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## CONTRIBUTION TO THE STUDY OF THE SELF-MEDICATION PRESSURE AND ITS EFFECTS IN THE TREATMENT OF INFECTIONS: THE CASE OF THE PREFECTURE OF ZIO.

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### **Keywords:**

*Self-medication -  
Antibiotics Market -  
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### **Abstract**

The dangers of pharmaceutical quality defects are dreadful, especially those antibiotics including misuse of medicine is the cause of antibiotic-resistance and can induce a global health crisis in the medium and long terms for certain diseases. The risks of non-compliance are multiple antibiotics.

This work aimed to determine the pressure of self-medication and extent of the sale of antibiotics in the markets of the Zio prefecture and their consequences on the treatment of infections including postoperative infections.

This study, prospective kind, was to frame the Zio prefecture where a survey was conducted in 106 selling places including the main towns of districts from 2 January to 14 February 2014. These products and their corresponding pharmacies were collected from vendors and in pharmacies, monitored, analyzed and assayed by the microbiological method.

The most frequently encountered antibiotics in illicit markets sellers are: amoxicillin 500 mg capsules (17.9%), respectively 480 mg cotrimoxazole and penicillin G 800.000 IU powder (15.1% and 14.2%), the ampicillin 500 mg capsules (13.2%) and the tetracycline capsules (11.3%). These products were in 61.3% of cases sold in blister, 20.8% of the bulk and in 17.9% of the cases in powder or injection ampoule. The expiry date was missing in 48% of the cases. As for the dosage and duration of treatment they were incorrect in 17% of the cases. These products have been strongly sought in 84% of the cases. Of these molecules, only 13.2% were acquired on prescription. Some products from both street and dispensaries have no effect on the seeds used to assay them.

The pressure of self-medication in the treatment of infections remains strong in Togo, in particular, in the prefecture of Zio. Non-compliance of the street products plays an important role in the emergence of resistant organisms. This situation calls for everyone to ensure effective and appropriate antibiotic therapy.

## INTRODUCTION

Infections have now become a public health problem daily. Their treatment, particularly of postoperative infections, requires special attention and wrongly can be conducted only because numerous risks and consequences associated with it. In developing countries, access to care and ignorance of difficulty in terms of health education lead to self-medication. Despite the availability of antibiotics private pharmacies and the establishment of an essential drugs policy, the illicit sale is still important (1). The dangers of pharmaceutical quality defects are formidable. The particular case of antibiotics which misuse is the cause of antibiotic-resistance causes a global health crisis for some diseases. The risks of non-compliance are multiple antibiotics. In Africa, more work has been done in this field: those (2, 3, 4, 5, 6 and 7), on all street drugs and self-medication.

In Togo, these types of searches are rare or nonexistent nowadays. Much remains to be done after all because the illicit sale of antibiotics and self-medication still in full swing. The consequences of this practice are real Togo. Indeed, the work (8) showed that the antibiotic resistance of germs involved in postoperative infections in hospitals is real Togo, particularly CHR Tsévié and may be related to previous hospitalizations medication practices. Scientific investigations of street drugs and self-medication remain the major reason for this work.

The objective is to determine the pressure of self-medication in the treatment of infections, especially postoperative, for better antibiotics. Specifically this study aims to:

- identify illegal outlets of antibiotics and perform certain levies;
- to study the compliance of such antibiotics;
- measure the extent of the consequences associated with their consumption compared to antibiotic resistance;
- propose approaches to solutions to problems related to self-medication.

## MATERIALS & MEHOTDS

### *Scientific framework*

The scientific framework is the Zio prefecture which includes seventeen (17) cantons each with a large market.

### *Location*

The Prefecture of Zio has the capital city Tsévié located 35 kilometers north of the capital Lome in Togo on national road number one. This prefecture is limited to the east by the prefectures of Yoto and Vo, to the west by the Prefecture of Ave in the north by that of Haho and south by the Gulf.

## Methods

### **Type and period of study**

This is an extensive prospective study of 42 days (from 2 January to 14 February 2014).

### *Sampling*

The period of this study has raised one hundred and six (106) samples.

### *Inclusion Criteria*

Were included in this study, the antibiotics sold in the cantons of markets Zio prefecture and offered by sellers.

### *Exclusion Criteria*

Have not been considered in this work, antibiotics sold in the markets of capitals of cantons do not belong to the Prefecture of Zio, those from a public or private pharmacies as well as those sold before and after the period from 2 January to 14 February 2014.

### *The investigation*

A staff of one hundred and six (106) illegal vendors were approached and questioned between January and February 2014. Various parameters were considered. A survey form allowing to have all the information on both sellers and on selected products has been established to carry out this examination. (See annex this survey form).

