Volume 03, Issue 05 (November-December 2020), PP 67-90 **www.ijmsdr.org**
ISSN: 2581-902X

International Journal of Medical Science and Dental Research

Critical Analysis of Consumption of Drug in Consultant Patients in Dental Emergencies Service

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SUMMARY

Objective:*The objective of this study is to describe and analyze theprescription, self-medication and use of medicinal plants in patients consulting in the consultation and dental emergency department of the University Hospital Centre of Casablanca (CHU Ibn Rochd).*

Methods:*This is a descriptive, monocentric, prospectiveobservational study conducted at the Ibn Rochd University Hospital in Casablanca for two months (October 26 to December 18, 2018). The data collection was in the form of an anonymous questionnaire, as well as its analysis by Microsoft0 Office EXCEL and IBM SPSS statistics version software.*

Results:*The study involved 200 predominantly female patients(61.5%), the most common reasons for consultation in the dental emergency department were oral pain, oral abscess, trauma and dental bleeding. A total of 20 International Non-proprietary Name (INNs) were found in 192 drug prescriptions compared to 19 INNs by self-medication. Dentists prescribe 2.32±1.25 drugs per patient to which were added on average 1.27±0.73 drugs taken simultaneously by self-medication in 87 (43.5%) patients. The most frequently prescribed therapeutic classes used by self-medication were ATBs, analgesics, corticosteroids, antiseptics and NSAIDs. Patients had at least one non-compliant drug in 7.29% of prescriptions versus 27.58% by self-medication, of which 3 prescriptions were an absolute contraindication versus 2 cases by self-medication. A total of 11 drug interactions (78.57%) were mainly found by prescription compared to 16 cases of interactions (66.66%) found by self-medication, with a distribution according to the severity of contraindications, not recommended drug interactions, drug interactions requiring precautions for use and drug interactions to be considered.*

Conclusion:*The control of drug use in the dental consultation andemergency department is essential. Patients' awareness of the risk of self-medication should be raised to avoid second effects and drugs interactions. The realization of the electronic patient file for the follow-up of the medication intake.*

Key Words: *Dental emergencies service, Drug, Drug interactions, Self medication.*

I. Introduction

Prescribing is an integral part of the dentist's therapeutic arsenal to which special attention must absolutely be paid. Knowledge of the physiological and pathophysiological characteristics of patients and of the pharmaceutical specialties prescribed is inherent in any good prescribing practitioner [1]
The main areas of interest in odontopharmacological therapy are infectiology and algology.

Whether or not it is carried out as part of an emergency, the drug prescription must always be preceded by a medical examination and a rigorous anamnesis in order to determine the right choice of drug therapy and to avoid the occurrence of clinically meaningful drug interactions.

Thus, faced with the polypharmacy and self-medication of patients, the attention paid to drug prescription must, today more than ever before, be reinforced, without forgetting the attention which must also be paid to physicochemical interactions that may exist between prescribed drugs and the medical devices used.

Irrational use of medicines is a major global problem. The World Health Organization (WHO) estimates that more than half of all medicines are prescribed, distributed or sold inappropriately. At the same time, about a third of the world's population does not have access to essential medicines [2]. The common types of irrational drug use are:

- The use of too many drugs per patient (polypharmacy);
- The inappropriate use of antimicrobials, often in inadequate dosages, for the treatment of non-microbial infections;
- The misuse of injectable form when oral formulations would be more appropriate;
- Non-compliance of prescribing practices with therapeutic directives;
- Inappropriate and frequent self-medication of prescription-only drugs [2].

Self-medication itself is subdivided into two forms, depending on the source of obtaining the drug: pharmacy self-medication and home self-medication.Thus the risks of pharmacy self-medication are quite low compared to the risks of home self-medication [3].

The aim of our work is to carry out a study on the taking of drugs (prescription and self-medication) and medicinal plants by patients consulting the Dental Consultations and Emergency Services of the Ibn Rochd University Hospital Center (Casablanca, Morocco)

We remind that the Dental Consultations and Emergencies Service is a part of the Center for Dental Consultations and Treatments, it operates 7 days a week, and offers:

- Urgent care;
- Specialized consultations according to a schedule established by the various departments. These consultations take place from Monday to Friday from 8:30 am to 12:30 pm;
- X-rays for consulting patients, in emergency or externally.

II. Materials and Methods :

This is a prospective monocentric descriptive observational study, it took place over a period of two months (from October 26 to December 18, 2018), and aimed at reporting on the drugs consumed by patients whether it is self-medication, an old prescription, or drugs prescribed in the Casablanca Dental Consultations and Emergencies. It took place in the Dental Consultations and Emergencies Service (SCUD) of the Dental Consultation and Treatment Center (CCTD) of the Ibn Rochd University Hospital in Casablanca.

Were included in this study all adult patients (over 15 years) of both sexes, treated in the SCUD of the Ibn Rochd University Hospital in Casablanca, during the study period and having given their informed consent to participate in our survey.

Were excluded from the study all children under the age of 15, patients not treated at the SCUD, and people who did not consent-who refused to participate in the survey.

200 patients have met the inclusion criteria mentioned above.

The data collection tool was an anonymous questionnaire with two types of variables:

Sociodemographic characteristics of patients

Description of drugs and herbal medicines consumed

Two types of questions were used: Some were closed with dichotomous choice (yes / no) and multiple choices, the others were open, leaving the respondent free to choose his own words.

All the data collected were entered using EXCEL software, in the form of a database (= data sheet), as well as IBM SPSS statistics version software, in collaboration with the medical informatics department.

III. Results

We present the results of our study in the form of five paragraphs in the following order:

3.1- The socio-demographic data of the subjects examined;
3.2- Analysis of drug prescriptions;
3.3- Analysis of self-medication drugs;
3.4- Compliance with the prescribed treatment.

3.1. SOCIODEMOGRAPHIC DATA OF THE SUBJECTS CONSULTED

3.1.1- Distribution of patients by sex

Among the 200 patients interviewed, there is a female predominance with 123 women (61.5%) and 77 men (38.5%). The sex ratio is 0.63.

3.1.2- Distribution of patients according to age groups

Five age groups have been established. The most represented are the 15-25 and 26-35 age groups with percentages of 27% and 26% respectively. In contrast, patients over 56 years of age form the least represented age group (12%). The average age of the population studied is 35.56 years ± 11.74.

3.1.3- Distribution of chronic pathologies in the studied population

The results of this study show that 31% (n = 62) of the patients had a chronic disease, of which 24% were diabetic, 21% were cardiac, 15% were asthmatic as well as 11% who had renal insufficiency (RI).

3.1.4- Distribution of chronic pathologies according to the age of the subjects

The distribution of chronic pathologies according to the age of the subjects shows an increase in these pathologies according to the age of the patients. **(Table 1)**

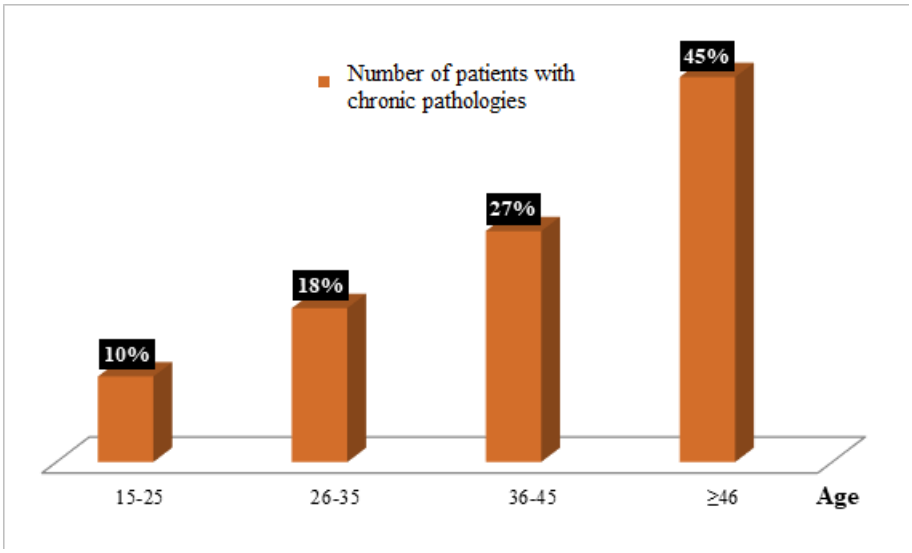

Figure 1: Percentage of chronic pathologies depending on the age.

