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Research Article

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Pharmaceutical Advices Provided by Tunisian Pharmacists to Patients Experiencing Oral Pain

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Abstract

Background: Pharmacy is frequently visited due to its proximity and ease of access. Nevertheless, Pharmacists may not be available to provide adequate pharmaceutical advices because of the important number of patients received daily and sometimes a lack of knowledge and communication with dentists. The purpose of this study was to assess the pharmaceutical advices provided by pharmacists to patients experiencing oral pain.

Methods: *This was a cross-sectional pilot study conducted on pharmacies located in the Center of Tunisia. A self-administrated questionnaire was distributed to the pharmacists. It contained sociodemographic data and questions about the frequency of receiving patients complaining about oral pain, the described pain and the provided advices. Data were analyzed on SPSS software.*

Results: *A total of 80 pharmacists participated to the survey. The study showed that the majority of them received patients seeking for advice to relief their oral pain (99%). Regarding the behavior of the pharmacists, 44% of them recommended medicines and a dentist visit, 24% recommended only medicines, 20% recommended a dentist's visit only and 12% medicines and a physician's visit. The study showed that antibiotics were recommended by 52% of the pharmacists, anti-inflammatory drugs by 66%, analgesics by 60% and mouthrinces by 53% of the pharmacists.*

Conclusion: *This study showed that pharmacists may play an important role in the management of oral pain. However, some pitfalls were noticed and need to be avoided by collaboration between health decision makers, dentists and pharmacists for an adequate management of oral emergencies.*

Keywords: Pharmaceutical Services, Oral Pain, Pharmacist

Abbreviations

AID: Anti-Inflammatory Drug
NSAIDs: Non-Steroidal Anti-Inflammatory Drugs

Introduction

Oral emergencies are numerous and polymorph. They require rapid and specialized care provided by a dentist. However, he is not always consulted as a first-line treatment. Sometimes, patients orientate themselves to other means: self-medication, or other health structures (general practitioners, medical emergencies and pharmacies) [1].

Self-medication, is defined by the World Health Organization as the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a prescribed drug for chronic or recurrent disease or symptoms [2].

Pharmacists are frequently consulted by patients because of their proximity and ease of access. They should have good knowledge in order to support the patient in both prevention and treatment of the main oral pathologies.

However, pharmacists may be unavailable to provide adequate advices because of the important number of patients received daily and sometimes the lack of personal knowledge and communication with dentists. Those constraints may be the cause of an inappropriate pharmaceutical advice to the patient's problem [3].

Few studies assessing the role of pharmacists in the management of dental emergencies are available in the literature [3, 4].

The present study aimed to investigate the pharmaceutical ad-

vices provided by pharmacists to patients experiencing oral pain, identify the difficulties in the management of such situations and check if their recommendations of pharmacists were adequate for the patients' problems.

Materials and Methods

This cross-sectional pilot study was conducted in the period from December 2021 to January 2022 among pharmacies located in the regions of the Tunisian Center: Monastir, Mahdia, Sousse, Kairouan and Kasserine.

Given the difficulty to have access to pharmacies that may be located in different cities or villages and far from each other, we preferred the quota method in the recruitment of pharmacies. Thus, pharmacies were randomly selected according to their proportions in each governorate. Eighty pharmacies in the governorates of Monastir, Mahdia, Sousse, Kairouan and Kasserine were targeted and the questionnaire was directly distributed to them.

Data were collected using a self-administered questionnaire inspired from the relevant literature, then transferred to the statistical database SPSS version 20.0 (trial version) for analysis [1, 5].

The questionnaire included sociodemographic data and questions about: the frequency of the patient's consultation, described pain, pain localization, provided advice: anti- inflammatory drugs (AIDs), analgesics or other (toothpaste, mouthwash), orientation to another health professional, the adequacy of the suggested medicines. There were two types of questions: closed (yes/no) and open questions.

The study aims were clearly explained to the pharmacists and we consider their responding to the survey as an informed consent. This study was approved by the Ethical Committee of the Dental Faculty.

Results

A total of 80 pharmacists participated in the survey with a 100% response rate. The majority of them were female (69 %). Most of the pharmacists declared that they received patients experiencing oral pain and asking for advice (99%). The frequency of receiving these patients in a week was "frequently" according to 57% of the pharmacists and "often" according to 43 % of them.

According to pharmacists, the described pain was related to the tooth, tooth and oral mucosa or gum or only to the oral mucosa in respectively, 55%, 43% and 2% of the cases.

They reported that oral pain was associated with other symptoms in 90%. The other 10% evoked isolated idiopathic pain. According to them, the associated symptoms were swelling (25%), asthenia (20%), association of both swelling and asthenia (45%) or other symptoms (10%) such as fever.

Regarding the behavior of the pharmacists, 44% recommended medicines and a visit to the dentist, 24% recommended only medicine, 20% recommended a dentist visit only and 13% recommended medicine and a physician visit.

The study showed that 80% of the pharmacists asked patients about self-medication. When asked about the recommended medication, antibiotics were recommended by 53% of the pharmacists, AIDs by 66%, and analgesics by 60% of them.

