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Research Article

Prevalence and characterization of Odontogenic Infections in the Public Assistance Emergency Hospital between the Months of July to September of the Year 2015: Prospective Study

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Abstract

Objectives: The purpose of this study was to determine the prevalence of infections of odontogenic origin, describing the clinical characteristics, vectors of dissemination and complications, with regard to the "Public Assistance Emergency Hospital's" patients, examined during the months from July to September 2015.

The Study's Design: It was a descriptive and prospective study, conducted at between the months of July and September 2015.

Results: 134 patients were examined with infections of an odontogenic origin. The average age of patients was 39 years and the ratio of men to women was 1:1. There were 6.992 examinations undertaken in the course of the study and odontogenic infections corresponded to 7% of all diagnoses, according to the criteria of inclusion. Sub-mucosal abscesses were diagnosed in 53% of the patients, whilst submandibular phlegmon was the primary diagnosis for patients in need of hospitalization.

Conclusion: The Treatments performed in the service of dental emergency unit of HUAP are 91% of surface anatomical spaces and 9% of deep anatomical spaces, of which 99% are resolved on an outpatient basis and 1% required hospitalization.

Keywords: *Odontogenic Infections; Abscess; Facial Cellulitis; Phlegmon; Mediastinitis*

Introduction

The study conducted determined the prevalence of patients who come with Odontogenic infections, (IO) to the "Public Assistance Urgency Hospital (HUAP)", belonging to the Central Metropolitan Health Service of Santiago, Chile, describing clinical characteristics, pathways of dissemination and complexity from the patients. Odontogenic infection is understood as that which has as its genesis the own tooth or the tissues that surround it, affecting the bone in its alveolar portion in a first instance, and then disseminating through the medullary, the external cortical and the periosteum towards structures or neighboring or distant anatomical spaces [1]. IOs are one of the main causes of consultation in dental practice [2-4], the dentist throughout his life as a clinician will invest a large amount of time in the resolution of these infections and their complications, this is why you must have a complete knowledge about IO in terms of diagnosis, management or treatment and the complications that could cause [5].

OIs are commonly underestimated in terms of their morbidity and mortality [2]. Odontogenic infections can produce, serious continuity disseminations such as Ludwig's Angina [6,7], cervical-facial necrotizing Fasciitis [8,9] and Mediastinitis [10] or have a remote spread generating a septic embolization which can lead, for example, to a thrombosis of the cavernous sinus [11,12]. It is fundamental that the dentist and the health team in general take into account that an infection generated mostly by dental caries can eventually lead to the death of a patient.

It is important to highlight that OIs include inflammatory pulp and periapical pathology, since both processes are generated by micro-organisms and their main etiology is caries. These inflammatory pathologies are of high demand in dental emergency services due to the exquisite pain generated by pulpitis or acute apical periodontitis, however, they do not pose a systemic danger for the patient.

In our work, the focus is given mainly to those piogenic processes collected or diffused with dissemination potential. The relevance of this study is to know the local reality of the Hospital Emergency Public Assistance "HUAP" in order to analyze the considerations associated with the diagnosis, treatment and morbi-mortality of infections of odontogenic origin, with special emphasis on serious odontogenic infections that require hospital management.

The research problem corresponds to the ignorance of the prevalence of infectious Odontogenic processes in the emergency services of the country. It was not found in the development of the state of the art, literature that shows at a national or local level a description of the epidemiological point of view of the odontogenic infections. The research questions of the work are: What is the prevalence of odontogenic infections and their severity in the emergency unit of the Public Emergency Assistance Hospital? What kind of dissemination and level of complexity do patients in the emergency unit of the Public Emergency Assistance Hospital have?

Methodology

Study Design

The research work was carried out in the dependencies of the "Hospital of Emergency Public Assistance (HUAP)", belonging to the Central Metropolitan Health Service (SSMC) of Santiago, Chile, between the months of July to September of the year 2015.

To access the HUAP facilities it was necessary to manage the permit with the Director of the establishment, Dr. Mario Henriquez Ugalde and to have the approval of the protocol and research instruments by the Scientific Ethics Committee of the Central Metropolitan Health Service, chaired by Dr. Emiliano Soto Romo (CEC-SSMC).