Analysis of the age distribution of the nature of chronic conditions shows that diabetes, cardiovascular conditions and renal insufficiency (RI) were higher in patients over 46 years of age. Rheumatic conditions were higher in patients between the ages of 26 and 35. In addition, respiratory diseases affected all age groups, while neuropsychiatric pathologies only affected the 15-25 and 36-45 age groups. **(Fig 2)**

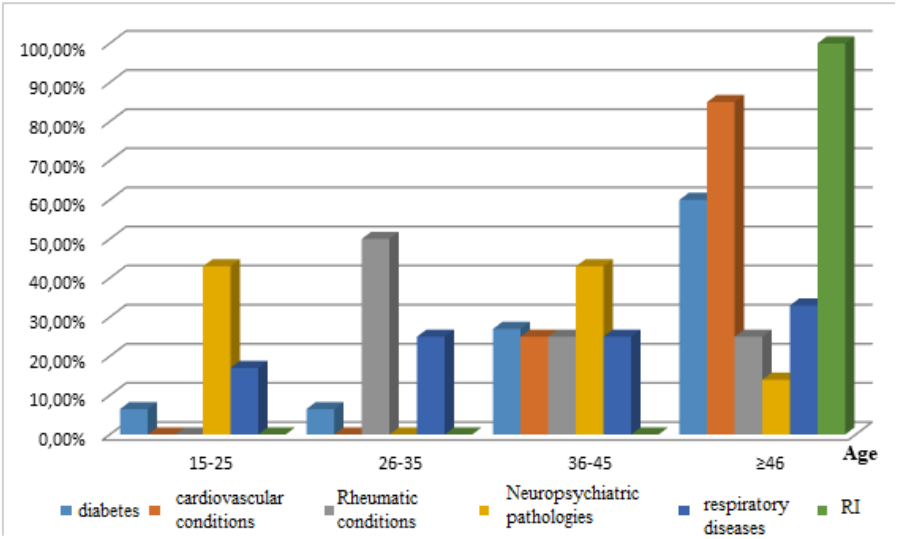

Figure 2: Type of chronic conditions depending on the age

Regarding allergy, among the 200 patients surveyed, 23 (11.5%) were allergic. This allergy was predominant by mites (43%), followed by penicillin (22%). While the remaining 35% was represented by food allergies, humidity, cold, etc. **(Fig 3)**

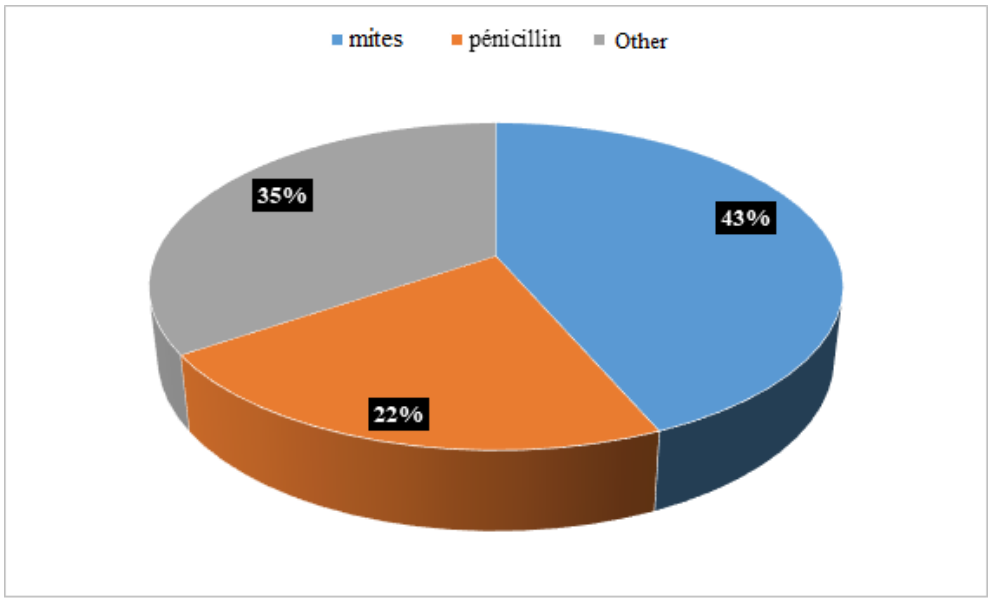

Figure 3: The different types of allergy found in patients

3.1.5. Distribution of patients by the Chief complaint:

We find that the majority of patients (62.5%) consult for oral pain, 19% consult for infections, and 18% for oral trauma. **(Fig 4)**

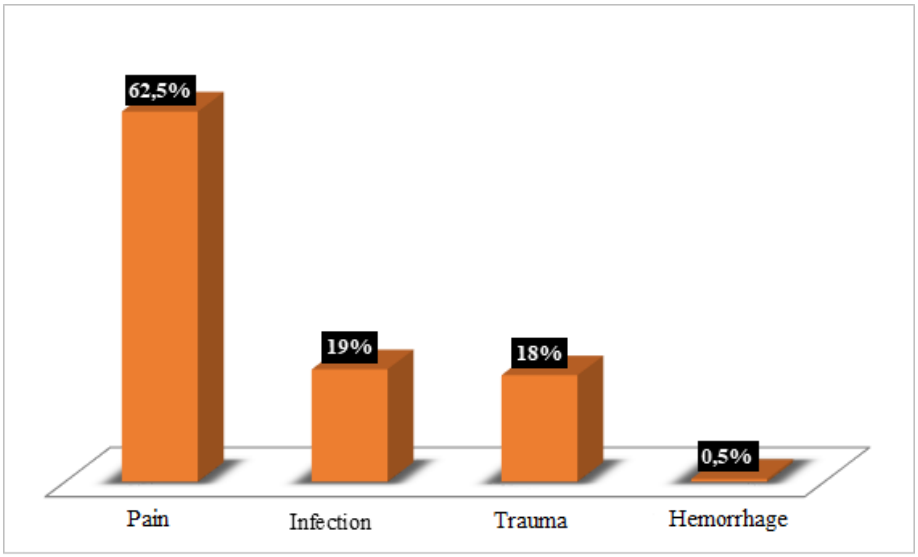

Figure 4 : Distribution of patients depending on the chief complaint

3.2. ANALYSIS OF MEDICINAL PRESCRIPTION IN THE STUDIED POPULATION:

3.2.1. Medical therapy prescribed to patients:

Analysis of the distribution of the prescribed therapeutic classes shows that ATBs and analgesics are the most prescribed, both outside the dental emergency department (ATB = 44%, analgesics = 26%) and inside of it (ATB = 38%, analgesics = 37%). **(Fig 5)**

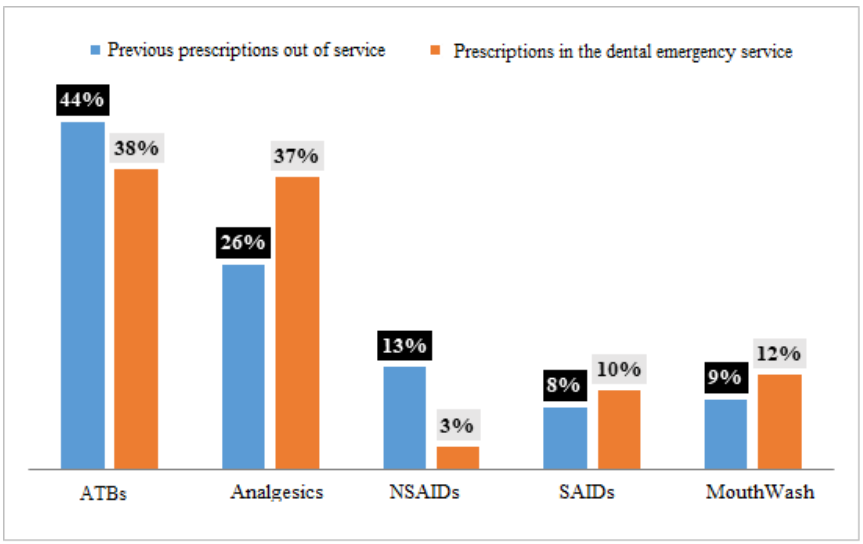

Figure 5: The most prescribed therapeutic classes

3.2.1.1 The most prescribed ATBs:

The most prescribed antibiotics in the dental emergency department are amoxicillin (46% of prescriptions), followed by the combination of amoxicillin + clavulanic acid (37%).

The most widely prescribed antibiotic outside the dental emergency department is the amoxicillin + clavulanic acid combination (39%). **(Fig 6)**