**Data collection**

It was carried through the information obtained from the survey sheet.

**The variables studied**

This is the level of education of the sellers of antibiotics found in the markets, their expiration dates, their dosage and treatment, packaging, the importance of their consumption, the nature of their prescription.

**Data Analysis**

It was made using the following software: World, Excel and Epi info version 2007.

**RESULTS**

- Distribution of vendors according to their level of schooling

Table 1 shows that the majority of sellers have a very low level of schooling.

- Distribution of antibiotics proposed by the markets for sellers

The results in Table 1 show that the most frequently recommended drugs for the treatment of infections by sellers illicit markets are: amoxicillin

500 mg capsules (17.9%), followed respectively bactrim 480 mg tablet (15.1%), penicillin G 800.000 IU injection (14.2%), ampicillin capsule 500mg (13.2%) capsule and tetracycline (11.3%).

- Sample Distribution by expiration date

Table 1 shows that the expiry date of antibiotics is not marked in 48% of cases.

- Distribution of samples according to the duration of treatment and dosage

From Table 1 the dosage and duration of treatment are incorrect for 17% of cases. The treatment is considered insufficient when either treatment duration and dosage, either one of them are incorrect.

- Distribution of samples according to their packaging

Table 1 shows the distribution of samples according to the duration of treatment and dosage. From this table we note that these products are sold in 61.3% of cases in blister, 20.8% of bulk and 17.9% of cases and powder for injection.

- Distribution of samples according to the importance of their consumption

The results of the study of the distribution of samples according to the importance of their use are summarized in Table 1. According to this distribution, these products are highly consumed in 84% of cases.

- Distribution of samples according to the nature of the prescription

Figure 1 shows that, of all these molecules, only 13.2% are acquired on prescription.

- Distribution of samples according to their conservation

Antibiotics found on illicit markets are 100% exposed on shelves without protection, they undergo the action of climate weather.

**DISCUSSION**

The imminence of the consequences of self-medication in the treatment of infections and risk of non-compliance of antibiotics is effective in Togo, especially in the Zio prefecture.

- The level of education of sellers

This level is very low on the whole. Classes of the illiterates and of form IV are the two extremes (Table 1).

**Table 1: Characteristics of the treatment**

level of schooling	Number	Percentage (%)
Illiterets	20	18.9
Primary four	1	0.9
Primary sux	23	21.7
Secondary four I	9	8.5
Secondary four II	6	5.7

Secondary four III	20	18,9
Secondary four IV	27	25,5
<b>Expiry Date</b>		
Marked	55	51.9
Non marked	51	48.1
<b>Antibiotics</b>		
Amoxicilline	19	17.9
Ampicilline	14	13.2
Ampiclox	10	9.4
Bactrim	16	15.1
Ceftriaxone	2	1.9
Ciprofloxacin	8	7.5
Cloxacilline	1	0.9
Gentamycine	1	0.9
Penicilline	15	14.2
Streptomycine	1	0.9
Teramycide	1	0.9
Teramycine	1	0.9
Tetracycline	12	11.3
Tifomycine	5	4.7
<b>Treatment</b>		
Sufficient	18	17.0
Insufficient	88	83.0
<b>Condit. Mod</b>		
Blister	65	61.3
Injectable	19	17.9
Vrac	22	20.8
<b>Importance</b>		
Strong	89	84.0
Weak	17	16.0
<b>Total</b>	<b>106</b>	<b>100.0</b>

This level does not allow proper dispensing of antibiotics and thus promotes ignorance of regulations. The same observation was made in Cotonou (3).

- Antibiotics offered by sellers

The most commonly available antibiotics: beta - lactam antibiotics (45.3%), sulfa drugs (15.1%) and cyclins (11.3%)

This suggests that these antibiotics would be obsolete. It should be noted that consumption of expired products has serious consequences: intoxication due to the active substance altered, complication of inadequately treated infection, selection of resistant strains to antibiotics, severe clinical manifestations.

In a study conducted in Dakar on the parallel market medicines for the treatment of urethritis Sow et al. (1996) reported that of the 50 samples offered 90% do not have an expiration date. These results are superior to those of

this study.

- The dosage and duration of treatment

The dosage and duration of treatment offered by these sellers to treat the infection are incorrect. The proposed rates are usually very low (two tablets or capsules as a single dose). The duration of treatment is very inadequate from one to two and a half days in most cases.

In total, of the 106 samples, dosage and duration of treatment offered by sellers are incorrect for 18 cases, or 17%.

The results are similar to those obtained by Sow et al. in 2000 in Dakar. By cons, Fayomi et al. found in 1996 in Cotonou beta lactams, macrolides and tetracyclines are leading proposals.