The study is of Descriptive type, of cross section, Prospective. The selection of the sample is not probabilistic for convenience, that is, the sample is the patients that go to the emergency service of the "HUAP" (SUO-HUAP) with an infectious process of odontogenic origin that meets the inclusion criteria, between the months of July to September of the year 2015.

In total, 134 patients with odontogenic origin infections were included in a universe of 6,992 treatments performed during the two months in the HUAP dental emergency service (SUO-HUAP). Each of these patients was informed about the study and was given an informed consent, whose document had to be signed at the time of entering the study. After this, a clinical record was applied, recording anamnesis, clinical examination, diagnosis, treatment and evolution according to the case. (Both documents reviewed and validated by the CEC-SSMC).

To determine the real prevalence of infections of Odontogenic origin and the total number of patients attended in the study period, a "Florence" program report was obtained, from the time of hospital stay (23.07.2015-23.09.2015); This Florence Software corresponds to the computer program that stores electronic clinical records and all the assistance activities carried out in the HUAP.

The significance of this study is $\alpha = 5\%$, 95% confidence interval with an accepted error e = 1.17%. The statistical analysis was performed with the Microsoft® Excel® Version 2013 software.

Results

Of the total of 6,992 attentions performed in the study period, OIs are the most prevalent group of pathologies treated in the dental emergency service, with a prevalence of 60.1%. Within the diagnoses of Odontogenic infections are considered the inflammatory pathologies, pulp, periapical, abscesses of the periapical region, of the maxillary/mandibular bones, abscesses of superficial/deep anatomical spaces, cellulitis and phlegmon. After odontogenic infections there is a diagnosis not specified with the label of "dental examination" with 12%, mainly activities of patient control and removal of sutures. Finally, post-exodontia complications correspond to 1.9% of the total attentions. (Source: Florence HUAP report 23.07.2015-23.09.2015) (Table 1).

Diagnostics	Frequency (n)	Percentage (%)
Infections Odontogenic (Total)	4220	60,1
Trauma Dento-Alveolar	65	1
Complications Post-Exodoncia (Alveolitis-Hemorragia Post-Exodoncia)	134	1,9
Examination Dentistry	836	12
Other Diagnostics	1737	25
Total	6992 No. of attentions	100%

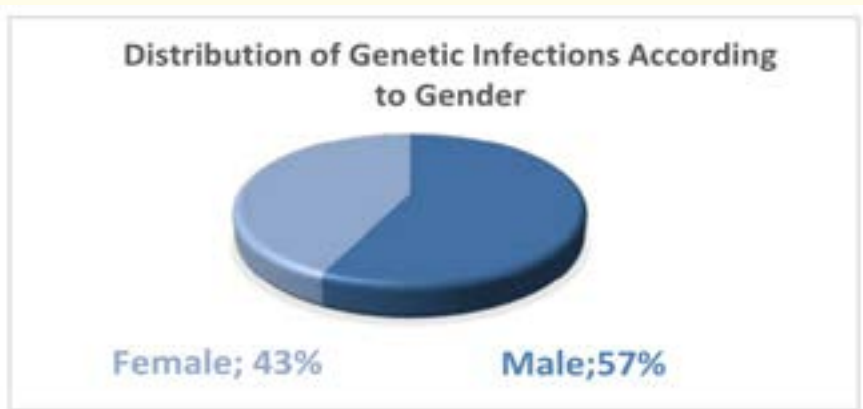
Table 1: *Prevalence of odontogenic infections and other more prevalent diagnoses of the HUAP Dental Emergency Service between the period of July to September 2015 (Source: Florence HUAP Report 23.07.2015-23.09.2015).*

From the universe of odontogenic infections, there is acute/chronic apical periodontitis with 55% of total OI. Then pulpitis follows with 24% of total OIs.

