REVISTA PERUANA DE INVESTIGACIÓN EN SALUD

ORIGINAL ARTICLES

https://doi.org/10.35839/repis.5.2.906

http://revistas.unheval.edu.pe/index.php/repis/

Profile of patients with Down syndrome attended at UFRGS: an 18-year descriptive documentary evaluation

Perfil dos pacientes com síndrome de Down atendidos na UFRGS: uma avaliação descritiva documental de 18 anos

Márcia Cançado-Figueiredo[1,*], Ana R. Vianna-Potrich[1,#], Júlia De Oliveira-Saldanha[1,%], Jéssica Maraschin[1,&]

Abstract

Introduction: Evaluate the profile of patients with Down Syndrome (DS) assisted in the Discipline of Dental Care of Patients with Specials Needs in the School of Dentistry, at Federal University of Rio Grande do Sul (UFRGS). **Method**: Based on the dental records of patients treated at an outpatient level between 2001 and 2019, information was obtained regarding the patient's age in the first care, sex, form of access, systemic condition of DS, medication used, and treatment received on his last visit to the clinic. **Result**: DS represented 9% of patients, the prevalence of which was male (61%) and median age of 24 years. Regarding the conditions associated with DS, 2.8% presented autism and 15.9% had chronic diseases, with cardiopathy and hypothyroidism as the most prevalent. Related to the medicines of continuous use, 21.4% used medication, being the most frequent: antiepileptics, antipsychotics, anticonvulsants, antithyroid agents. **Conclusion**: The relevance of this article is made in view of the extreme importance of knowing, in depth, the condition of patients with Down Syndrome, because only in this way can be offered an adequate treatment, restoring and developing the health and life quality of themselves.

Keyword: down syndrome, disabled persons, dental care.

Resumo

Objetivo: Avaliar o perfil dos pacientes com Síndrome de Down (SD) atendidos na Disciplina de Atendimento Odontológico do Paciente com Necessidades Especiais (PNE) da Faculdade de Odontologia da Universidade Federal do Rio Grande do Sul (UFRGS). **Método**: A partir dos prontuários odontológicos dos pacientes atendidos em nível ambulatorial entre os anos de 2001 e 2019 foram obtidas informações em relação a idade do paciente no primeiro atendimento, sexo, forma de acesso, condição sistêmica do paciente com SD, medicamento de uso contínuo utilizado e, tratamento recebido em sua última visita a clínica. **Resultado**: Verificou-se que a SD representou 9% dos PNEs atendidos na disciplina, sendo 61% do sexo masculino com uma mediana de idade de 24 anos (pacientes sem doença crônica) e, de 13,5 anos (pacientes com doença crônica), advindos de Porto Alegre. Destes pacientes, 5% apresentavam condições sistêmicas associadas e, 16% doenças crônicas. 21,4% faziam uso de medicação sendo os mais frequentes: antiepilépticos, antipsicóticos, anticonvulsivantes, antitireoidianos. O tratamento mais realizado em sua última visita clínica foi a cirurgia (30,4%) para os pacientes com doenças crônica e, a prevenção (31,0%) para aqueles sem doença crônica. **Conclusão**: Destaca-se assim, a importância do cirurgião-dentista estar atendo às condições sistêmicas e às associadas, as quais estão ligadas também ao uso de medicamentos e, ter o conhecimento farmacológico, para saber manejar os pacientes com SD em clínica, tendo em vista que há probabilidade de manifestações bucais e sistêmicas com o uso destes medicamentos, além de suas reações adversas.

Palavras chaves: síndrome de down, pessoas com deficiência, assistência odontológica.

[1]Universidade Federal do Rio Grande do Sul. UFRGS, Brasil.

ORCID:
[*]https://orcid.org/0000-0002-4279-5417
[#]https://orcid.org/0000-0002-1976-302X
[%]https://orcid.org/0000-0002-5186-8294
[&]https://orcid.org/0000-0002-6179-2350

Corresponding author:
Márcia Cançado Figueiredo

Postal Address: Ramiro Barcelos,2492, Bairro Santa Cecilia, CEP: 90035- 003, Porto Alegre, Rio Grande do Sul, Brasil.

