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Research Article

Prescription In Endodontics: About 200 Cases In The Odonto-Stomatology And Maxillofacial Surgery Service Of The Donka Of Conakry National Hospital (Guinea)

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Abstract: **Introduction:** Endodontics is intended for the management of pulpal and periapical diseases of endodontic origin. It is a surgical procedure that is often completed by a prescription drug. The objective of the study was to assess the prevalence of drug prescribing at different stages of endodontic treatment. **Method:** This is a prospective descriptive study in Odonto-stomatology and Maxillofacial Surgery at the Donka National Hospital, which lasted for a period of six months ((February 02-July 31, 2013). **Results:** During this study period, we counted 200 patients for endodontic care. Biopulpectomy was the most successful initial therapy with 74%.The prevalence of the drug prescription during the treatment stages was: 60% after initial therapy; 6.5% after ductal shaping; 14.5% after root canal filling. This prescription concerned the three classes of drugs namely: analgesics, anti-inflammatories and antibiotics. After the initial therapy, the prescription was as follows: analgesics 33.33%, antibiotics 6.67%, anti-inflammatories 60%. **Conclusion:** This study shows that prescribing has involved all stages of endodontic treatment. It was more important during the initial therapy, which consists in taking charge of the consultation reason, which is pain in a large proportion. It is important to draw practitioners' attention to reducing drug prescribing during endodontic treatment when a surgical procedure is performed and well conducted.

Keywords: endodontics- prescription- Donka National Hospital.

INTRODUCTION

Endodontics is intended for the management of pulpal and periapical diseases of endodontic origin. It has two main steps: The preparation and filling that constitute with the diagnosis the tripod on which rests the endodontics (WEINE, F. 1998). It is essentially surgical because from the beginning of the treatment, the surgical gesture appears primordial.

The management of endodontic emergencies in the dental office requires an accurate diagnosis and an emergency action with or without a prescription (ROMIEU, G. *et al.*, 2012) to be effective.

The prescription associated with the acts during the various stages of the treatment aims at a better management of the pain and the infection by a synergy of actions. In any case, well-conducted cleaning, shaping and root canal filling procedures generally provide medication (LASFARGUES, J.J. *et al.*, 2001). Surgical procedures performed during the initial treatment may usually be sufficient in themselves to manage the pain if it does not pose a risk to the general condition of the patient.

According to the data of the literature, in odontostomatology many works are carried out on prescription (KORNMAN, K.S., & KARL, E.H. 1982; PREUS, H.R. *et al.*, 1992). In endodontics, various studies were carried out to evaluate the interest of adding an analgesic pharmacological treatment to manage postoperative symptomatology (Holstein, A. *et al.*, 2012). Prescription of antibiotics should be reduced in emergency treatment for pain management

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(LAKHSSASSI, N., & SIXOU, M. 2005), the abuse of the prescription of antibiotics can sometimes cause a microbiological problem of bacterial resistance and not least a risk of toxicity for particularly allergic patients (DESCROIX, V. 2006; NAIR, P. N.R. 1998).

In Guinea in endodontic practice, practitioners often accompany surgical procedures prescriptions that are not always relevant to the reason for consultation. Some people tend to systematize this prescription during the different stages of treatment. These prescriptions should take into account the pathology of the treatment steps.

The work done in guinea on the prescription in Odontostomatology concerns other specialties including oral surgery; in endodontics there are still no data available; it is therefore important to undertake this study.

The objective of the study was to assess the prevalence of drug prescribing at different stages of endodontic treatment.

METHOD

This was a six-month prospective descriptive study ((February 02-July 31, 2013) in the Odonto-Stomatology and Maxillofacial Surgery department of the Donka National Hospital.

Sampling was exhaustive of 200 patients seen in this department and undergoing endodontic treatment. Inclusion criteria: This study included patients whose diagnosis required endodontic treatment, who were over 16 years of age and had no contraindication related to endodontic treatment. Criteria for non-inclusion: Uncooperative patients, those with a contraindication related to endodontic treatment and patients in whom root canal treatment has already been initiated, were not included.