The OI diagnoses that fulfilled the inclusion criteria of the study are acute dentoalveolar abscess, chronic, subperiosteal, submucosal, anatomical space and cellulitis/phlegmon. We obtained 11.7% of the total of odontogenic infections and 7% of the total of the attentions in the two months of study. (Source: Florence HUAP report 23.07.2015-23.09.2015).

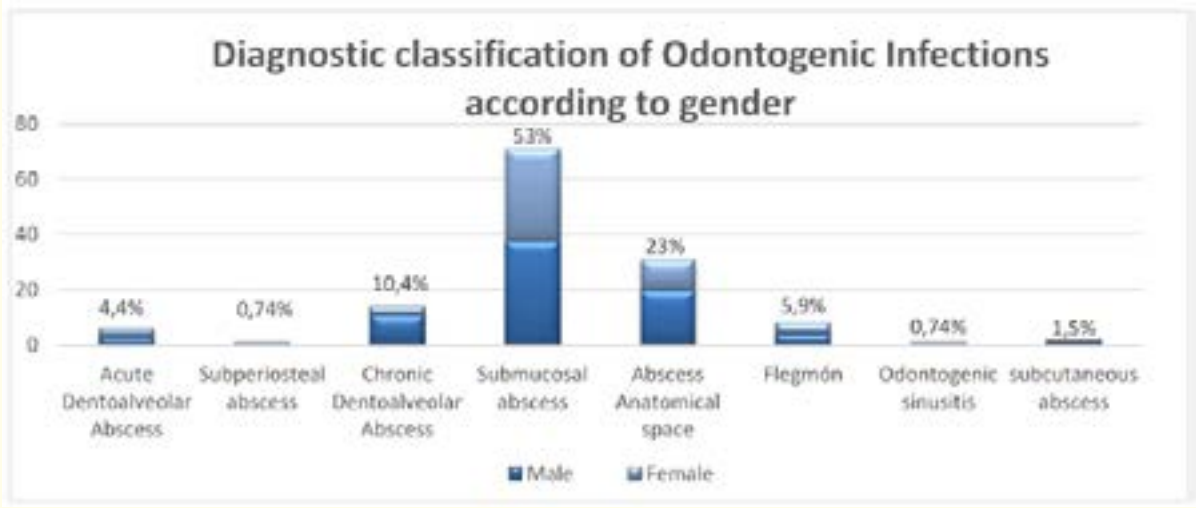
Of the patients with OI who met the inclusion criteria, 134 patients were examined, out of a total of 494, between the months of July to September of 2015, according to the Florence report.

We examined n = 77 men, constituting 57% of the sample and n = 57 women constituting 43% of the sample. (Graph 1).



Graph 1: *Distribution of patients with infections of odontogenic origin, by gender of the patients examined in the SUO-HUAP between the months of July to September of the year 2015.*

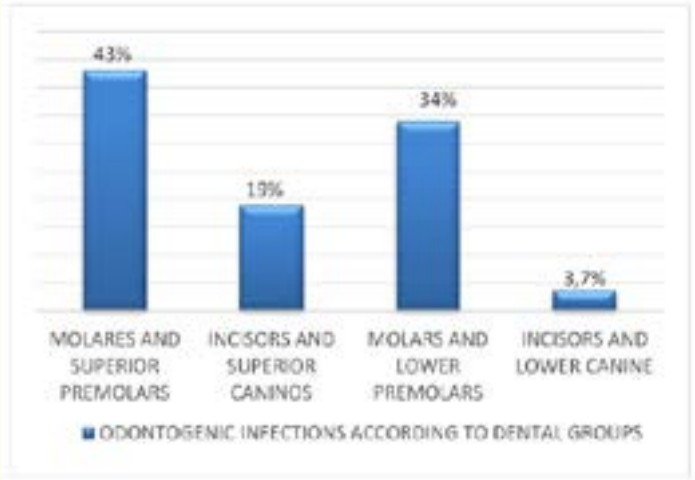
The most prevalent diagnosis in patients of the sample n = 134, is submucosal abscess with 53% (n = 71) of the total of infections of odontogenic origin, in examined patients (n = 134), then the abscess follows of anatomical space with 23% (n = 31). The following most prevalent diagnoses are chronic dentoalveolar abscess with 10.4% (n = 14) and Cellulitis/Phlegmon with 5.9% (n = 8) (Graph 2).



