicillin/enz. inh.	15.8	5.1	9.2	20.4	1.4	4.5	0.0	6.1	22.8	0.7	9.2	57.8	0.1	0.0	0.0.	8.7
Cefuroxime	10.0	0.4	0.0	12.7	0.0	8.5	0.0	8.9	0.2	1.4	0.0	0.0	0.0	0.0	0.0	5.7
Ciprofloxacin	1.7	1.1	1.1	6.7	3.0	0.2	0.9	7.2	1.9	0.9	19.9	7.8	1.6	1.0	0.9	4.7
Amoxicillin	4.2	15.0	0.4	6.9	1.9	4.1	1.2	2.4	6.2	1.6	16.3	0.6	0.7	13.4	11.4	3.7
Cefazolin	9.2	0.0	1.8	0.0	0.0	4.1	0.0	0.0	36.8	1.1	0.0	2.6	0.9	0.0	0.0	3.1
Gentamicin	13.3	7.7	1.6	2.1	17.3	3.6	1.7	1.8	3.5	5.3	3.3	8.4	3.2	4.5	2.2	2.9
Cefotaxime	0.0	0.4	15.2	0.2	0.3	0.0	0.0	0.2	0.0	0.0	0.0	11.0	0.1	2.1	0.0	1.8
Ampicillin	1.7	0.0	1.7	0.1	21.9	0.0	1.3	0.2	4.1	2.7	0.5	0.0	2.4	0.0	0.4	1.6
Benzylpenicillin	0.0	0.0	0.0	0.0	0.0	0.9	6.7	0.0	0.0	0.4	0.5	0.0	0.2	4.1	24.0	0.8

Table 3. **Proportion (%) of antibiotics prescribed for SP across 15 African countries. Countries with <100 SP prescriptions (N=7) are not displayed but are included in the overall continental total. Antibiotics accounting for >10% of SP are highlighted in red.**

CONCLUSION

Various SP prescription practices have been observed in Africa, with a predominance of broad-spectrum antibiotics and a common tendency toward prolonged SP use. Further research is warranted due to the widespread use of broad-spectrum antibiotics for SP, particularly in relation to the relatively high rate of guideline-adherent prescribing.

Disclosures: bioMérieux is the sole industrial partner of the Global-PPS. The company has no role in study design, data collection, data analysis, data interpretation, or writing the report. Data are strictly confidential and stored anonymously at the coordinating centre of the University of Antwerp.

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