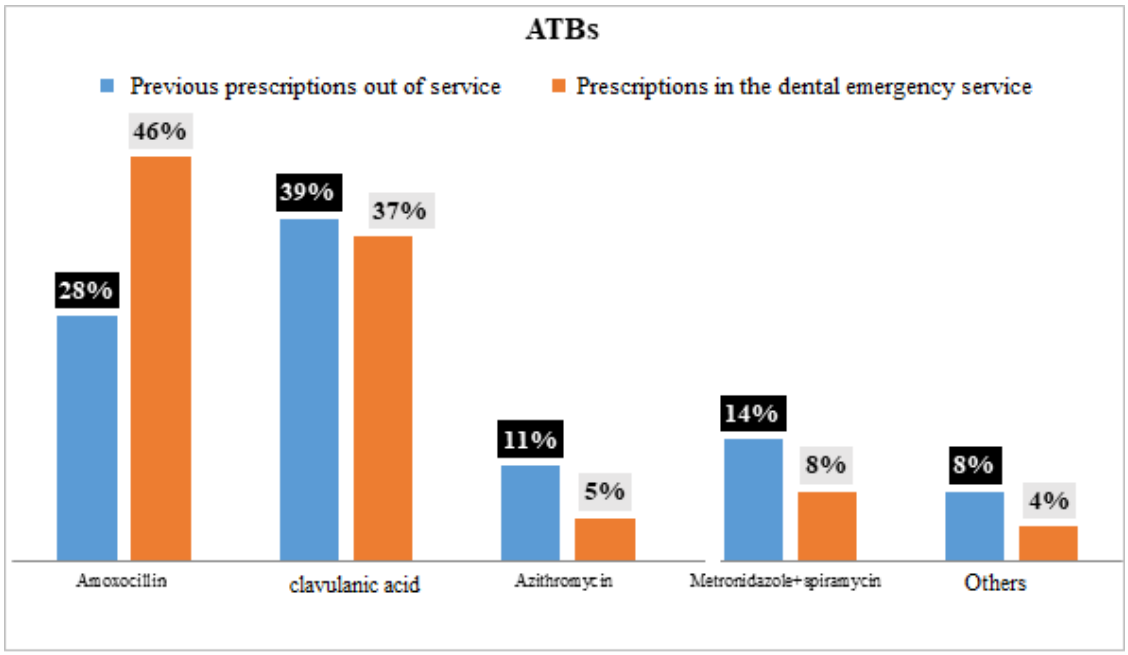

Figure 6: The most prescribed ATBs

3.2.1.2 The most prescribed analgesics

Paracetamol and the combination paracetamol + codeine are the most prescribed analgesics both in the dental emergency department and outside the department. The « other » section incorporated tramadol or the paracetamol + tramadol combination. **(Fig 7)**

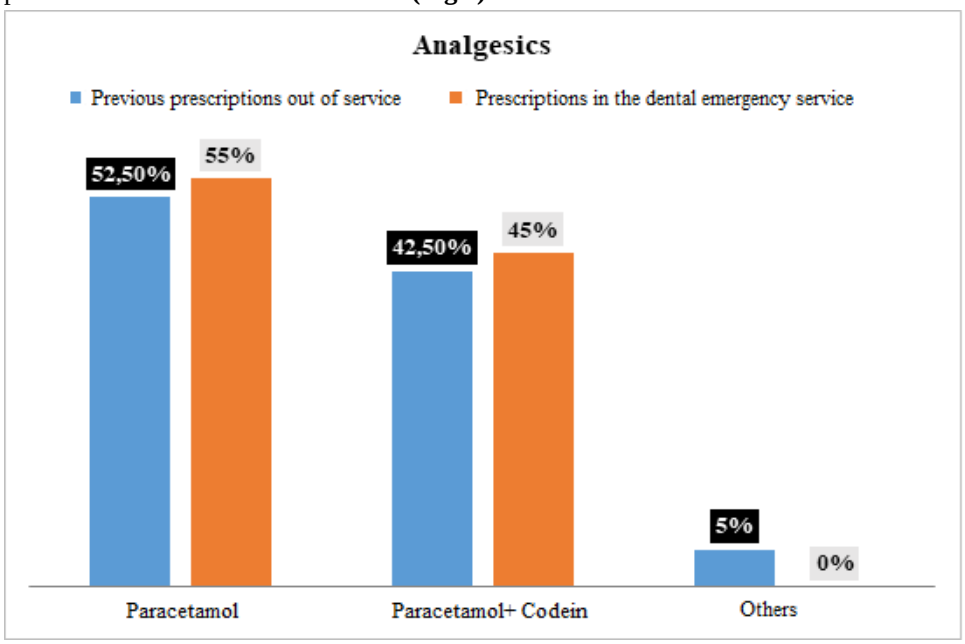

Figure 7:The most prescribed analgesics

3.2.1.3 The most prescribed NSAIDs

Tiaprofenic acid is the only NSAID prescribed in all patients (100%) in the dental emergency department, while in out-of-service prescriptions; we find at most Tiaprofenic acid, diclofenac and ibuprofen with percentages 50%, 23%, and 12% respectively. **(Fig 8)**

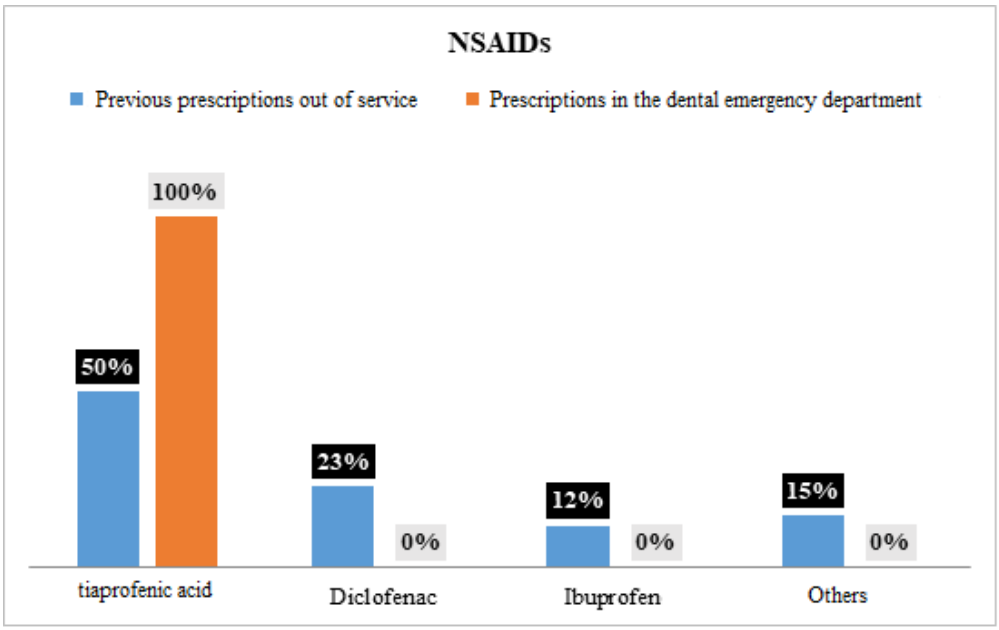

Figure 8:The most prescribed NSAIDs

3.2.1.4 Themost prescribed steroidal anti-inflammatory

Prednisolone is the only corticosteroid molecule used in oral diseases by dentists in the dental emergency department as well as in other healthcare establishments.

3.2.2 Medical prescription according to age :

We note that all the studied age groups consume ATB and analgesics, while mainly young subjects consume NSAIDs and corticosteroids. **(Table I)**

Table I: Medical Prescription According To Age

	Middle age (years)	**Standard Deviation**
Average age of patients who consume more ATB	34.42	13.94
Average age of patients who consume more Analgesics	36.49	14.09
Average age of patients who consume more *NSAIDs*	24.73	12.75
Average age of patients who consume more *steroidal anti-inflammatory*	25	10.07

3.2.3 The proportion of medical prescriptions according to the chief complaint :

- 82% of patients who consult for pain receive a medical prescription.
- 68% of consultations for an infection result in a medical prescription.
- 81% of patients who consult for a trauma end up with a medical prescription **(Fig 9).**

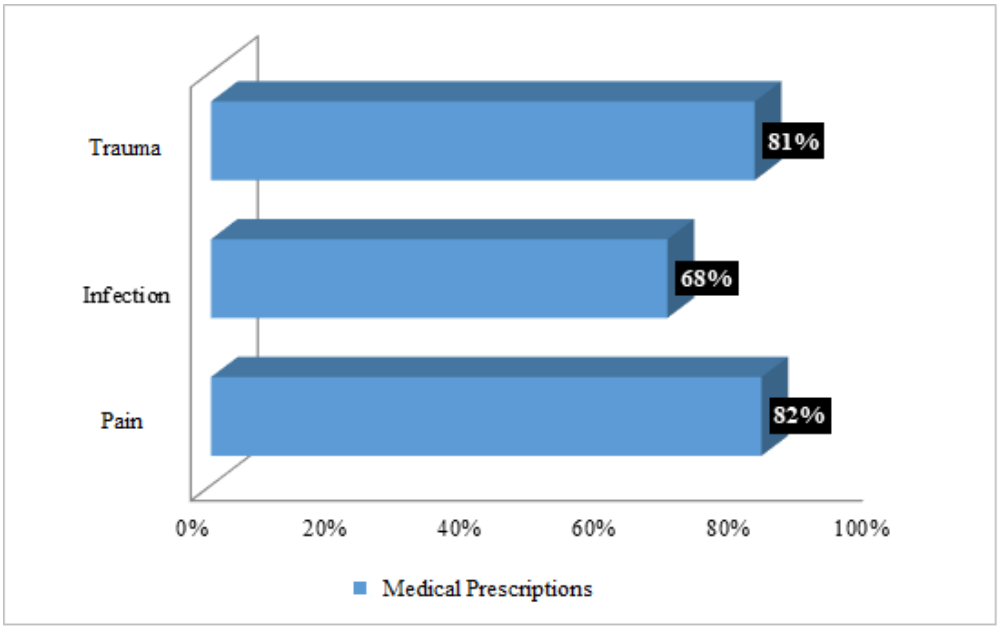

Figure 9: Percentage of medical prescriptions according to the chief complaint

3.2.4 The conformity of the medical prescription

Among the 192 drug prescriptions, we found 14 non-compliant prescriptions (7.29%), including 3 prescriptions (21.42%), that was a contraindication.