- The expiry date of samples

Almost half of the products (48%) do not have a reference to the expiry date.

This result could have a relationship with either ignorance about treatment or financial inaccessibility of consumers for correct antibiotic doses. Which would lead to the insufficient and fractionated doses. This exposes the patient to an increased risk of selecting resistant organisms. Sow et al. found in a study in Dakar that the dosage was incorrect in 94% of cases. As regards the duration of the treatment it was insufficient in 80% of cases. In the treatment of gonorrhoea, Fayomi et al. found in Cotonou that the proposed dose was ineffective in 85% of cases. These results are similar to those of the present study.

- The product packaging mode

The majority of the samples are in blister (61.3%).

Sow et al. found a percentage of 12% compared to the blister antibiotics conditioning mode, These results differ from those found in our work that is 61.3% more than five times the percentage obtained in Dakar.

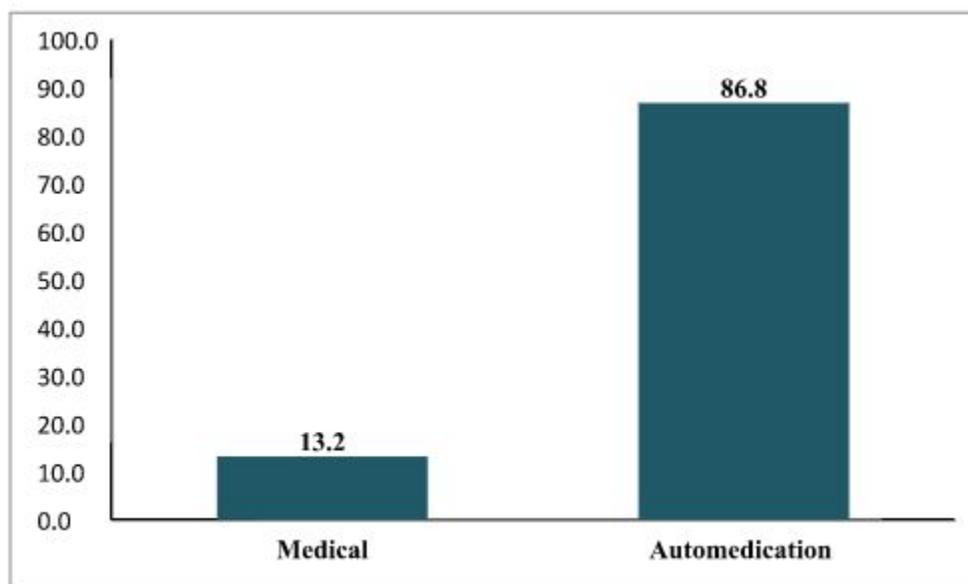
- The importance of antibiotic consumption

The number of customers that come every day with an infection is very considerable. These products are highly consumed (84% of cases).

This misuse of these drugs in a mostly ineffective treatment can promote intoxication, selection of strains resistant to these antibiotics. Sow et al. found a rate of 58.3% with 5 modes.

- The nature of the prescription

Self-medication is very developed. The majority (86.8%) were acquired without a medical prescription.



*Fig.1: Distribution of samples according to the nature of their prescription*

This self-medication can increase the risk of side effects due to the ignorance of the cons-indications, and essentially the emergence of resistant bacterial strains due to incorrect dosages and treatment times. This resistance phenomenon poses in sub-Saharan Africa a real public health problem because of its development, its negative economic impact and contribution in the failure of antibiotic therapy (WHO ReMeD in 1995).

### **Preservation of products**

Antibiotics are difficult products to keep. These products are 100% sold on open shelves. They are poorly preserved as exposed to sun, rain, dust, heat and various weather. These climatic weather can play an important role in the inactivity of antibiotics and poisoning sick because of the heat, humidity and light that cause processing (inactivation of the active ingredient, production of toxic derivatives to vital organs). Sow et al. reported in their research that antibiotics are sold in 85% of cases on tables exposed to the sun. These observations are superimposed to those of the present work.

### **CONCLUSION**

The pressure of self-medication is strong in Togo, especially in the Zio prefecture. Today it remains a serious public health problem fostered by the development of the illicit sale of drugs. This is maintained by personnel without proper training ignoring any regulation on good dispensing antibiotics. Products illicit market are non-compliant in their majority and, by their consumption, contribute to the selection of bacterial strains resistant to antibiotics. To combat it, it would be necessary to carry out the following actions: awareness of population and public authorities; the repression of the illegal practice of pharmacy by development and adoption of legislation and regulations relating to the medicinal and punishment of offenders in these texts; the cutting of the same supply chain level sources specifically for entry into the country.

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