E-mail: mcf1958@gmail.com

Reception date: january 04, 2021

Approval date: march 20, 2021

Quote as: Figueiredo MC, Potrich ARP, Saldanha J de O, Maraschin J. Profile of patients with Down syndrome attended at UFRGS: an 18-year descriptive documentary evaluation. Rev. Peru. Investig. Salud. [Internet]; 5(2): 100-105. Available from: http://revistas.unheval.edu.pe/index.php/repis/article/view/906

Introduction

The Down Syndrome (DS) was described by the English pediatrician, John Langdon Down, 1866, as the most frequent genetic cause of mental retardation being characterized by the trisomy of chromosome band 21, occurring in 1:600 to 1:800 live births (1).

Regarding to oral manifestations, the people with Down Syndrome may present several manifestations, such as: atrophic maxilla, cleft lip, narrow, high and ogival palate due to a narrow nasopharynx, as well as hypertrophied tonsils and adenoids, fissured tongue, angular cheilitis, hypotonic, teeth agenesis, retardation of eruptions, alterations in dental structures and periodontal disease, besides candidiasis and mouth breathing. The most frequent dental abnormalities are oligodontia, microdontia, hypodontia in both dentitions, fusion, taurodontism and dental anomalies of coronary and root development (2).

As people with this syndrome have difficulty in performing oral hygiene, because they have motor and neurological deficiencies and muscular hypotonia, there is a greater accumulation of bacterial biofilm, which further increases the susceptibility to develop periodontal disease, since patients with DS already have a susceptibility to manifest this disease due to the numerical reduction of mature T lymphocytes and functional defects of chemotaxis and cell phagocytosis of neutrophils and monocytes (3).

Schwertner, Moreira, Faccini and Hashiyume (4) in 2016, stated that although the salivary composition is similar in individuals with DS, they have a dental biofilm with greater cariogenic potential than individuals without DS (less phosphate and more extracellular polysaccharides (PEC). This, even

though they have higher concentrations of IgA, compared to individuals without DS, is not reflected in their caries experience.

On the other hand, DS individuals have a higher potential for developing pseudomembranous candidiasis compared to non-syndromic individuals. Candida yeasts are present in the natural microbiota of human beings from the moment of birth, living in equilibrium with the host (5).

As for the malocclusions most present in DS people are the anterior open bite and posterior crossbite, and the anterior open bite is due to a pseudo macroglossia and the imbalance that happens by the muscular hypotonia in the strength of the lip, cheek and tongue muscles. The mouth opening leads the DS patient to be a mouth breather. Halitosis is another characteristic linked not only to poor oral hygiene, but also the presence of mouth breathing, cleft tongue, gum problems and the motor impairment, which would interfere with the social inclusion of individuals with Down Syndrome (2).

In addition, the neuronal development is affected in the person with DS, being necessary, therefore, the use of antipsychotics, mood stabilizers, antimanic drugs, such as lithium, carbamazepine and tricyclic antidepressants and, these, in turn, cause adverse oral effects, such as, xerostomia, hyposalivation among others (6).

Silva and Dessen (7), in 2002, stated that DS patients still receive very limited care, i.e., due to the lack of trained professionals with knowledge for such, due to prejudice or fear of treating them. In this sense, dental courses are including in their curricula the discipline of special needs patients, with the purpose of preparing these future professionals and grounding them scientifically, so that they can offer a more humanized dental treatment, encouraging an interpersonal relationship between professional, patient, and their caregivers.

According to Aguiar, Figliolia, Puerro, and Fedalto (8) in 2002, the word inclusion means to enable the person with disability to have equal treatment possibilities, and thus, dental surgeons must learn to deal with diversities and differences. The approach to a child with DS must be based on the evaluation of the psychosocial effect of the syndrome, and on the importance of techniques to create a bond between the professional-parents-child, before the effective institution of treatment.