Non-compliance due to a contraindicated interaction between prescribed drugs is absent in this study, As well as non-compliance due to an interaction between prescribed drugs and drugs taken by the patient for other pathologies which represents 78.57 % (n = 11) in total, including 4 cases (36.37%) of not recommended drug interactions, 2 cases (18.17%) of drug interactions requiring precautions for use, and 5 cases (45.47%) drug interactions to be considered. **(Table II)**

Table II: The Different Types of Non-compliance with Medical Prescriptions

Type of non-compliance	Drug	**Mechanism And consequence of interaction**	**Count**
Contraindications	- NSAIDs in patients with renal insufficiency	- Risk of acute RI	2
	- Amoxicillin in an allergic to penicillin	- Risk of rash (little known mechanism)	1
Contraindicated drug interaction	- Absent		0
Not recommended drug interaction	- Diclofenac + acenocoumarol	- Displacement of the AVK from its site of action: increased hemorrhagic risk	1
	- Amoxicillin + allopurinol	- Increased risk of rash (little known mechanism)	2
	- Azithromycin + colchicine	- Azithromycin decreases the metabolism of colchicine (with a narrow	1

		therapeutic margin): risk of overdose of colchicine	
Drug interactionsrequiring precautions for use	- Metronidazole + acenocoumarol	- Increase in the effect of the oral anticoagulant: hemorrhagic risk by reduction of its hepatic metabolism.	1
	- Acetylsalicylic acid + glimepiride	- Risk of hypoglycemia by displacement of their plasma binding sites by the NSAID	1
Drug interactions to be considered	- Antacid with anti-inflammatory drugs (AI)	- Decrease in the effect of AI	5

3.3 SELF-MEDICATION

3.3.1 Self-medication in terms of numbers

We noted a total of 19 International Nonproprietary Names (INN) which were dispensed to 43.5% (or 87 patients) of patients without medical opinion during our study, i.e. 1.27 ± 0.73 drugs per patient with extremes ranging from 1 to 4. **(Table III)**

Table III: Use of Self-medication

SELF-MEDICATION	
Total number of self-medicated patients	**87 (43,5%)[1]**
Number of used INN	**19**
Number of therapeutic classes used	**4**
Number of drugs per patient ± SD[7]	**1,27±0,73**
Number of cases of non-compliance	**24 (27,58%)[2]**
Number of non-conformities due to contraindications (%)	**2 (8,33%)[3]**
Number of non-conformities due to precaution of use (%)	**6 (25%)[4]**
Total number of drug interactions in the study population	**16 66,66%)[5]**
- Drug interactions contraindicated	**1 (6,25)[6]**
-Not recommended association (%)	**5 (31,25%)[6]**
-Precaution for use (%)	**3 (18,75%)[6]**
-To be considered (%)	**7 (43,75%)[6]**

(1) Percentage of patients with self-medication / total number of patients (n = 200)
(2) Percentage of non-compliance / total number of self-medicated patients
(3) Percentage of non-compliance due to a contraindication / number of cases of non-compliance
(4) Percentage of non-compliance due to precaution of use / number of cases of non-compliance
(5) Percentage of non-compliance due to drug interaction / number of non-compliance cases

(6) Percentage of "Contraindicated", "Not recommended", "Precaution for use" or "To be considered" constraint level interactions / total number of drug interactions in the population studied

(7) Standard Deviation

3.3.2 Reasons for self-medication in recruited patients:

The reason most cited by patients to justify self-medication was primarily related to the lack of financial resources with a percentage of 35%. **(Fig 10)**

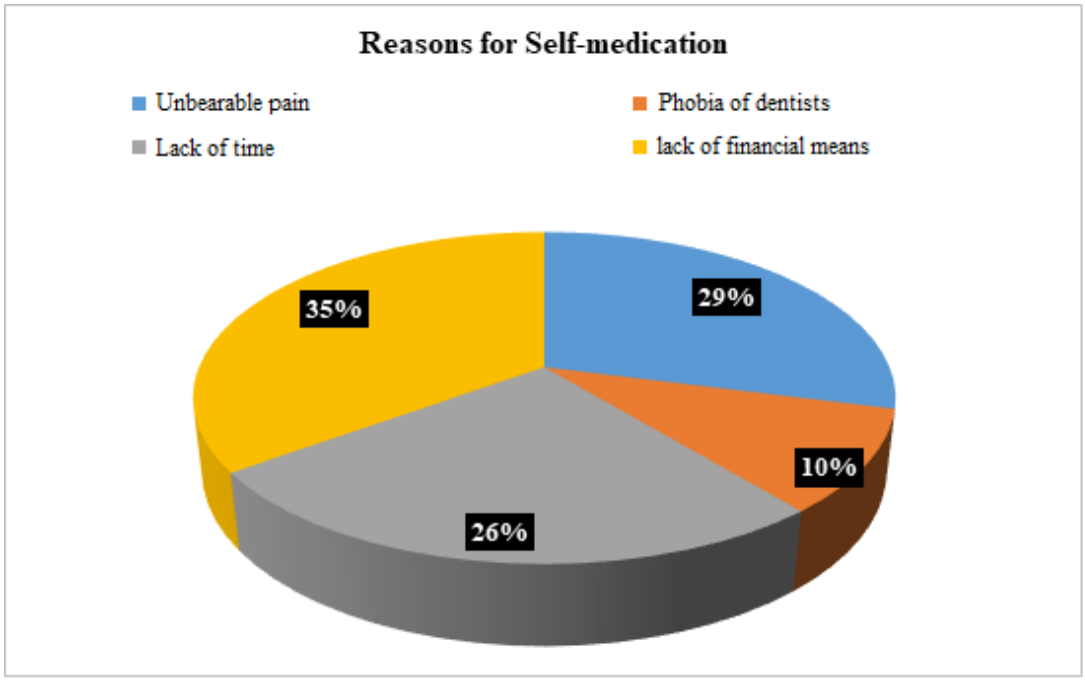

Figure 10: Justifications for self-medication

3.3.3 Self-medication according to age and sex :

3.3.3.1 Self-medication and age :

We note that the age group (15 to 25 years old) used self-medication the most compared to other age groups, this consumption decreases with age **(Fig 11)**

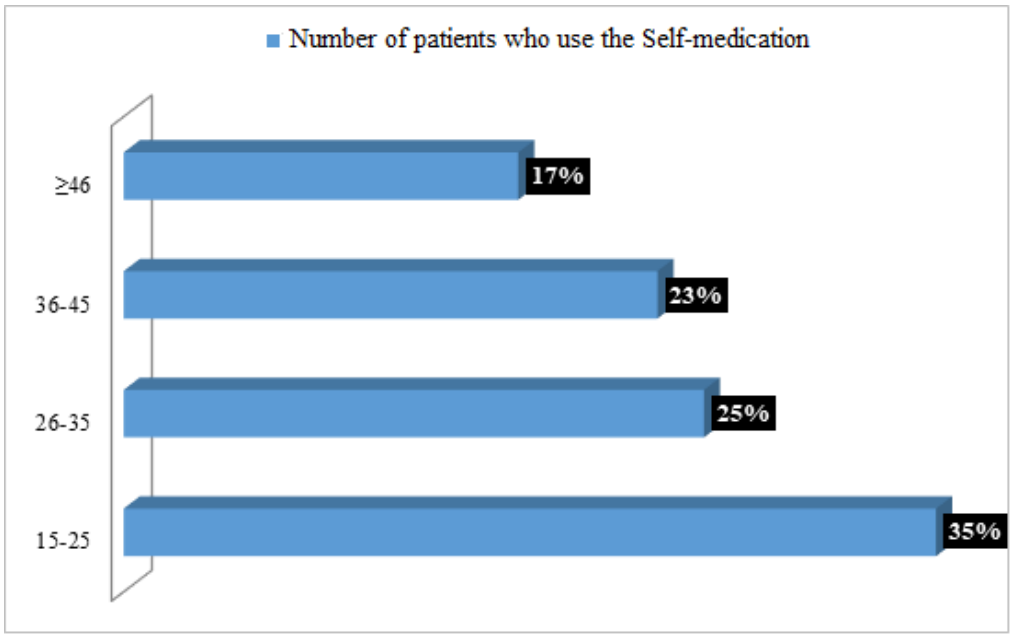

Figure 11: Self-medication and age

3.3.3.2 Self-medication and sex :

We note that women use self-medication more than men with a percentage of 61%. **(Fig 12)**