Graph 2: *Most prevalent diagnoses of odontogenic infections according to gender in patients examined in the HUAP dental emergency service between the months of July to September of 2015.*

Regarding the severity of the patients treated in the SUO-HUAP, we found that 90% (n = 122) of the patients with odontogenic infections had a "mild" severity; Value 1. The 7% (n = 9) of the patients with infections of odontogenic origin presented a "moderate" severity; Value 2, 1% (n = 2) of patients with infections of odontogenic origin presented a "moderate" severity; Value 3 and the remaining 1% (n = 2) presented a moderate severity "; Value 4. According to Flynn 2 Classification.

The dental group most affected by infections of odontogenic origin were maxillary molars and premolars with 43% (n = 58 patients), followed by mandibular molars and premolars with 34% (n = 46 patients). In the next place is the anterior maxilla group with 18.6% (25 patients), finally the anterior mandibular teeth are found with 3.7% (5 patients) (Graph 3).



Graph 3: *Frequency of infections of odontogenic origin according to the dental group involved, in patients examined in the SUO-HUAP between the months of July to September 2015.*

Of the patients examined, 77.6% were without systemic pathology at the time of admission. Pathologies such as arterial hypertension and autoimmune diseases such as rheumatoid arthritis and lupus were the most prevalent in the patients examined, constituting 3.7%. Second, patients with Diabetes Mellitus, patients with arterial hypertension plus Diabetes Mellitus and patients with a history of Cancer with 3%. Finally, one patient with HIV and another patient with a history of alcoholism were found, each constituting 0.7% of the patients examined.

Of the total of patients with odontogenic infections attended in the SUO-HUAP between the months of July to September of 2015, (n = 494), 6 patients were found, corresponding to 1% of the total, with indication of hospital management for the resolution of the odontogenic septic process.

When evaluating the most common signs and symptoms of OIs, we found that 49% (n = 66) of patients examined with infections of odontogenic origin presented more tumor pain, 19.4% (n = 26) of the patients, I consult only for pain, 13.4% (n = 18) I consult only for Trismus and 10% (n = 13) I consult only for tumor. Finally, 4.5% (n = 6) consulted for dysphagia plus Trismus and only 3.7% (n = 5) of patients consulted only for dysphagia.

In 80% of the patients examined, caries was the main cause of odontogenic infections, followed by the commitment of periodontal tissues, as a cause of the infectious process with 6%. Other etiological factors are attrition, tooth with initiated endodontic therapy (trepanados) and post-exodoncia infection, each of them with 3.7%.

The main area of commitment is the vestibular with 50% of the cases. 21.7% of the patients presented compromise of the genian space. The submandibular space was compromised in 11 patients; in 7 patients only the submandibular space was compromised and in 4 patients the submandibular space was compromised in conjunction with another space. One case of sinusitis of odontogenic origin was recorded.

Anatomical space	Frequency	Percentage
Periapical	20	14,9
Subperióstico	1	0,74
Vestibular	67	50
Palatino	4	3
Genius	29	21,7
Submandibular	7	5,2
Sublingual	1	0,74
Submandibular + Sublingual	2	1,49
Submandibular + Genius	2	1,49
Maxillary sinus	1	0,74
Total	134	100%

Table 2: *Frequency of anatomical spaces compromised by odontogenic infection in patients examined in the SUO - HUAP between the months of July to September of the year 2015.*

Discussion

The purpose of this present two-month prospective-descriptive study in the SUO-HUAP was to show the local reality of a dental emergency service, in terms of the prevalence, clinical characteristics and treatment of patients with odontogenic infections who came to the Hospital of Emergency Public Assistance.

