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# Antibioprophylaxis in cesarean section: what are the current practices in hospitals in Benin?

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## Introduction

Cesarean delivery is free for the patients in **Benin** since 2009<sup>1</sup> and therefore, this practice is increasing. Good practice of antibioprophylaxis for cesarean delivery has been shown to reduce the incidence of postoperative infectious morbidity<sup>2</sup>. Moreover, the choice of antibiotics used for prophylaxis have to be optimal to avoid the risk of antimicrobial resistance<sup>3</sup>.

**Aim** :To assess the quality of antibioprophylaxis in cesarean section according to the "five conventional criteria of antibioprophylaxis"<sup>4</sup> (i.e.: **right indication, molecule, dose, timing, duration**).

## Methods

We conducted a prospective observational study in **four hospitals** in the south of Benin over a period of **1 month**.

Data was collected by trained survey teams.

**Table 1:** Patients characteristics.

|   |                          |
|---|--------------------------|
| <b>Number of patients, N(%)</b>           | 141 (100%)               |
| <b>Emergency case, N(%)</b>               | 115 (81.6%)              |
| <b>Median age (years)</b>                 | 28.05 ± 4.8<br>[17 - 42] |
| <b>Median intervention duration (min)</b> | 39.23 ± 12<br>[13 - 75]  |

**Table 2:** The most frequently used antibiotics regimens.

| <b>Molecule</b>                       | <b>Patients N (%)</b> |
|---------------------------------------|-----------------------|
| Amoxiclav + Metronidazole             | 38 (26.9%)            |
| Ampicillin + Gentamicin               | 31 (22 %)             |
| Ampicillin + Metronidazole            | 26 (18.4%)            |
| Ampicillin+ Gentamicin+ Metronidazole | 24 (17%)              |

## Results

**141 cesareans** were observed (81.6% emergency cases, n = 115).

▪ **99.3% of women undergoing cesarean** intervention received an antibiotic (n =140).

▪The antibiotics used in the hospitals **were not those recommended** by the guidelines: (*metronidazole, ampicillin, gentamicin, ciprofloxacin, ceftriaxone, amoxiclav, ceftriaxone + sulbactam vs cefazolin*).

Moreover, in the same hospital, **three to sixteen** different regimens were prescribed and patients received up to **five antibiotics (Figure 2)**.

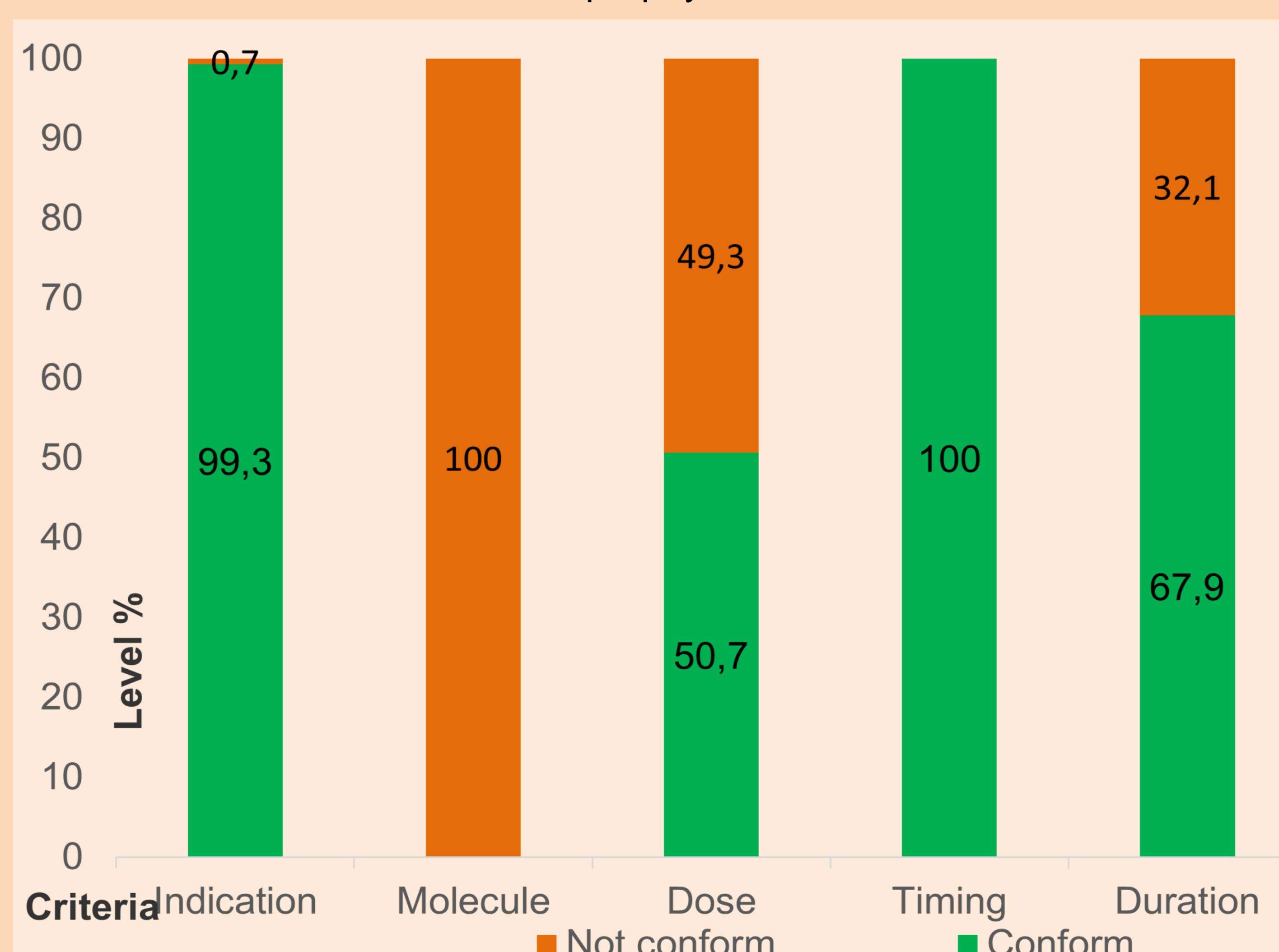
▪ **50.7%** (n = 71) of patients **received the recommended dose** of antibiotic for the first administration.