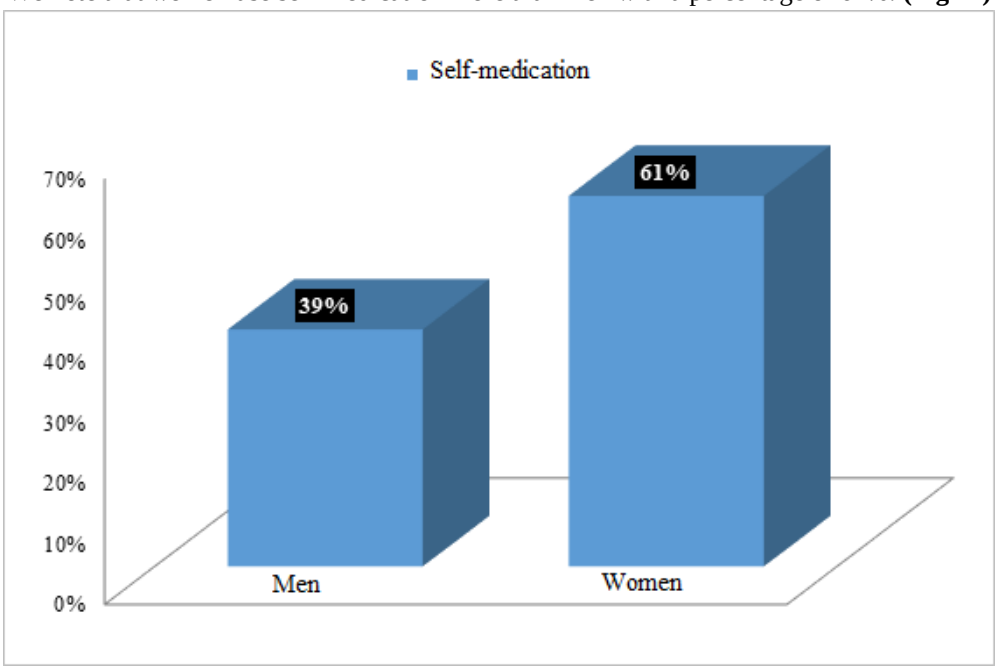

Figure 12: Self-medication and sex

3.3.4 The most frequently used therapeutic classes by self-medication:

Patients used self-medication using NSAIDs in 46% of cases, analgesics in 31% of cases, ATBs in 20% of cases, then mouthwash (MW) in 3% of cases. Corticosteroids or SAIDs were not consumed by self-medication **(Fig 13).**

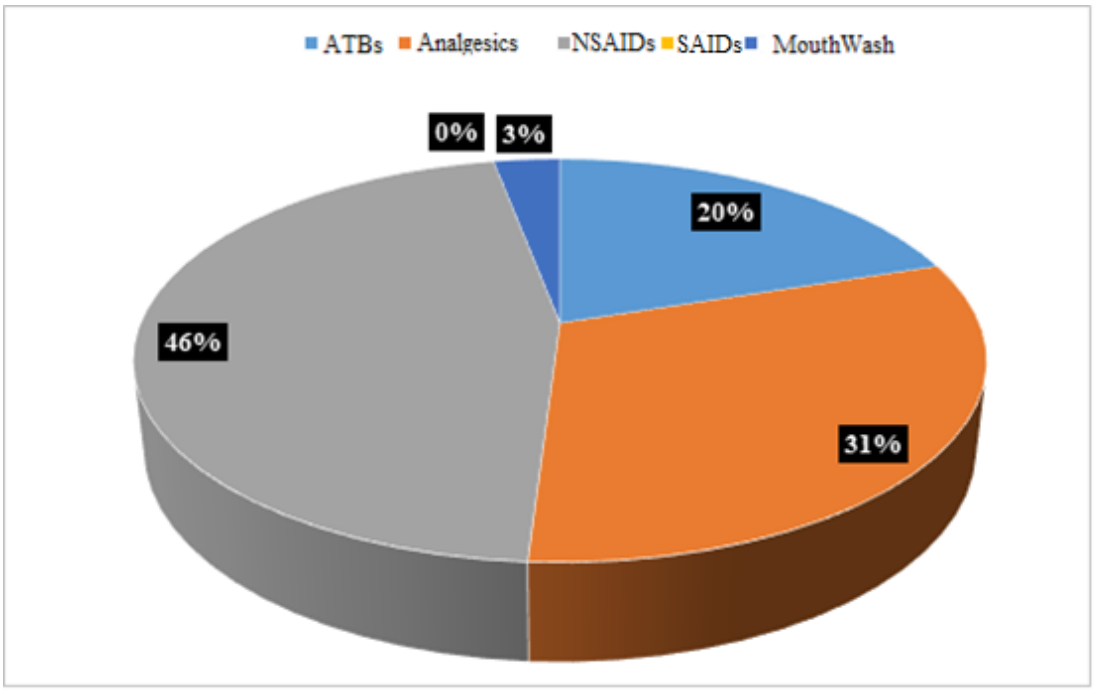

Figure 13 : The therapeutic classes consumed by the population studied by self-medication

3.3.4.1 The ATBs used the most by self-medication

The ATB used the most by self-medication is amoxicillin, 68% of the cases, followed by the metronidazole + Spiramycin combination in 19% of the cases. The other section composed of metronidazole alone and the amoxicillin + clavulanic acid combination **(Fig 14).**

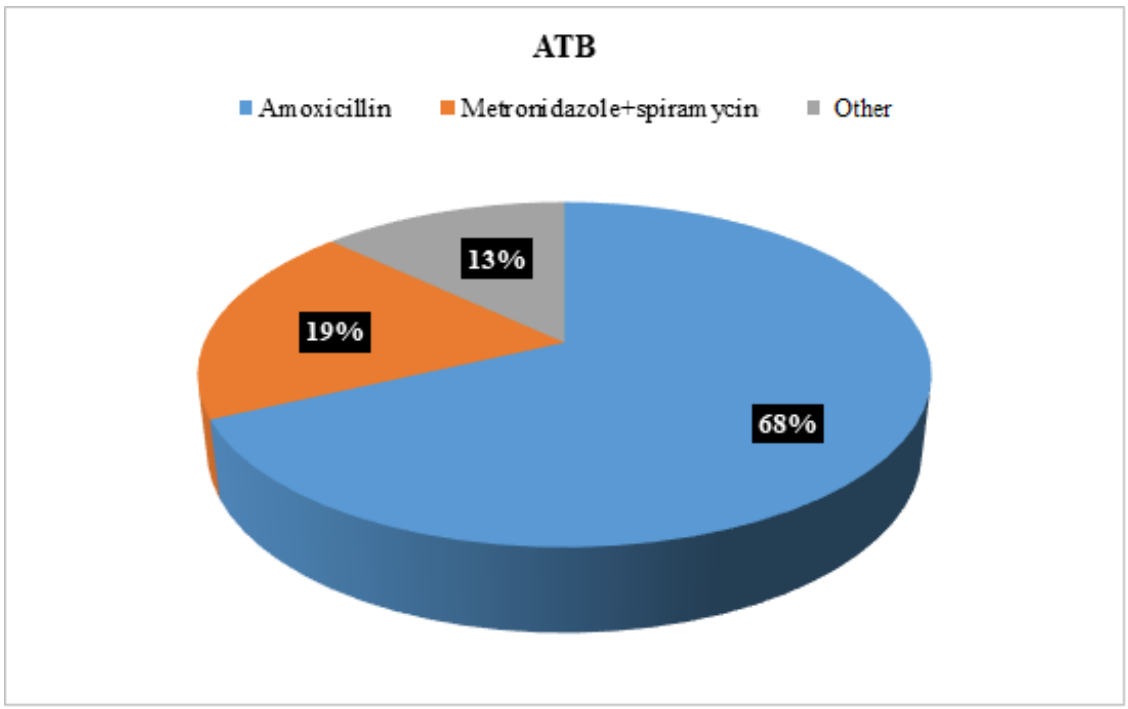

Figure 14: The ATBs used the most by self-medication

3.3.4.2 The most used analgesics by self-medication

Paracetamol remains the most used analgesic by the population surveyed, i.e. 94% of cases **(Fig 15).**

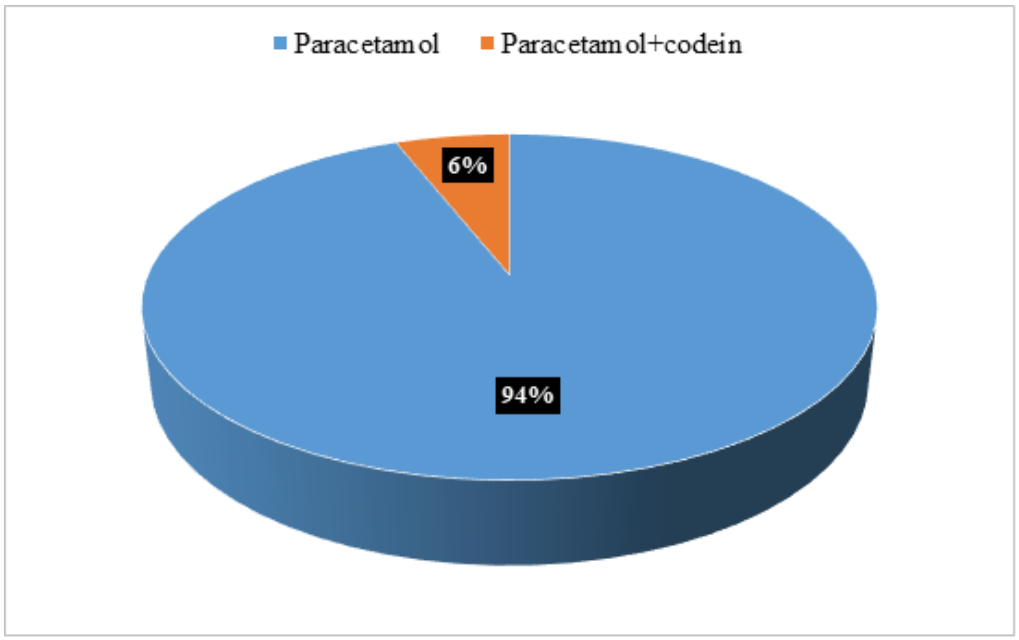

Figure 15: The analgesics used the most by self-medication

3.3.4.3 The most used NSAIDs by self-medication:

Tiaprofenic acid (Surgam®) is the most used NSAID for self-medication in 53% of cases, followed by diclofenac in 22% of cases, and Fenoprofenin 16% of cases. The « other » section incorporated ibuprofen, acetylsalicylic acid, Ketoprofen, Niflumicacid and meloxicam **(Fig 16).**