It is fundamental, according to Schmidt (9) in 1998, that the dental surgeon turns his attention to understanding the dynamics of the functioning of the family of the patient with disability, since it is the first agent of socialization of the child, it mediates its relations with its various environments. Therefore, knowing how the interactions between the patient with Down's Syndrome and his parents and siblings take place makes it possible to understand his insertion in the various sociocultural contexts and facilitates his treatment in the clinic.

In view of the above, this research proposed to evaluate the profile of patients diagnosed with Down Syndrome seen at the School of Dentistry of the Federal University of Rio Grande do Sul in the period of 18 years, from 2001 to 2019, and to correlate the diseases related to Down Syndrome and their medications, and what could interfere with dental treatment.

Methods

The research was based on a descriptive documental, quantitative and transversal research with analysis of secondary data, using a database of 1,620 medical records of the Discipline of Dental Care to Patients with Special Needs of the School of Dentistry, Federal University of Rio Grande do Sul, from August 3, 2019 to March 30, 2020.

Data collection was performed by two examiners trained by a technician from the School of Dentistry to have access to the electronic database of patients and, be able to evaluate them. Inter-rater reliability was evaluated using Cronbach's alpha coefficient, which measures the correlation between responses. Cronbach's α coefficient ranges from 0 to 1, and an α of 0.6 to 0.8 was accepted, indicating acceptable reliability. The following data were evaluated: the patient's age at first visit, gender, form of access, systemic condition of the patient, continuous use medication used, and last treatment received on his or her visit to the clinic of the discipline of dental care for patients with special needs. The records of patients with Down's Syndrome were included in this research, and the records that were not completely filled out were excluded.

The data were entered into the Excel program and later exported to the SPSS v. 20.0 program for statistical analysis. Categorical variables were described by frequencies and percentages. The symmetry of quantitative variables was verified by the Kolmogorov Smirnov test. Quantitative variables were described by the median and the interquartile range. Categorical variables were associated by the chi-square test or Fisher's exact test. The binomial test was used to test whether a binary variable had the same frequency of presentation as its categories. Quantitative variables were compared by the Mann-Whitney test. A significance level of 5% was considered.

The scientific methodology in relation to the bibliographic search used was based on the inclusion criteria of the following descriptors: Down syndrome; oral health; people with disabilities, in

databases such as PubMed, SCOPUS and Web of Science regardless of the age of the studies, in view of the scarcity of articles on the subject.

The research project was submitted for consideration by the Ethics Committee of the Federal University of Rio Grande do Sul and the Research Committee of the School of Dentistry of the same University under number CEP UFRGS 1.499.611. According to Resolution 196/96 IX. 2 the data will be kept for five years and afterwards destroyed.

Results

The medical records of 1620 patients were evaluated. The total number of patients with special needs (SNP) seen at the Discipline of Dental Care of the Patient with Special Needs of the School of Dentistry, Federal University of Rio Grande do Sul (UFRGS) in the period from 2001 to 2019 was 1620, and, 145 (9%) of the patients had the SD chromosomopathy.

Regarding the quantitative numerical age of the DS patients, the median age was 24 years (interquartile range 16 years to 35 years). As for sex, 56 (38.6%) were female and 89 (61.4%) were male.

As for the city of origin of the referral 56% were referred from the capital Porto Alegre itself, state of Rio Grande do Sul, Brazil, 44% from the interior of the state.