The data were collected on a fact sheet designed for this purpose with three sections:

- The socio-demographic aspects of the sample (age, sex, origin, level of study, socio-professional level).
- Clinical aspects: the reason for consultation, diagnosis, initial treatment
- The prescription medication during the treatment steps: prescription after initial therapy, prescription after ductal shaping and prescription after root canal filling; prescribed classes of drugs were noted as well as the molecules prescribed during the treatment steps.

The analysis was performed with Epi Info software version 3.5.4.

RESULTS

During a six-month period, 200 patients were identified in Odonto-Stomatology and Maxillofacial Surgery at Donka National Hospital for endodontic treatment.

- Sociodemographic aspects: the study was conducted on both sexes with a male predominance of 64% (n = 128) versus 36% (n = 72) female, a sex ratio of 1.77.

The age of the patients ranged between 16 and 75 years with an average age of 31.53 years. The most representative age groups were those aged 26-35 and 16-25 with respectively 35.7% and 29.1%.The highest socio-professional categories were civil servants 38% followed by pupils / students 31.5%. Workers and housewives were poorly represented, respectively 7.5% and 3.5%.

Clinical Aspects:

Reason for consultation: Pain was the main reason for consultation with 92%. Other motifs were poorly represented: aesthetics 1.5%; prosthetic 2%; and functional 4.5%.

Pain as the only reason for consultation was noted in 178 patients (89%).

Some patients, 6 in total (3%) associated another reason:

- Two patients (1%) associated it with an abscess;
- Two patients (1%) associated it with halitosis;
- One patient (0.5%) associated him with dyschromia;
- One patient (0.5%) associated with a coronary fracture

Diagnostic: Irreversible pulpitis was the most noted diagnosis with 83.5% (167 cases).Other pathologies encountered were: Acute apical periodontitis 7% (14 cases), Pulpo-desmodontitis 4.5% (9 cases), acute peripapical abscess 3% (6 cases), bridge abutment teeth 2% (4 cases).

Table I: Distribution according to the diagnosis

Diagnostic	Frequency	Percentage
Acute periapical abscess	6	3,0
Pulpo-desmodontitis	9	4,5
Irreversible pulpitis	167	83,5
Acute apical periodontitis	14	7
Bridge abutment teeth	4	2
Total	**200**	**100**

Initial Therapeutics: Biopulpectomy was the most successful initial therapy with 74% followed by biopulpotomy with 11.5%.The other treatments performed were: ductal medication 8%, sub occlusion 2%, dental drainage 4.5%.

Table II: Distribution according to initial therapy

Initial therapeutic carried out	Frequency	Percentage
Biopulpectomy	148	74
Biopulpotomy	23	11,5
Ductal medication	4	8
Dental drainage	9	4,5
Sub occlusion	4	2
Total	**200**	**100**

Prescription drug: The prevalence of the prescription during the treatment stages was as follows: 60% after initial therapy; 6.5% after ductal shaping; 14.5% after root canal filling.

The prescription after initial therapy concerned 60% of patients (120 patients). The prescribed drugs concerned the three classes of drugs namely: analgesics 33.33%, antibiotics 6.67%, and anti-inflammatories 60%.

Table III: Prescription after initial therapy

Class of Drugs	Frequency	Percentage
Analgesics	40	33,33
Antibiotics	8	6, 67
Anti-inflammatories	72	60
Total	**120**	**100**

Prescription after Initial Therapy According To the Pathologies:

For analgesics: the molecule of choice was paracetamol alone for 28 patients (70%), paracetamol associated with codeine for 7 patients (17.5%), paracetamol associated with dextropropoxifene for 5 patients (12.5%). This analgesic prescription was greater in pulpal and peri-apical pathologies with respectively 52.5% (21cas) and 45% (18cas), for bridge abutment teeth, 2.5% (1cas).

For antibiotics: amoxicillin was the most prescribed molecule for 5 patients (62.5%), amoxicillin and metronidazole for 3 patients (37.5%). This antibiotic prescription concerned only periapical pathologies.