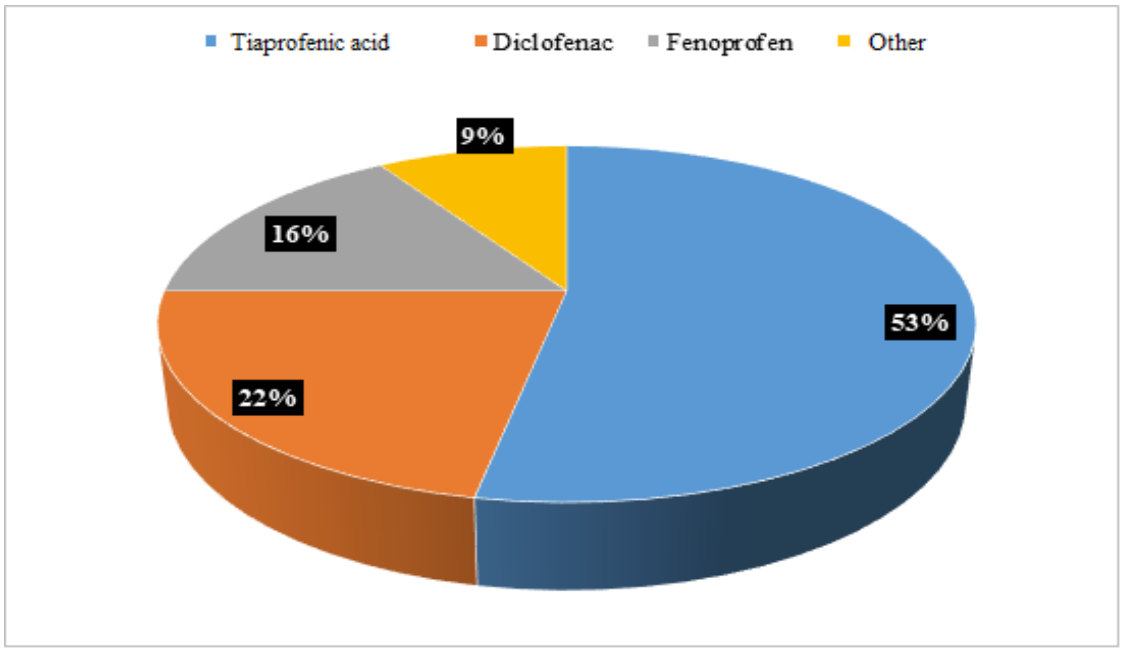

Figure 16: The NSAIDs used the most by self-medication

3.3.5- Medicines used by self-medication according to age:

As for drug prescriptions, we note a consumption of ATB and analgesics by all age groups, while mainly young subjects **(Table IV)** consume NSAIDs**.**

Table IV: Self-medication According To Age.

	Average age	SD*
Average age of patients who consume more ATBs	34.42	13.94
Average age of patients who use more analgesics	36.49	14.09
Average age of patients who use more NSAIDs	24.73	12.75

**SD: standard deviation*

3.3.6 The percentage of patients self-medicated according to the chief complaint:

- 44% of patients who consult for pain have already used the self-medication.
- 45% of patients who consult for an abscess have used the self-medication.
- 11% of patients who consult for a trauma have used the self-medication **(Fig 17)**.

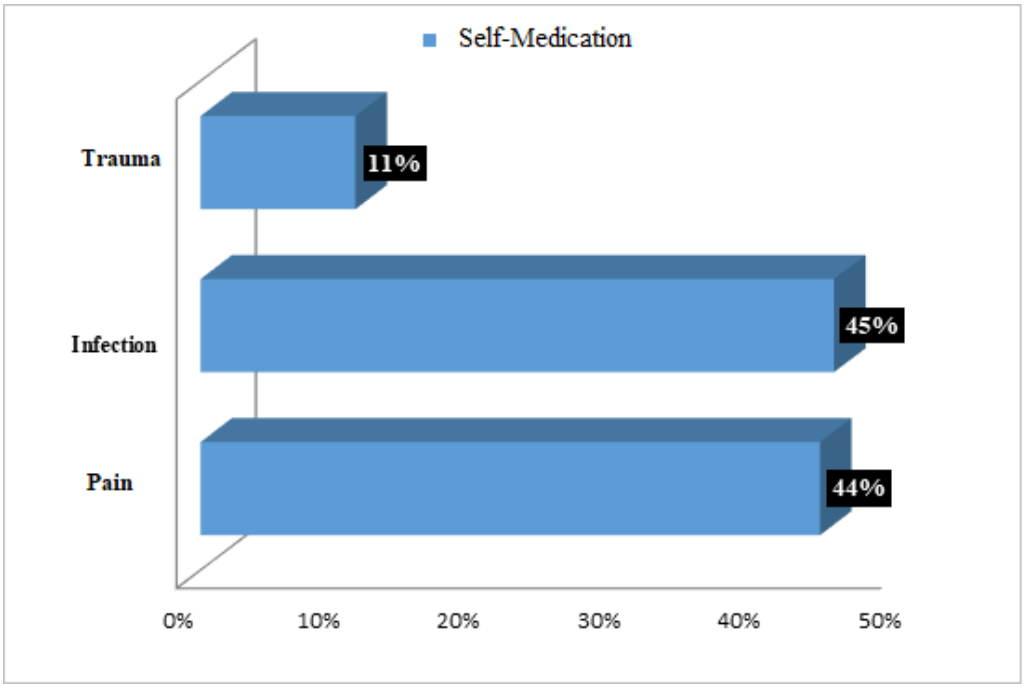

Figure 17: The percentage of patients self-medicated according to the chief complaint

3.3.7 The conformity of drugs consumed by self-medication:

In regards to drugs consumed by self-medication, there are 24 cases (27.58%) of non-compliance, including 2 cases (8.33%) of contraindication, 6 cases (25%) requiring precautions for use , and 16 cases of drug interactions (66.66%): 1 case (6.25%) of contraindicated drug interactions, 5 cases (31.25%) of not recommended drug interactions, 3 cases (18, 75%) of drug interactions requiring precautions for use, and 7 cases (43.75%) of drug interactions to be considered. **(Table V)**

Table V: The Different Types of Non-compliance in Self-medicated Patients

Type of non-compliance	Drug	Interaction consequences	Count
Contraindications	- Codeine in an asthmatic patient	− Increased risk of an asthma attack	1
	-NSAIDs in patients with renal insufficiency	− Risk of acute RI	1
Precautions for use	- Use of ATB in non-bacterial pathology	− Emergence of bacterial resistance	6
Contraindicated drug interaction	− Aspirin + acenocoumarol	− Increased risk of hemorrhage	1
not recommended drug interaction	-Tiaprofenic acid + diclofenac	-Increased hemorrhagic and digestive risk	2
	-Tiaprofenic acid + ibuprofen		1
	-Association of 2 diclofenacs		1
	-Tiaprofenic acid + acenocoumarol	-Increased hemorrhagic risk	1
drug interactions *requiring precautions for use*	-Corticosteroid + diclofenac	-Increased risk of ulceration and digestive hemorrhage	1
	-Tiaprofenic acid + gliclazide	-Risk of hypoglycemia by displacement of their plasma binding sites by the NSAID	1
	-Ibuprofen + furosemide (Lasilix)	-Risk of acute RI	1
drug interactions *to be considered*	− NSAIDs + antacids	− Decrease in the NSAIDs' effect	7

3.4 COMPLIANCE WITH PRESCRIBED TREATMENT :

3.4.1 The compliance with prescribed treatments:

Patients who do not follow their treatments up represent 15% (30 patients out of 200); the justification for their non-compliance is detailed in the figure below **(Fig 18).**