In 1911 the first emergency service of the country was founded, corresponding to the "central post", in 1993 it receives the name of "Hospital of Emergency Public Assistance" (HUAP). The Public Assistance Urgency Hospital belongs to the Central Metropolitan Health Service (SSMC), this public health network feeds the communes of Cerrillos, Maipú, Estación Central, Santiago and Pedro Aguirre Cerda. At the Public Assistance Emergency Hospital, patients are cared for from the age of 15. In the HUAP Dental Emergency Service, an average of 114 attentions per day is performed, which translates into an average of 42,000 attentions per year.

In the two months of the study, 6,992 consultations were made in the dental emergency service, this number includes the treatment actions and patient controls. The service provided by the Odontologists and maxillofacial surgeons of the HUAP, is mainly oriented to the resolution of the patient's urgency, among the actions carried out most frequently are: extractions, programmed extractions of semi-erupted third molars, Emergency resolution in dentoalveolar trauma and maxillofacial, drainage or emptying of purulent collections, evaluation of hospitalized patients that present some pathology of the maxillofacial territory, etc.

To determine the prevalence of infections of odontogenic origin and of other diagnostic groups, the information of the "Florence" Software was obtained, filtering according to diagnoses. Of the 6,992 attentions, 60% (n = 4,992), correspond to infections of odontogenic origin, this figure includes all inflammatory processes, pulp, periapical, pericoronary and localized and diffuse septic processes, such as abscesses and phlegmons/cellulitis. Apical periodontitis corresponds to the most prevalent diagnosis, n = 2322, 55% of the total of the infections that were consulted in this period and 33% of the total of the dental emergency service between the months of July and September of 2015.

The second group diagnosed after infections of odontogenic origin corresponds to the "Dental Examination" 12%, the activities performed mostly under this diagnostic label, are patient controls and suture removal.

Of the total of odontogenic infections (n = 4,220), 494 diagnoses of odontogenic infections had inclusion criteria for this study (ADAA, ADAC, Submucosal abscess, Periodontal abscess, Anatomical space abscess, subcutaneous abscess, facial cellulitis), 134 patients were included in the statistical studies, since only these complied with the protocols of clinical record and informed consent, it is important to consider even the total number of patients with infections to have a global vision of the local reality of this service.

In the study by Cachovan., *et al*. [13] a retrospective analysis of 8 years (2000-2007) was performed, a total of 58,161 patients were analyzed. Of these, 36.7% corresponded to pulpitis and 31.1% corresponded to acute apical periodontitis, then the dentoalveolar trauma follows with 13.2%. 9.2% (n = 5,357) corresponded to infections of odontogenic origin (abscesses of odontogenic origin), data similar to that found in our study where infections of odontogenic origin have a prevalence of 7% of total attentions carried out between the months of July and September of 2015. The analysis of the prevalence was not made based on the patients examined for the loss of information, which was presented, that is why it was decided to obtain the prevalence from the records of the Florence Software, in such a way, to obtain a more representative fact of reality.

A total of 135 patients were examined, 134 with infections of odontogenic origin and 1 patient with submandibular sialadenitis, generated by sialolithus located in the anterior third of the submandibular duct.

The average age of the 134 patients examined with infections of odontogenic origin in the HUAP dental emergency service is 39 years, with a range between 15 and 88 years old (SD: 15.5, Median 36). In agreement with what was found in the one-year retrospective study of Sánchez., *et al*. [14] presented a sample (n = 151 patients) with an average of 40 years of age. In the three-year prospective study by Flynn., *et al*. [15] the average age of the 37 patients hospitalized for severe odontogenic infections is 34.9 years.

Regarding the distribution of gender in the patients examined, (n = 134) the proportion found between men and women is 1.3: 1 (57% male gender and 43% female gender, graph 1), the distribution of The gender of the 494 patients diagnosed with odontogenic infections in the two months of the study has a similar proportion between men and women (1:1), found in the patients examined.