A variety of antibiotics molecules were recommended: Spiramycin/Metronidazole, Amoxicillin, Spiramycin, Amoxicillin/Clavulanic Acid association and Metronidazole. (Table 1)

Table 1: Frequency of antibiotics recommendation

The advised antibiotic	Percentage (%)
Spiramycin/metronidazole	23
Amoxicillin	5.7
Spiramycin	4.3
Amoxicillin/clavulanic acid	3.2
Metronidazole	1.4

Among AIDs, tiaprofenic acid was the most recommended molecule followed by ibuprofen which was recommended by 13% of the pharmacists. (Table 2)

Table 2: Frequency of antiinflammatory drugs recommendation

The recommended antiinflammatory drugs	Percentage (%)
Tiaprofenic acid	31
Ibuprofen	13
Ketoprofen	1.4
Piroxicam	1.4

Regarding analgesics, combination of paracetamol and codeine was recommended by 24,3 % of the participants and paracetamol by 17 % of them.

With regard to oral hygiene, 53% of the pharmacists recommended mouthrinces. Thirty-three percent recommended tooth paste and a tooth brush and only 8.5% recommended tooth paste.

In some cases, 25% of the Pharmacists recommended homeopathic medicine. Most of the participants declared that patients

returned to the pharmacy (90%) for the following reasons: to buy drugs prescribed by the dentist (66%), unrelieved persisted pain (18.5%) or complications and pain aggravation (16%).

Discussion

The present study carried out an investigation of the pharmacists' behavior toward patients suffering from oral diseases.

The present study showed that the frequency of receiving patients complaining about oral problems was 99%, mainly for pain related to teeth, mucosa or both.

According to the literature, the main reasons for visits regarding dental emergencies are pain, infections and trauma [6, 7].

In the present study, the most complained symptoms were pain with swelling which were often due to an oral or dental infection. Few of the pharmacists evoked isolated pain which may be due to different diseases: neuralgia, inflammation of mucosa in autoimmune diseases, aphthous lesions or ulcers, lesions related to orthodontic appliance or temporomandibular articulation dysfunctions.

It is possible that pharmacists didn't know that pain and swelling can also be associated with trauma or tumors. Additionally, none of them evoked child dental problems such as teething discomfort, mouth burns, mouth dryness and dysphagia.

Priya et al., highlighted the strategic role of pharmacy staff in the management of patients in emergency situations. However, they noted some gaps in the knowledge of pharmacists [3]. Thus, lack of knowledge can lead to inadequate resolution of the patient's problem.

Interestingly, we noticed that 64% of the pharmacists recommended a dentist visit and 12 % a general physician visit, which is a good behavior toward patients for better oral emergency management.

Despite the restriction of dispensing antibiotics without prescription, over then half of participants stated that they allowed themselves to do it. over then half of participants stated that they recommended them. This behavior is contradictory because most of the participants stated that they asked patients about self-medication and at the same time they provide antibiotics without dentist prescription.

It should be underlined that even if national data about self-medication are not available, overall, Tunisians practice self-medication because they are not quite aware about self-medication risks. They take drugs without doctor's consultation, which may increase the risk of health hazards. There are numerous reasons for this behavior: restricted financial resources, fear of pain, unwillingness to visit the dentist, ignorance of self-medication risks, neglecting mild pain and sometimes unavailability to visit doctors [8].

Patients should be routinely asked and warned about the hazards of self-medication by pharmacists and doctors because inappropriate or excessive drug prescription not only leads to financial loss but also causes adverse effects and serious complications. In the current study, 60% of the pharmacists reported that they recommended analgesics [9]. Combination of Paracetamol and codeine was the most recommended molecule. Paracetamol appeared as the second choice, whereas it is the reference molecule in the first intention. It has sufficient safety in compliance with the conditions of use defined in the marketing authorization. The choice of paracetamol associated with codeine as first-line drug is efficient for mild to severe pain in spite of some potential adverse effects [10]. Several adverse reactions have been reported with codeine, particularly digestive, neurological and respiratory disorders. In case of prolonged use at high doses, risks of dependence and withdrawal syndrome upon abrupt cessation are possible.

In the present study, 66% of the participants said that they advised patients to take AIDs. The most recommended AIDs were tiaprofenic acid then ibuprofen.

Nonsteroidal anti-inflammatory drugs (NSAIDs) are widely prescribed in odontostomatology, to treat or prevent dental/oral pain and inflammation. Ibuprofen and acid tiaprofenic belong to the group of propionics and like aspirin, they inhibit the synthesis of prostaglandins and therefore have analgesic, antipyretic and anti- inflammatory properties [11].

Tiaprofenic acid was the most prescribed AIDs in this study while ibuprofen seemed to be the first-line AID prescribed by dentists [12-15, 8]. In addition, it was reported that it is the safest and the most effective substance for dental pain [15-18]. It may be prescribed in combination with other NSAIDs or narcotic analgesics [19].