For anti-inflammatories: the prescribed molecules were: ibuprofen with 77.78% (56 cases) and diclofenac with 22.22% (16 cases). The prescription of anti-inflammatories was dominant in pulpal pathologies 75% (54 cases); 20.83% (15cas) involved periapical pathologies and 4.17% (3cas) for bridge abutments.

Table IV: Prescription after initial therapy according to pathologies

Diseases	analgesics	antibiotics	Anti-inflammatories
Pulp	52,5%(21cas)	0%	75%(54cas)
Periapical	45%(18cas)	100%(8cas)	20,83%(15cas)
Bridge abutment teeth	2,5%(1cas)	0%	4,17%(3cas)
Total	**100%(40)**	**100%(8)**	**100%(72)**

The prescription after canal shaping was 6.5%. Antalgics were prescribed in 38.46%, antibiotics and anti-inflammatories in the same proportions is 30.77%.

After the root canal filling, the prevalence of the prescription was 14.5%. Among the prescribed drugs, anti-inflammatories and analgesics were more represented with respectively 51.72% and 37.93%, antibiotics were prescribed in 10.35% of cases.

For analgesics, paracetamol alone was the molecule of choice in 72.73% of cases, paracetamol associated with codeine in 27.27%.

For antibiotics, amoxicillline was the only molecule prescribed in all cases, 100%.

For anti-inflammatory drugs, ibuprofen was the most prescribed molecule in 73.33%, diclofenac in 26.27%.

Table V: Prescription after canal filling

Class of Drugs	Frequency	Percentage
Analgesics	11	37,93
Antibiotics	3	10,35
Anti-inflammatories	15	51,72
Total	**29**	**100**

DISCUSSION

This study, carried out in the odonto-stomatology and maxillofacial surgery department of the Donka National Hospital (Conakry University Hospital), involved 200 patients undergoing endodontic treatment. Both sexes were represented with a male predominance of 64% (n = 128) versus 36% (n = 72) female, a sex ratio of 1.77. This high rate of men shows that they consulted more during the study period. The age of the patients ranged between 16 and 75 years with an average age of 31.53 years. The most representative age groups were those aged 26-35 and 16-25 with respectively 35.7% and 29.1%. This average age shows that the study focused on a young population. This result corroborates with those of other authors: LESTER N. *et al.*, (1994) reported an average age of 31; NUSSTEIN., & BECK. (2003) found an average age of 33. The highest socio-professional categories

were civil servants 38% followed by pupils / students 31.5%. The workers and housewives were poorly represented, respectively 7.5% and 3.5%. This strong representation of these two layers in this series would be related to their level of information on the value of dental care. Pain was the main reason for consultation with 92%. Other motifs were poorly represented: aesthetics 1.5%; prosthetic 2%; and functional 4.5%. Pain as the only reason for consultation was noted in 178 patients (89%). This same reason for consultation has been found in similar studies: KANE AW. *et al.*, (2010) with 79.4%; DIOUF A. (2006) in 2006 with 75%. This high prevalence of pain in the reason for consultation is explained by the fact that pain is the first sign of inflammation and this is the main characteristic of pulpal and periapical pathologies. Irreversible pulpitis was the most noted diagnosis with 83.5% (167 cases). Other pathologies were: Acute apical periodontitis 7% (14 cases), pulpo-desmodontitis 4.5% (9 cases), acute peripapical abscess 3% (6 cases), bridge abutment teeth 2% (4 cases).

Initial Therapy: Biopulpectomy was the most successful initial therapy with 74% followed by biopulpotomy with 11.5%. The high prevalence of biopulpectomy in emergency treatment is related to the irreversible pulpitis which was the diagnosis found in more than 80%. The other treatments performed were: ductal medication 8%, sub occlusion 2%, dental drainage 4.5%. Authors like ØRSTAVIK, D., & PITT FORD, T.R. (1998), IN INGLE, J.I., & BAKLAND, L.K. (2002), TRONSTAD L. (TRONSTAD, L. 2003) and COHEN, S., & HARGREAVES, K.M. (2005) reported in their various studies that biopulpectomy is the emergency treatment recommended in irreversible pulpitis.