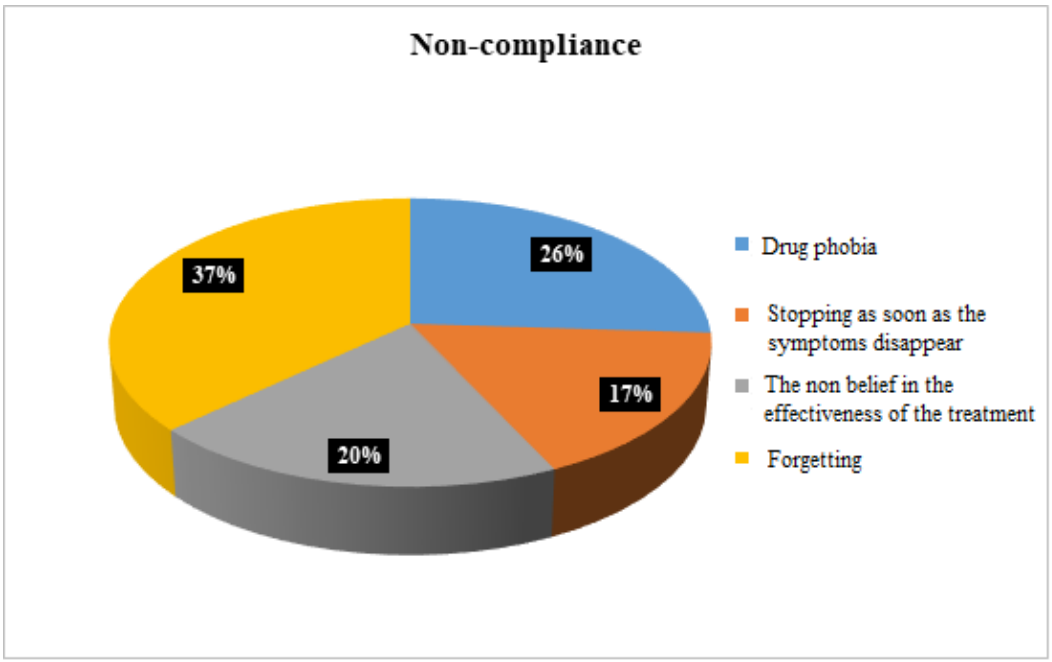

Figure 18: Reasons for non-compliance with prescribed treatments by patients followed in the dental emergency services

The most frequently cited reasons for non-compliance with treatments were:

- Forgetting in 37% of cases;
- Drug phobia in 26% of cases;
- The non-belief in the effectiveness of the treatment in 20% of the cases;
- Stopping as soon as the symptoms disappear (disappearance of pain or abscess, etc.) in 17% of cases.

3.4.2 The non-compliance by sex

We note that women do not respect the follow-up of their treatment with a percentage of 63% **(Fig 19).**

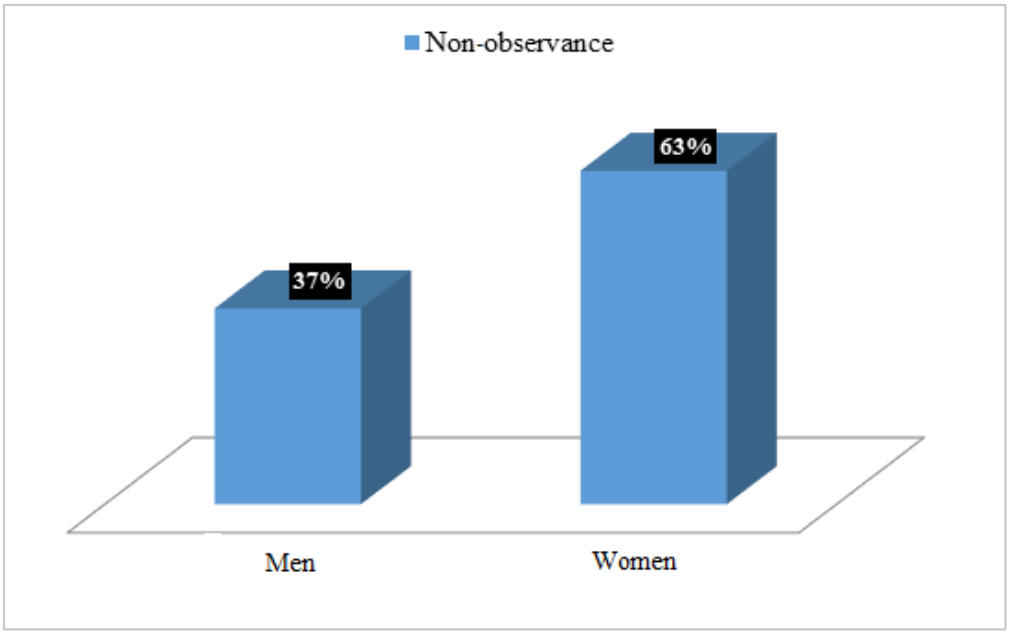

Figure 19: Non-compliance with prescribed treatmentsby gender.

IV. Discussion

During the two-month period, we were able to have a sample of 200 patients who had real dental emergencies, and whose management was done at SCUD, of which 61.5% (i.e. 123 patients) were female, while other studies have noted a male predominance (54.1%, 52% and 53%) [4, 5, 6]

The age group most represented in our study was that of 15-35 year olds (53%), which agrees with the results of similar studies [5, 6, 7].

Regarding the state of health of patients consulting the dental emergency service, we noted a rate of 31% of patients with a chronic disease, which is in agreement with other similar studies such as that led at CHU [University Hospital Center] Metropole Savoie (France 2015) (27.7%), with certain dissimilarities concerning the type of chronic diseases present, the comparison of which is shown in the following table **(Table VI):**

Table VI: Comparative Table ofthe Various Chronic Pathologies Found In Patients [4]:

Study, Year	Country	Type of the study	Number of patients	Chronic Pathology (%)
Department of oral surgery and odontology, Metropole Savoie hospital center; France 2015 [4]	France	Retrospective study	942	- Cardiopulmonary pathologies (8.6%) - Polymedicated patients (8.2%) - Neuropsychiatric pathologies (7.7%) - Endocrine pathologies (1.6%) - Infectious pathologies (0.8%) - Gastrointestinal pathologies (0.3%) - Other pathologies (0.4%)
Dental Consultations and Emergencies Service (SCUD) of the Dental Consultation and Treatment Center (CCTD) of the Ibn Rochd University Hospital in Casablanca 2018 (Our study)	Morocco	2-month prospective observational monocentric study.	200	- Diabetes (24%) - Cardiovascular diseases (21%) - Asthma (15%) - Rheumatic disease (12%) - Neuropsychiatric disorder (11%) - Renal insufficiency (11%)

Analysis of the age distribution of patients with chronic conditions showed that diabetes, cardiovascular diseases and renal insufficiency were higher in patients over 46 years of age, which is completely normal since age is a risk factor for these pathologies.

Thanks to the diagnosis, the degree of severity of the emergencies was determined and a specific treatment could be established. However, the patients' chief complaints were not always the same, thus, the odontological

emergencies managed in the hospital setting were decreasingly of algic, infectious, traumatic and then hemorrhagic concerns.

Several more specific studies conducted in dental emergencies around the world have found results that are different from ours **(Table VII)** [4, 8, 9]:

Table VII: Comparative table of the various chief complaints recorded in dental emergencies [4, 8, 9]

Study, Year	Country	Type of the study	Number of patients	Chief Complaint (%)
Department of oral surgery and odontology, Metropole Savoie hospital center; France 2015 [4]	France	Retrospective study	942	- Pain : 27,2% - Infection : 39,2% - Trauma : 18% - Hemorrhage : 1,8% - Others : 13,1%
Dental emergency department at Nantes University Hospital 2014[8]	France	Cross-sectional descriptive epidemiological study	200	- Pain : 70,5% - Infection : 2% - Trauma : 2,5% - Others : 25%
Burkina Faso Oral Care Center 2012[9]	Burkina Faso	Retrospective study	14591	- Pain : 69,9% - Infection : 14,10% - Trauma : 3,5% - Others : 12,5%
Dental Consultations and Emergencies Service (SCUD) of the Dental Consultation and Treatment Center (CCTD) of the Ibn Rochd University Hospital in Casablanca 2018 (Our study)	Morocco	2-month prospective observational monocentric study.	200	- Pain : 62,5% - Infection : 19 % - Trauma : 18% - Hemorrhage : 0,5%

4.1 Medical Prescription:

Among the 200 patients surveyed, 192 had a drug prescription, of which 127 prescriptions were outside the Dental Emergency Department, and 65 prescriptions were filled at the Dental Emergency Department. In

addition, it was found that patients consumed an average of 2.32 ± 1.25 drug specialties, a median of 2 drugs per prescription per patient, with 20 prescribed INNs.

The therapeutic classes most frequently prescribed by dentists in the dental emergency department were antibiotics (38%), analgesics (37%), NSAIDs (3%), corticosteroids (10%) and antiseptics as a mouthwash (12%).

