Audit of antibiotic prophylaxis in visceral surgery in an African country

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Background and importance

According to the WHO, care-associated infections (CAIs) affect at least 2 million patients worldwide annually. In this African country, common CAIs are surgery site infections (SSIs; 24.7% among inpatients in the south of the country). To prevent SSIs, appropriate use of antibiotics is essential.

Aim and objectives: To audit compliance with international recommendations of antibioprophylaxis practices in visceral surgery.

Material and methods

- Prospective observation in visceral surgery wards
  - 5 hospitals in Benin
  - 4 months
- Eligible intervention according to Altemeier's Classification:
  - Surgical intervention clean-contaminated
  - Surgical intervention clean
- Measure : Compliance rate to antibiotic prophylaxis/conventional criteria described by SFAR (Société Française d'Anesthésie et Réanimation)[1].

Results

- **71 interventions were observed**
- Patient's Median age: 35.00 ± 16.03 years [18-82]
- More men 37 (52.1%) than women 34 (47.09%)
- Most common surgical procedure : Hernia repair, n=33 (46.08%)
- Majority of elective procedures
- **Compliance to guidelines**
  - Right Indication : 50 (70.4%) cases (48 administrations when actually indicated and 2 abstentions when antibioprophylaxis was not required
  - Right administration modalities on 48 cases:
    - ✓Right Molecule : 0%.
    - ✓Right Dosage (i.e. double of usual adult dose): 25 (35.21%) cases.
    - ✓Right Timing : 10 (14.08%) cases
    - ✓Right Duration : 15 (21.13%) cases (Figure 3)
- **3 (4.22%)** interventions show compliance to all criteria, except the choice of the molecule