This gender distribution found in the sample of our study is similar to that found by Boffano., *et al*. [16] in 2012, who conducted a study with 112 patients hospitalized for infections of odontogenic origin, whose sample presented a ratio between men and women 1:1 50.8% Male gender and 49.2% Female gender; On the other hand, Mathew., *et al*. [17] in their five-year retrospective study of odontogenic infections, found a 2:1 gender distribution (n = 137), 66.4% of the sample belonged to the male gender and 33.6%, belonged to the female gender. According to the literature, men have the highest prevalence of infections of odontogenic origin, due to the fact that they attend dental controls less frequently or have less concern for oral health, which favors the formation of caries and oral sepsis. However, in various studies of infections of odontogenic origin, including the present work, a similar gender distribution has been found [18]. It is likely that the proportion of men over time has decreased, due to contemporary aesthetic demands which has allowed to approach the male gender to dental controls and treatments, in this way, it has been equated to the proportion of women who have infections of Odontogenic origin.

Among the diagnoses made in the 134 patients in the sample, the submucosal abscess was the most prevalent, with 53% (n = 71) of the diagnoses made (n = 4 of these patients the infection spread to the palate), then the abscess of anatomical space follows with 23% (n = 31) of the total diagnoses. Cellulitis/Phlegmon occupies the fourth place of highest prevalence with 5.9% (n = 8), of these eight patients 6 were hospitalized, or had the indication of hospitalization for the management of odontogenic infection (Graph 2).

The dental groups most affected in patients with infections of odontogenic origin between July and September of 2015, correspond to molars and maxillary premolars with 43% of patients with infections of odontogenic origin studied (n = 134). It is followed by the mandibular molars and premolars with a 34% commitment; The most affected teeth are 1.6 and 2.5, in mandibular molars and premolars the most affected teeth are 3.6 and 4.6 according to FDI nomenclature (Graph 3).

In the 5-year retrospective study by Wang., *et al*. [19] that was carried out in a public urban hospital, they found 250 patients with maxillofacial infections, of these 157 were odontogenic infections and the location was preferably in the maxilla with 45% and 35% the infection was located in the jaw.

Bofanno., *et al*. [16] found in his sample of 112 hospitalized patients, a n = 125 times committed mandibular molars/premolars, and a number of n = 26 times committed maxillary molars/premolars, the amount of teeth involved exceeds the sample, due There were 36 patients out of 112 hospitalized with multiple teeth involved.

Other studies such as that of Sánchez., *et al*. [14] and Flynn., *et al*. [15] also found that the mandibular molars and premolars are the dental group most frequently involved [20], with the mandibular third molar presenting the greatest compromise of this dental group. All these studies are studies of patients with severe odontogenic infections that have required hospital admission for their treatment and precisely the dental group that most frequently generates severe odontogenic infections, by dissemination to spaces that can obstruct the airway, is the dental group of mandibular molars and premolars, this is why we assume that the group with the highest commitment in these studies differs from what we found in SUO-HUAP.

77% of the patients examined were without comorbidities at the time of admission, however of this total, seven undiagnosed hypertensive patients were found. 16% of the patients in the sample had some systemic pathology, hypertension (3.7%), diabetes (3%), patients with diabetes plus hypertension (3%), HIV (0.7%), history of cancer (3%). Of the patients who required hospitalization, 66% had some systemic pathology diagnosed.

Bahl., *et al*. [21], found in their sample of 100 patients that 79% had no systemic pathologies, 10% had arterial hypertension, the other 10% had diabetes mellitus and 1% had HIV.

In 70% of the patients examined, the treatment was etiological (Exodontia, drainage and installation of drainages), in addition to the adjuvant antibiotic therapy; The most commonly used oral antibiotics were derived from penicillins. In patients allergic to beta-lactams, lincosamides and macrolides were indicated [22,23].

Regarding the management of patients with infections of odontogenic origin in the HUAP, 99% was managed on an outpatient basis, and 1% (n = 6 patients), required hospitalization for its management. Of the six patients with an indication for hospitalization, five were hospitalized and one was transferred to a private health center according to their health provider (Isapre).

The six patients had a diagnosis of cellulitis/phlegmon, consistent with the severity of these conditions, as described in the literature [24,25]. Three of these patients had compromised the submandibular space, infection from molars or mandibular premolars, two had compromised the submandibular space plus the sublingual, one patient had a cellulitis of the genian space. Opitz., *et al*. [20] found that 78.4% (n = 814 patients) of the patients presented compromised submandibular space, an infection mainly from mandibular molars.

