Prevalence of multidrug-resistant bacteria in clinical samples from a secondary hospital in Lambaréné, Gabon, and Implications for antimicrobial stewardship: a retrospective study

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1-Background

Antimicrobial resistance (AMR) is a global health challenge, with Africa expected to bear the highest burden by 2050. This study investigates the spectrum and proportion of **multidrug-resistant (MDR)** bacteria at a major secondary hospital.

2-Methods

Design: Retrospective cross-sectional study (2017–2023).

- **Setting:** Microbiology lab of CERMEL/ASH, Lambaréné.
- **Samples:** 5,401 records (urine, blood, stool, wounds, etc.).
- **Standards:** Bacterial identification and AST followed **CLSI guidelines**; MDR defined by ECDC/CDC criteria.

3-Result

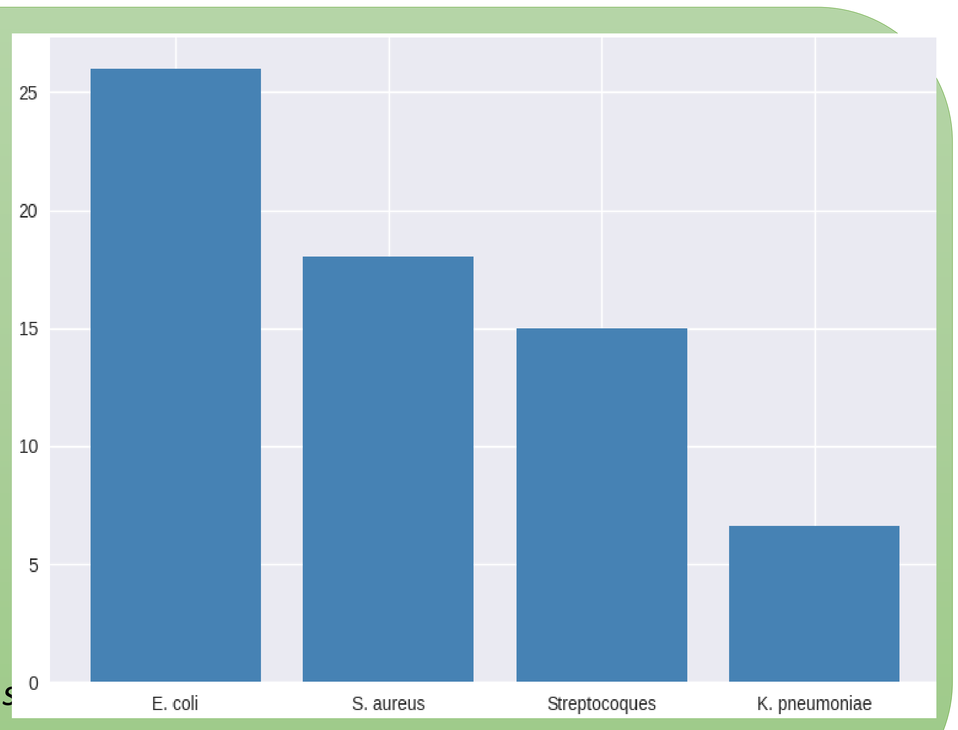
Out of 1,050 clinically relevant isolates:

- ***Escherichia coli*** (26%) – predominant in urine (58%).
- ***Staphylococcus aureus*** (18%) – predominant in wounds (50%) and blood (18%).
- ***ß-hemolytic Streptococci*** (15%).
- ***Klebsiella pneumoniae*** (6.6%).

B. Resistance Profiles

- **Overall MDR Prevalence: 23% (242/1,050)**.
- **ESBL Production:** 10.5% among Enterobacterales (notably high in *K. pneumoniae* at 27.5%).
- **MRSA:** 11.45% of *S. aureus* isolates (up from 5% reported five years ago).
- **WHO 2024 Priority List: 5.5% of isolates are "Critical"** (Carbapenem-resistant and ESBL-producing Enterobacterales).

[MDR distribution by species] *E. coli (35% MDR), K. pneumoniae (42% MDR), Shigella s*



4-Conclusion :

The high prevalence of **MRSA, ESBL-producing Enterobacterales, and MDR isolates** is alarming. In settings with limited infrastructure, these data are vital for:

- **Guiding empiric therapy** where culture is not systematic.
- **Informing National Action Plans** for AMR.
- **Strengthening Stewardship:** Promoting rational antibiotic use and active surveillance.

5-References

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