However, managing dental pain is not always easy. Delivering an AID in case of oral infection may exacerbate it. Herein, the risk is to disseminate infection which can be fatal.

The association spiramycin/metronidazole was the most recommended antibiotics followed by Amoxicillin, Spiramycin alone and then the association amoxicillin/Clavulanic acid and finally metronidazole. Here, pharmaceutical advice does not meet the general rules of antibiotics prescription. The recommended antibiotic in the first intention is amoxicillin [10]. The association Spiramycin/Metronidazole comes in the second intention for general cases and has no indications for necrotizing periodontal disease, localized or generalized aggressive periodontitis [10]. Even if antibiotics were recommended in the adequate situations and proved their effictiveness, it is imperative to refer the patient to the dentist in order to ensure the required dental care. Antibiotics misuse increases bacterial resistance [20]. Therefore, regulation of the drug dispensing system should be respected by the pharmacists who have to stop dispensing mandatory medical prescription drugs without dentist prescription.

It was noted that mouthwash was recommended by a large number of pharmacists. Mouthwash should contain chlorhexidine for its antimicrobial effects and pharmacists should explain its appropriate use to ensure efficacity and safety for patients [21].

In spite of controversies about the effectiveness of homeopathy use in oral medicine, an important number of the participants trusted this therapeutic alternative and recommended it [22].

Overall, there were few dentists who recommended brushes or

adjuvants for tooth brushing, tooth flossing, etc.

Providing good pharmaceutical advice may enable pharmacies to differentiate themselves from non-pharmaceutical circuits where advice is generally absent [5]. Besides, oral hygiene accessories and homeopathic drugs may represent a significant part of the pharmacy business. Thus, pharmacists should be well informed about these items and explain their proper use method in an easy way.

Finally, 91% of the participants stated that patients returned to the pharmacy. They mentioned the following reasons: to take the prescribed medication after a dentist visit in most cases, unrelieved persisted pain or complications and pain aggravation. This finding may be considered with caution as an inadequacy of the proposed pharmaceutical advices even though we don't know if the patient was compliant to the recommendation.

Potential pitfalls in pharmaceutical advices can be avoided by offering training in the management of oral emergencies to pharmacists who act as information relays for patients and strengthening the links between different health professionals (pharmacists, general physicians and dentists) [1, 5]. Pharmacists should be able to identify and assess the severity of the clinical situation. He must know the limits of the pharmaceutical advice in order to refer the patient to the specialist in case of emergency or doubt [23].

Besides pharmacists, all pharmacy staff should also benefit from an adequate formation about oral hygiene sensitization.

Health decision makers should work cooperatively with pharmacists and doctors to adopt the necessary measures allowing control drug sales to reduce self-medication. They should also encourage pharmacists to create pharmaceutical files for patients to subscribe their pathologies, their medications in collaboration with their dentists and physicians. This alternative should be generalized in the country in order to keep patients' records, do analyses and carry out evaluations, on a national platform. Furthermore, health decision makers should involve pharmacists in awareness-raising action and campaigns about oral hygiene.

This study gave an overview of Tunisian pharmacists in the center region behavior. Nevertheless, it had some limitations. The number of pharmacists involved is relatively small. Further studies with a larger number of pharmacists are needed. However, this depends also on their willingness to respond to this survey which is considered by certain as a taboo subject.

Moreover, with the limits of the auto-administrated questionnaire, it cannot exhaustively reflect the different dental emergencies neither the behavior adopted by the pharmacists in real life.

The present findings should also be considered with prudence because of the disparities existing between the different governorates. It should be noted that some regions are more concentrated with the largest number of pharmacists, dentists, doctors and hospital centers. In addition, there are discrepancies between urban and rural areas where there can be a substantial lack of doctors and dentists. Clearly, educational and socioeconomic levels may incite patients to ask for pharmaceutical advice instead of dentist visits. It can also influence the type of required drugs. In this context, it will be helpful to carry out analytic national studies in order to investigate these inter-and intra-region disparities and take into account the number of dentists and pharmacies per inhabitant.

Finally, the questionnaire can be improved in order to clearly specify what was the pharmaceutical advice for each situation described by the patient. The questionnaire can also be formulated and distributed to the patients too.

To our knowledge this is the first pilot study that investigated the pharmaceutical advice given to patients experiencing oral pain. In spite of its limits, it provided a panoramic view of these advices adequacies to the clinical situations encountered in the pharmacy.

Conclusion

The results of this investigation showed that pharmacists may have an important role in the management of oral emergencies because they are frequently solicited by patients. The pharmaceutical advices included medicines, accessories of oral hygiene recommendations and orientation to doctors in order to manage oral pain or pathology. The study raised two other issues: self-medication and dispensing the mandatory prescription medicine molecules by pharmacists.

In this spirit, the role of the pharmacist should not replace the expertise of a licensed healthcare provider. Pharmacists should refer patients to dentists whenever it is necessary. Pharmacists are also invited to sensitize patients about self-medication risks.

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Conflict of Interest

The authors declare that there are no conflicts of interest.

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