Regarding the severity of these patients according to the Flynn classification [2,15,26], one presented mild severity; value 1, three moderate severity; value 2 and two moderate severity; value 4, for presenting two compromised spaces. Gravity is obtained according to the anatomical space involved, and is related to the risk of obstructing the airway, presents a scale of mild-extreme. Each anatomical space is assigned a value and a risk, example submandibular space moderate irrigation; Value = 2; If more than one space is committed, the values add up.

When the hospitalization is indicated, a battery of imaging tests (Tac c/Contrast of head and neck) and mainly laboratory are ordered, including Hematological Tests with leukocyte count and leukocyte formula, Prothrombin time, INR, Creatinine, Plasmatic electrolytes (Na -Cl-K), glycemia. In the leukocyte formula, a mild neutrophilia was observed, but all patients had a white blood cell count < 15,000 cel./ mm^3, so the length of hospital stay is decreased, due to the fact that necrotizing infections do not occur, according to the literature [27,28]. The average hospital stay of the hospitalized patients was 5 days; 2 patients were 6 days, 1 patient was 4 days and 1 patient was 5 days. Zamiri., *et al*. [29] found that in patients systemically compromised with Diabetes Mellitus, the length of stay in the hospital is of an average of 6.6 days and in patients without comorbidities it is 5.5 days [30].

Regarding the treatment of these patients, all of them underwent the extraction of the affected tooth, plus antibiotic, analgesic and intravenous anti-inflammatory therapy. In 2 patients, surgical emptying with submandibular approach and drainage was also performed, both surgeries performed in the central pavilion. Relative rest and liquid diet or papilla were indicated. As for the most used antibiotics, Ceftriaxone 2 Gr every 24 hours Ev, Clindamycin 600 Mg every 8 hours Ev, within the indicated analgesics is metamizole 3 Gr and Ketorolac of 90 Mg, in 250cc of 0.9 saline solution % to 10cc hours. Within the measures of nutritional maintenance of the patient was indicated 1000 cc of glucose solution 5%, plus 4Gr NACL and 2Gr KCL. Daily dental brushing was indicated, application of local heat for 20 minutes, 5 times per day.

In relation to semiology, 78% of the patients who consulted for infections of odontogenic origin correspond to pain and tumor [31,32]. 21% of the patients at the time of the consultation had dysphagia and/or Trismus. Mathew., *et al*. [17] found that 100% of patients presented inflammation, 97.1% presented pain, 42.3% fever, Trismus was found in 50% and dysphagia in 40% of the patients studied.

The fever is a sign of interest in patients with severe OI [33], so in the HUAP it is quantified if the patient meets the criteria of severity and/or indication of hospitalization.

In 80% of the patients examined, caries was the main cause of the odontogenic infections studied, as indicated in the literature, dental caries is the main etiological factor of pyogenic processes [24].

Fifty percent (n = 67) of the patients presented a compromised vestibular space, that is, submucosal abscess. The infection therefore spread below the muscle insertion in the jaw and above it in the jaw.

The genian space was compromised in 21.7% (n = 29). The submandibular space was affected in 8.2% of the patients, of these, 5.2% had only the submandibular space compromised. The compromise of the submandibular space was the one that generated the greatest need for hospitalization in the patients, 5/6 of patients with indication of hospitalization had compromised the submandibular space. Finally, the prevalence of infections of odontogenic origin, in the emergency dental service of the HUAP, correspond to the main group of diagnosed pathologies, by the professionals of the service. Regarding its complexity, the vast majority of the odontogenic pyogenic processes are resolved on an outpatient basis, the surgical action is the main treatment for these septic processes.

Conclusions

The objective of this research was to determine, describe and quantify the pyogenic processes of odontogenic origin, in such a way, to obtain the reality of a national dental emergency service. The 60% of the attentions carried out in the two months of the study correspond precisely to odontogenic infections (pulpitis, apical periodontitis, abscesses, cellulitis, among others), that is to say, the professionals of the dental emergency service of the HUAP dedicate more than 50% of the attention for the diagnosis and treatment of these pyogenic processes. Therefore, in the dental emergency service, most tooth extractions are carried out, compromised by infections and dental caries is still the main etiological factor.