Prescription drug: In a sample of 200 patients, the prevalence of prescribing at the treatment stages was as follows: 60% (120 patients) after initial therapy; 6.5% (13 patients) after ductal shaping; 14.5% (29 patients) after root canal filling.

This same trend has been reported by KANE AW *et al.*, (2010) in a sample of 150 patients in Dakar, that is: 38% of prescribing after initial therapy, 5.3% after ductal shaping and 15% after ductal filling.

Prescription drug after initial therapy: The prescription after initial therapy concerned 60% of patients (120 patients). The prescribed drugs concerned the three classes of drugs namely: analgesics 33.33%, antibiotics 6.67%, and anti-inflammatories 60%.

The prescription of analgesics in 33% of our sample is in line with the reason for consultation, which is pain in almost 90%. The molecule of choice was paracetamol alone for 28 patients (70%), paracetamol associated with codeine for 7 patients (17.5%), paracetamol combined with dextropropoxifene for 5 patients (12.5%). This high prescription of paracetamol in the initial treatment corroborates with the results of other authors: DIOUF M. *et al.*, (2013); LAMBRECHT, T.J. (2004); GOMEZ *et al.*, (2007) and DAR-ODEH *et al.*, (2008).

The prescription of antibiotics after the initial therapy in this study is less with 6, 67%. This result is similar to that reported by PREUS HR. *et al.*, (1992) in Norway who found in their study, a 2.5% antibiotic prescription in endodontics when the patient is suffering from pain.

However other authors have reported higher rates of antibiotic prescription after emergency treatment: THOMAS D.W *et al.*, (1996) in 1997 in Cardiff (United Kingdom) found 30%; EPSTEIN (2003) in the United States had found 59.2%. Amoxicillin was the most prescribed molecule alone in 62.5% and Amoxicillin-Metronidazole in 37.5%. This high level of Amoxicillin was reported by DIOUF M. *et al.*, (2013) with 36.4%.

Anti-inflammatory drugs were more prescribed in initial therapy, ie 60% of cases.

Ibuprofen was the most prescribed molecule in 77.78% (56 cases) and diclofenac in 22.22% (16 cases). The choice of this molecule in the emergency treatment was dictated by the concern of taking care of the consultation reason which is the pain.

Prescription after channel formatting: The prescription after canal shaping was 6.5%. Antalgics were prescribed in 38.46%, antibiotics and anti-inflammatories in the same proportions is 30.77%. The prescription in this step does not seem to be necessary once the reason for consultation has been taken care of in the emergency treatment.

Prescription after root canal filling: after root canal filling, the prevalence of the prescription was 14.5%. Among the prescribed drugs, anti-inflammatories and analgesics were more represented with respectively 51.72% and 37.93%, antibiotics were prescribed in 10.35% of cases.

For analgesics, paracetamol alone was the molecule of choice in 72.73% of cases, paracetamol associated with codeine in 27.27%.

For antibiotics, amoxicillline was the only molecule prescribed in all cases, 100%.

For anti-inflammatory drugs, ibuprofen was the most prescribed molecule in 73.33%, diclofenac in 26.27%. MICKEL AK. *et al.*, (2006) report that ibuprofen is the most commonly used molecule among all NSAIDs prescribed to prevent postoperative pain after root canal treatment.

CONCLUSION

Endodontics is intended for the management of pulpal and periapical diseases of endodontic origin. The management of these pathologies requires surgical procedures that are often supplemented by a prescription of drugs. This study shows that prescribing has involved all stages of endodontic treatment. It was more important during the initial therapy, which consisted in taking into account the reason for consultation, which was pain in a large proportion. It was more important during the initial therapy, which consisted in taking into account the reason for consultation, which was pain in a large proportion. It is important to draw the attention of practitioners to the reduction of prescribing in endodontics when a surgical procedure is done and well conducted.

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