These results seem to be different compared to other studies; one was carried out in France, in the Loir region, the other was carried out at the University Hospital Center of odontostomatology of Bamako in Mali, as well as another study realized at the dental school in south of Brazil. [10, 11, 12] **(TableVIII)**

Table VIII: The different drugs prescribed by dentists [10, 11, 12]

Study type	Regional retrospective descriptive observational epidemiological study.	Cross-sectional prospective study of prescriptions issued to patients.	Retrospective cross-sectional study	Our study: Prospective observational monocentric study.
location and Year	The Loir region, France; 2013	The Odonto-Stomatology University Hospital in Bamako (Mali); 2017	Emergency department of the dental school in south of Brazil ; 2009-2011	Dental Consultations and Emergencies Service (SCUD) of the Dental Consultation and Treatment Center (CCTD) of the Ibn Rochd University Hospital in Casablanca, Morocco 2018
Study description	Study of all the drugs prescribed by dental surgeons.	Evaluation of drug prescriptions at the Odonto-Stomatology University Hospital	Study of patient self-medication and medication prescription in the emergency department.	Study of the consumption of medicines by patients consulting the Dental Emergency Service
Results	**ATBs: 55.5% of prescriptions** - Amoxicillin: 19.8% - Amoxicillin + Clavulanic acid: 12.1% - Macrolide: 12.6% - Tetracycline: 5.8% - Spiramycin + metronidazole: 2.2% **NSAIDs and analgesics: 60.6% of prescriptions** - Ibuprofen: 20% - Ketoprofen: 14.6% - Diclofenac: 9.4% - Paracetamol: 32.1% - Tramadol: 20.8% - Paracetamol + codeine: 5.8% - Strong opioids: 17.6% **Corticosteroids: 76.4% of prescriptions** - Prednisone: 30.1% - Prednisolone: 30.1% - Methylprednisolone: 13%	**ATBs: 33.24% of prescriptions** - Metronidazole: 50.62% - Amoxicillin: 49.94% - Amoxicillin + Clavulanic acid: 35.98% **Analgesics: 27.35% of prescriptions** - Paracetamol: 78.75% - Tramadol: 15.03% **NSAIDs: 4.49% of prescriptions** - Ibuprofen: 49.57% - Diclofenac: 18.48% **Corticosteroids 0.22% of prescriptions** **Antiseptics: 16.37% of prescriptions**	**ATBs: 57.8% of prescriptions** **Analgesics: 28.07% of prescriptions** **NSAIDs: 7.04% of prescriptions**	**ATBs: 38% of prescriptions** - Amoxicillin: 46% - Amoxicillin + Clavulanic acid: 37% - Metronidazole + Spiramycin: 8% - Azithromycin: 5% **Analgesics: 37% of prescriptions** - Paracetamol: 55% - Paracetamol + codeine: 45% **NSAIDs: 3% of prescriptions** - Tiaprofenic acid: 100% **Corticosteroids: 10% of prescriptions** - Prednisolone: 100% **Antiseptics: 12% of prescriptions**

Table IX: Comparative table of the different percentages found according to the Chief Complaint [6]

Study type	**Our study**: 2--month prospective observational monocentric study.	**Study in the Brest University Hospital Center, France** Retrospective cross-sectional epidemiological study of 12 months from March 1, 2010 to February 28, 2011.
Location	Dental Consultations and Emergencies Service (SCUD) of the Dental Consultation and Treatment Center (CCTD) of the Ibn Rochd University Hospital in Casablanca	The Brest University Hospital Center, France
Number of patients interviewed	200	4647 patients
% of drug prescriptions	38%	43%
Chief Complaint	- Pain (82%) - Infection (68%) - Trauma (81%)	- Pain (63%) - Infection (94%) - Trauma (21%)

Depending on the chief complaint; 82% of patients who consult for pain, 68% for infection and 81% for trauma receive a medical prescription. Compared with a study carried out in the emergency service of the dental department of the Brest University Hospital Center, France [6] **(Table IX):**

Regarding the prescription of drugs according to age in our study, we note that analgesics and ATB are prescribed in all age groups, while NSAIDs and corticosteroids are generally prescribed for young patients. Depending on the sex, there is no difference in medical prescriptions between men and women.

In our survey and referring to Vidal, 7.29% (n = 14) of the patients had at least one non-compliant prescription. It was an exclusively contraindication in 21.42% of the cases (n = 3). Non-compliance due to a contraindicated interaction among prescribed drugs, was absent in this study.

Non-compliance due to an interaction between prescribed drugs and drugs consumed for other chronic conditions represents 78.57% (n = 11). In this last, we have found 36.37% of not recommended drug interactions, 18.17% of drug interactions requiring precautions for use, and 45.47% of drug interactions to be considered. Another study on the evaluation of drug prescriptions at the Odonto-Stomatology University Hospital in Bamako (Mali) has found a single contraindication, which was the combination of 2 beta-lactams (penicillin + cephalosporin) [11].

4.2 Self-medication :

This study made it possible to evaluate the use of medicinal substances without medical prescription in patients consulting the Dental Consultations and Emergency Services (SCUD). We know very well that self-medication is a delicate public health problem, it is a phenomenon encountered in both developing and developed countries [13]. This disparity in prevalence could depend on the geographic, socio-demographic, socio-economic, socio-cultural situation, the level of education and / or development and the level of awareness of the population of different countries.

The present study carried out at the SCUD of the Ibn Rochd University Hospital in Casablanca has shown that 43.5% of patients used self-medication. This rate is relatively similar to that found in a study realized in Abidjan in Ivory Coast (37.3%) [14]. However, a higher prevalence of self-medication (72.6%) was reported in Brazil by a study carried out in the dental emergency department by De Paula [15]. The disparity in the organization of the health system in these countries associated with socio-cultural habits could justify these very variable rates. Indeed, our study established that self-medication was justified, in the majority of cases, by a lack of financial means (35%), a lack of time (26%), a phobia of dentists (10%) and a pain described as unbearable (29%). A study conducted in Senegal in Dakar [16] showed that self-medication was mainly justified by the "trivialization" of oral diseases, another study carried out in the region of Abidjan in ivory coast has shown that self-medication is justified by unbearable pain (32.05%), lack of financial means (19.23%), lack of time (17.3%), social habit (12.82%), and fear of the dentist (11.54%) [14]. Another study carried out in Burkina Faso in Ouagadougou established that 30.4% of patients used self-medication and that among the reasons for self-medication, there was social habit in 7.9% of cases, the lack of the time in 7.9% of cases and fear of the dentist in 10.5% of the cases [17].
Thus, we noted 19 INNs used. We also found that patients consumed an average of 1.27 ± 0.73 specialties, a median of 1 drug per patient.

It emerges from our study that the most represented group was that of 15-25 year-olds (35% of patients with self-medication), with a female predominance (61%), for a sex ratio of 0.63. Indeed, a recent publication on self-medication in the region of Rabat in Morocco had also shown a female predominance (64.3%) and the most incriminated age group was 20-60 years (68%) [18]. The study by De-Paula [15] in Brazil also reported a female predominance (68.6%) of self-medication during oral diseases and also showed that the age group of 18-59 years was the most represented (89.2%). Worldwide, 70% (1.3 billion) of people living in poverty are women. In addition, illiteracy affects twice as many women as men (600 against 300 million) and women have considerably limited access than men to health care, which may explain this predominance of women. [19].

Endodontic emergencies were the first cause of emergency consultation and self-medication in the emergency department in this study. Pain and oral abscess were the main reasons for self-medication, with rates of 44% and 45% respectively, while trauma accounted for 11% of the causes of self-medication. The same study carried out in Ouagadougou in Burkina Faso showed that the patients were self-medicated in 30% of the cases for pain, 56% for infections and 2.7% for trauma [17]. Another study carried out in the dental emergency service in Brazil showed that pulpitis and periapical abscesses are the main reasons for self-medication (86.8%) [20].

The therapeutic classes most used by patients were: NSAIDs (46%), analgesics (31%), ATB (20%) and antiseptics (3%). Corticosteroids were not used by self-medication. The high prevalence of these group of drugs is related to the main reason for consultation (pain) and the fact that these drugs are available over-the-counter. The most commonly used medication by patients as analgesics was paracetamol (94%) followed by the combination paracetamol + codeine (6%). The most commonly used ATBs were amoxicillin (68%), followed by the combination of Spiramycin + metronidazole (19%). The most commonly used NSAIDs were Tiaprofenic acid (53%), followed by diclofenac (22%) and Fenoprofen(16%). While a study carried out in the dental emergency service in Rio De Sul in Brazil showed that ATBs (14.3%), paracetamol (6.2%), amoxicillin (18%), diclofenac (10.4%), ibuprofen (9.7%), and non-specific NSAIDs (3.5%) are the most affected by self-medication during oral diseases [13]. Another study carried out in Burkina Faso showed that the drugs most used by patients by self-medication were: paracetamol (21.1%), paracetamol + ibuprofen (15.8%), paracetamol

+ diclofenac (7.9 %), amoxicillin (15.8%), amoxicillin + diclofenac (10.5%), ibuprofen (10.5%) and paracetamol + amoxicillin (5.3%) [17].

Regarding the use of drugs in self-medication according to age, we noted thatanalgesics and ATB are used by all age groups, while NSAIDs are generallyused in young subjects, seen the undesirable effects of this one, especially in theelderly subjects.

V. Conclusion

At the end of this study we confirmed that the patients having benefited from a care in the Service of the Dental Emergencies presented various oral pathologies of which the most frequently met are the dental pains, the infectious emergencies and the oral traumas.
The most prescribed and used by self-medication therapeutic classes are analgesics, ATBs, NSAIDs, corticosteroids and antiseptics as Mouthwashes.

Non-compliant prescriptions are less frequent since 7.29% of patients are concerned in our sample, without taking into consideration the compliance of the dosage and indications.
In addition, the study of self-medication confirms the great recourse of this particular population, and more generally of our society to this behavior, since 43.5% of the patients were concerned due to lack of financial means in the majority of the cases. . This self-medication increases the cases of non-compliance, which represent 27.58%.

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