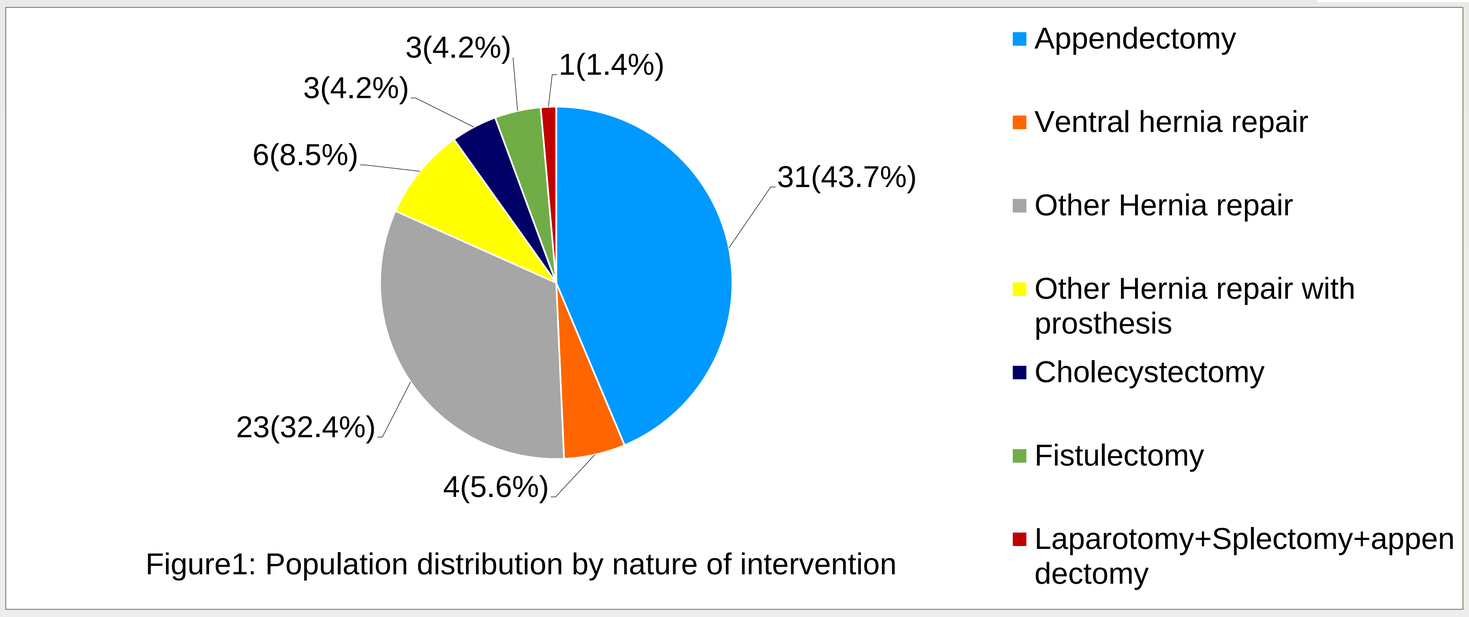


Figure1: Population distribution by nature of intervention

Figure 2: Compliance to antibiotic prophylaxis indication

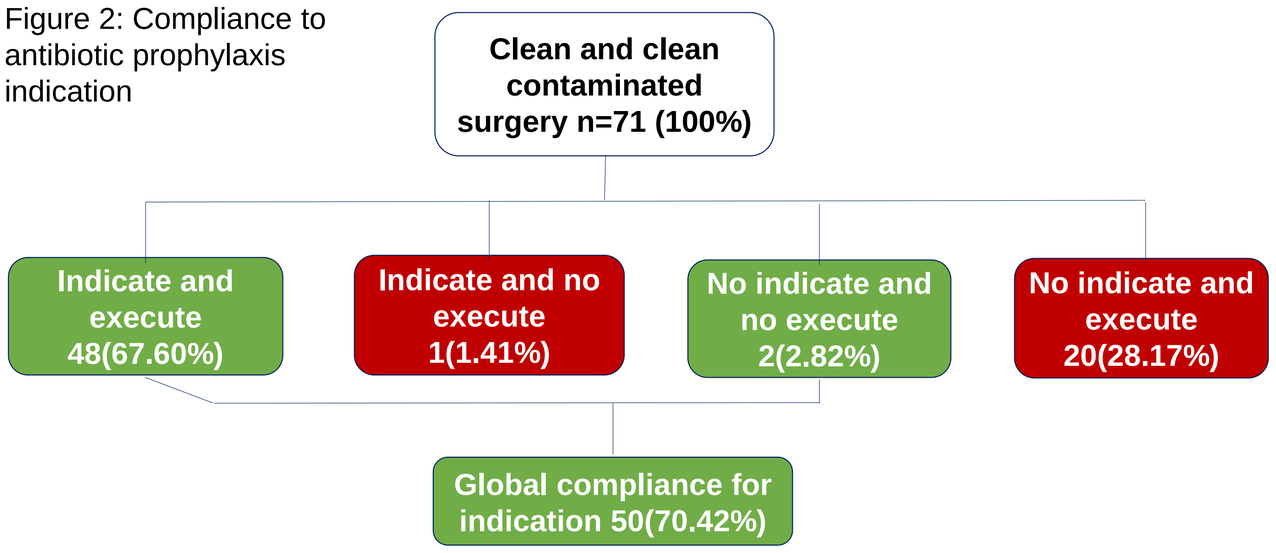


Figure 3: Compliance to administration

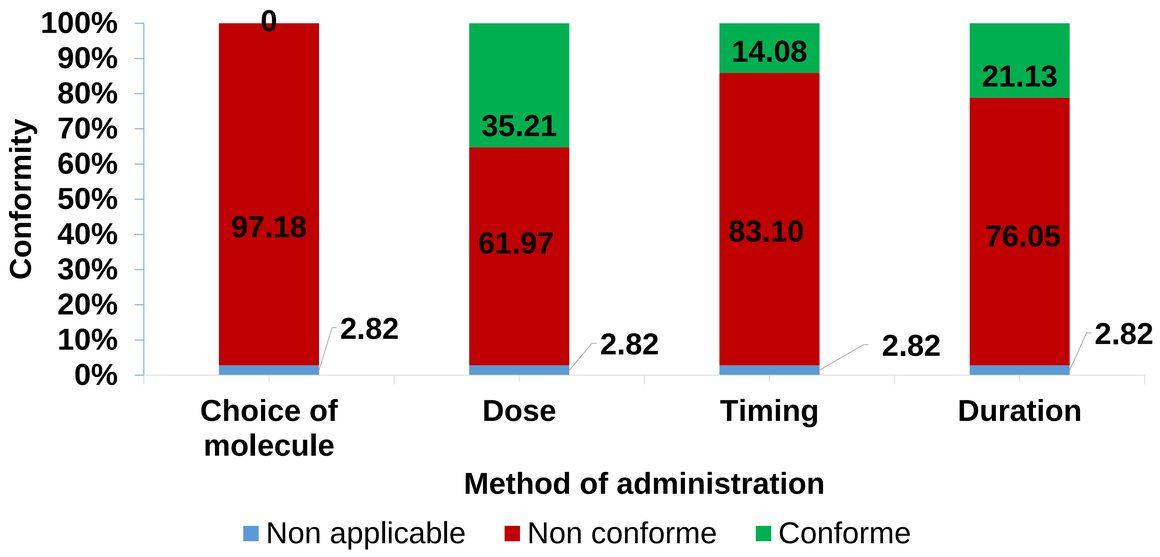
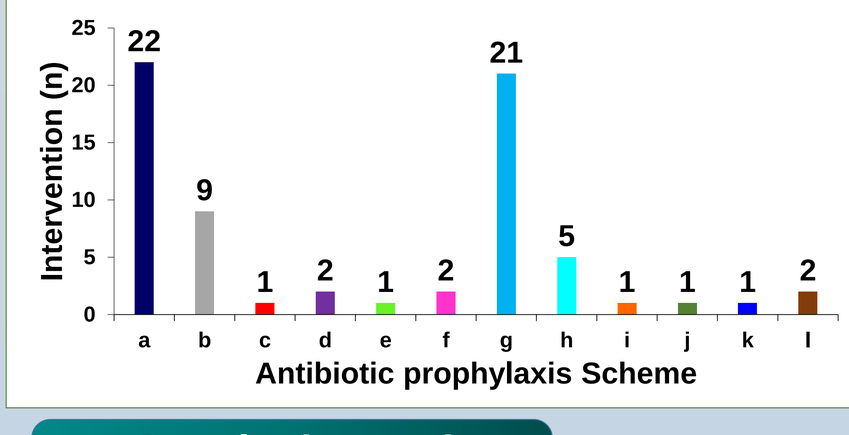


Figure 4: Antibiotics used for prophylaxis (n=68)



a: Ceftriaxone;
b: Ceftriaxone+Metronidazole;
c: Ceftriaxone+Sulbactam;
d: Ceftriaxone+Gentamicin;
e: Ceftriaxone+Ciprofloxacine;
f:Ceftriaxone+Metronidazole+Ciprofloxacine;
g:Amoxicilline+Clavulanic Acid;
h:Amoxicilline+Clavulanic Acid+Metronidazole;
i:Amoxicilline+Clavulanic Acid +Metronidazole+Gentamycine;
j:Ampicillin;
k:Cefotaxime;
l:Ciprofloxacin

Conclusion and relevance

This study highlights a problem of compliance with recommendations. This can be partly explained by the unavailability of half of the recommended molecules on the local market, the urgent character of the surgery, and the lack of knowledge and training of the health staffs. The overuse of broad spectrum antibiotics also reported in other studies may reveal a fear of SSIs by healthcare providers. These data underline the need of implementing an appropriate antibioguide based on local epidemiology and drug availability.

Reference

1-Société Française d'anesthésie et de réanimation (SFAR). Antibioprophylaxie en chirurgie et médecine interventionnelle (patients adultes).Actualisation *http://www.sfar.org/article/669/antibioprophylaxie-en-chirugie-et-medecine-interventionnelle-patients-adultes-cc-2010,* 2010.