▪**100% of women** received the **antibiotic in the hour** before the incision or after the cord clamping.

▪The **right antibioprophylaxis period** was done in **67.9%** of cases and it was continued for **more than the recommended 48 hours** in 32.1 % of cases.

The practices of antibioprophylaxis were different through the four hospitals.

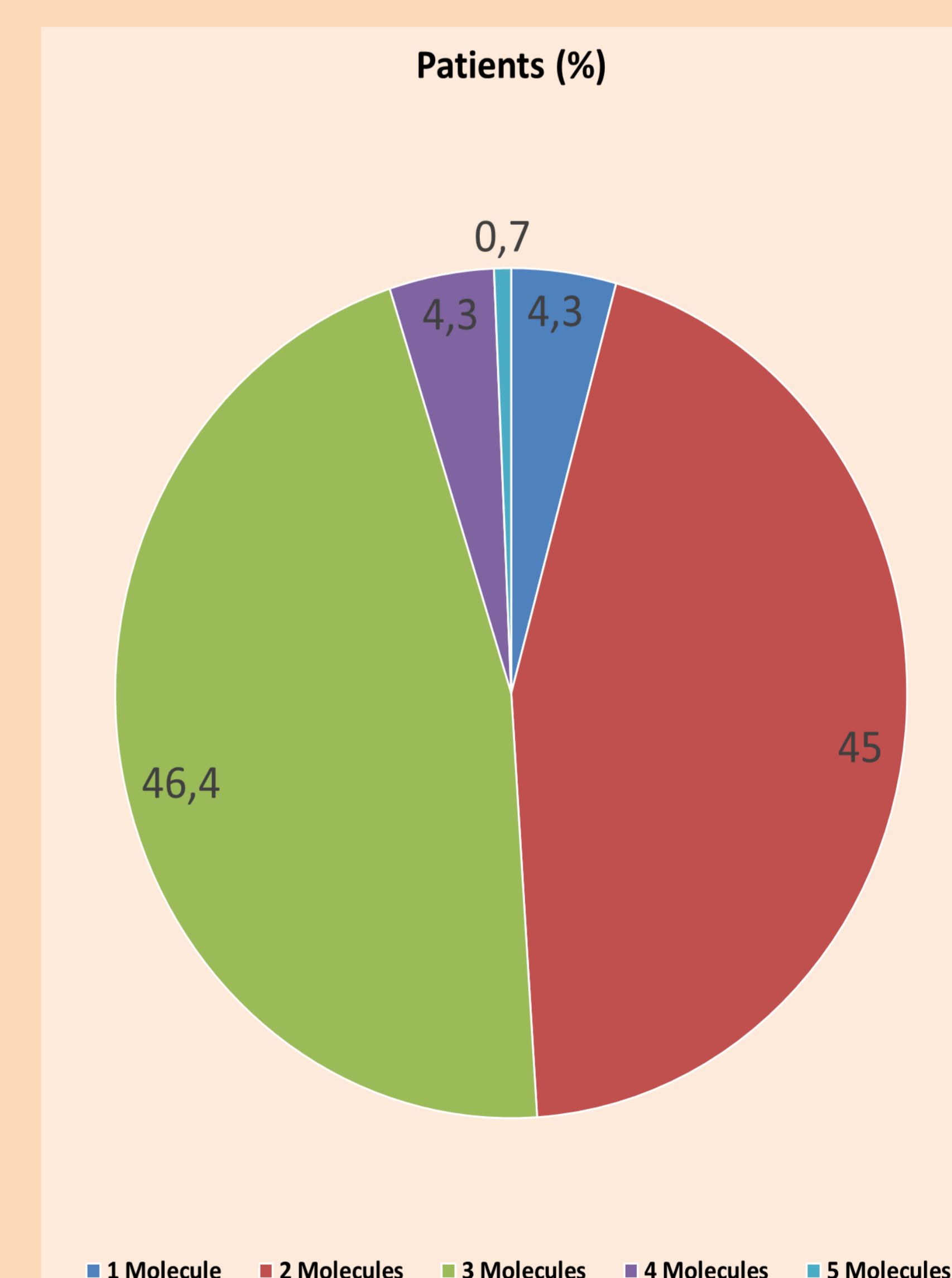
**Figure 1 :** Level of achievement of the conventional criteria of antibioprophylaxis.



## Conclusion

- Most cesareans were emergency.
- In the four hospitals, **the practices of antibioprophylaxis** in cesarean intervention **were not uniform** and the use of the antibiotics was not as recommended.
- **Broad-spectrum antibiotics** were used in prophylaxis, **increasing the risk of selection antibiotic resistance**, which is an important threat to public health.
- Further investigations are needed to understand the reasons of this practice and to develop solutions to improve antibioprophylaxis in cesarean section and other interventions in Benin.

**Figure 2:** Number of molecules used per patient.



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