The age range of the sample is 39 years, this data is related to what was reviewed in the literature, however patients were found between the range of 15 - 18 years, with infections of dental origin, this speaks of the personal susceptibility or the individual response of the host to the progress of the infectious process and poor access to rehabilitative treatments in our population.

Odontogenic infection can affect both men and women, without a strong predilection for any gender, as obtained in this study the ratio is 1:1.

7% of the total attentions correspond to localized or diffuse septic pyogenic processes that meet the criteria for inclusion in the study, of which only 2% were examined. This responds mainly to the operation of the dental emergency service, the attention is 24 hours, 7 days a week, 365 days a year, and the researcher as an external only stayed during the period of the investigation in daytime hours mainly. A parallel was made comparing the results with the patients examined and the total registered in the Florence software by the HUAP professionals; In the variables studied, the sample obtained follows the same trend found in the care records (Gender and Engaged Dental Group).

The submucosal abscess was the diagnosis of the group of odontogenic infections included in the most prevalent study, it is concluded that the dissemination of the pyogenic processes of dental origin analyzed in the period, mostly occur under muscle insertion, compromising the vestibular space.

Molars and maxillary premolars are the dental groups most affected by odontogenic processes, followed by the mandibular molars and premolars, however this last group generates severe odontogenic infections, with greater need for hospitalization of the patient, than infections caused by maxillary molars and premolars. The first permanent molars are the main teeth compromised by odontogenic infections, this is related to the time of exposure of these teeth, because they are the first teeth to erupt from the permanent dentition, however it must be kept in mind that the decay process It is multifactorial.

The odontogenic infectious processes have as a guest healthy patients or with associated comorbidities, in the latter, depending on the type of pathology, the infectious process tends to be more aggressive and with greater capacity for dissemination.

The odontogenic processes are mainly treated on an outpatient basis, the elimination of the causal focus, is the main treatment, with antibiotic therapy being an adjuvant agent.

The treatments carried out in SUO-HUAP are 91% of superficial anatomical spaces and 9% of deep anatomical spaces, of which 99% were resolved on an outpatient basis and 1% required hospitalization.

The need for hospitalization responds to the systemic commitment of the patient, if it presents fever, tachycardia, dyspnea (systemic inflammatory response syndrome), among others, it will be a reason to hospitalize the patient and monitor it continuously.

Cellulitis or submandibular phlegmon is the main diagnostic entity that generated need for hospital management, as this is a deep anatomical space and is related to other contiguous spaces.

A patient with infection of odontogenic origin if not treated properly, can compromise deep anatomical spaces, including Retropharyngeal and prevertebral with serious complications such as mediastinitis or the Lateropharyngeal space, with alteration of the airway column [34,35]. All the spaces are related and can compromise contiguous or distant, as in the case of thrombosis of the cavernous sinus.

The pain and the tumor are the main semiological characteristics associated to the odontogenic Infectious processes, secondarily we can find the dysphagia, the Trismus and the dyspnea.

It is important to emphasize that the oral health of the Chilean population is with high rates of caries and periodontal disease, these chronic diseases are absolutely preventable, so it must act more strongly in programs for disease prevention and health promotion in such a way, to avoid chronic oral sepsis and acute pyogenic processes with aggressive propagation capacity.

Educational programs should be implemented to inform the population of the severity of these conditions, patients usually attend when they do not resist the painful process, and they already have a previous painful history, with a higher risk of complications.

Future studies with greater human resources are required to avoid the loss of patients in non-working hours to external personnel and to allow compliance with the protocol of clinical record and informed consent.

This study corresponds to a small radiograph of one of the main emergency services in the country, which even in the 21st century is dedicated to the resolution of chronic oral diseases that are absolutely preventable. Public policies must be implemented to occupy the professional dental resource to improve this situation.

Conflicts of Interest

The authors declare no conflicts of interest.

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