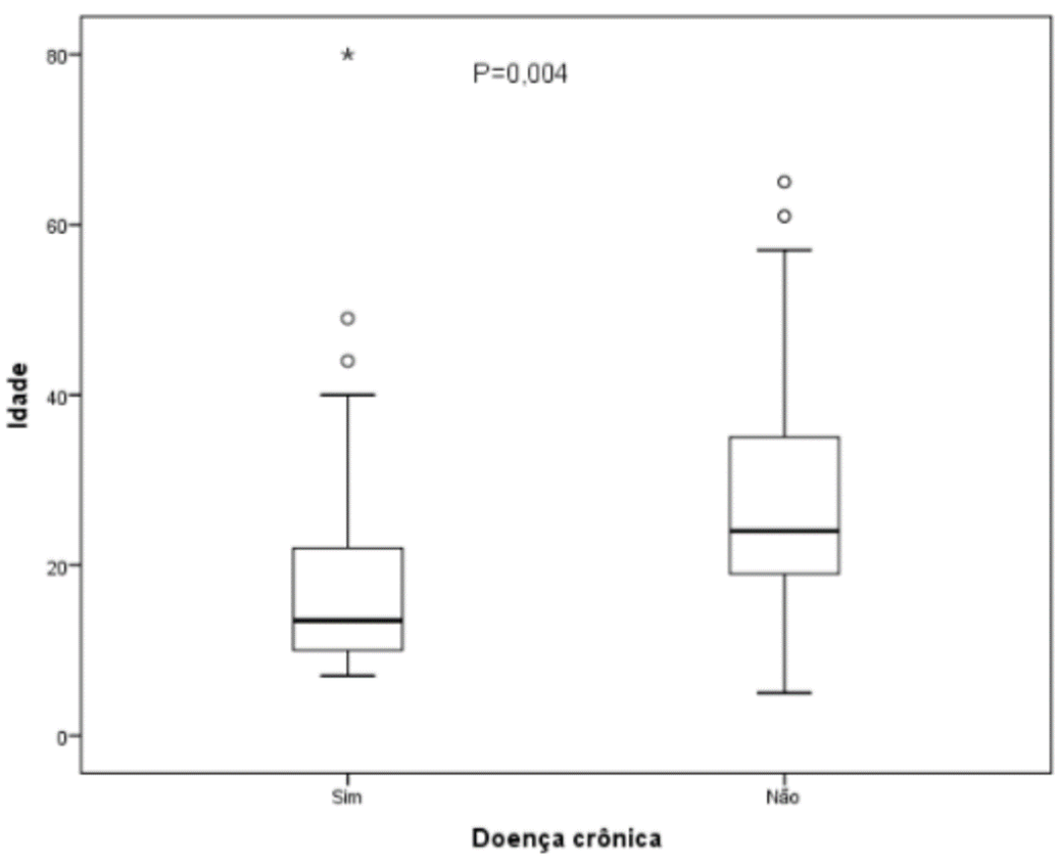
Regarding associated conditions, 2.8% presented the condition of Autism together with DS, 1.4% presented West Syndrome together with DS, and 0.7% presented the condition of Phenylketonuria.

Regarding the systemic condition of the patients: 15.9% of the patients presented chronic diseases (Figure 1), 10.3% had heart disease, 4.1% had hypothyroidism, 1.4% had diabetes, 0.7% had hypertension, 0.7% had epilepsy, 0.7% had leukemia, 0.7% had asthma, 0.7% had anemia, 0.7% had bronchitis.

Of the 145 patients, 69% did not take any medication, 21.4% did, and 9.7% took two or more medications. Correlating with age, the median was 22 years for patients taking medication (interquartile range 11-35 years) and 24 years for patients not taking medication (interquartile range 19-33 years) (p=0.137).

As for the type of drugs that the DS patients used continuously or frequently, they were: antiepileptics 14.4%, antipsychotics 13.1%, anticonvulsants 11.7%, antihypertensives 0.7%, antidepressants 2.8%, hypoglycemic agents 1.4%, and antithyroid drugs 11%. The dental procedures that were

Figure 1 - Median age of Down Syndrome patients with and without chronic diseases



performed in DS patients on the last day of their visit to the clinic for special needs patients were: prevention 28.3%, surgery 19.3%, restorative dentistry 14.5, periodontics 11.7%, orthodontics 2.8% and endodontics 0.7%.

Discussion

According to Figueiredo, Leonardi, and Ecke (10) in 2016, DS patients require medical and dental care specifically directed to their systemic condition, and thus, health professionals must be prepared to offer adequate and quality treatment. Thus, the importance of this study in knowing the profile of DS patients who receive dental care became clear.

The data found in the literature regarding the profile of DS patients in places that served patients with special needs showed a percentage very similar to the one found in this study. Figueiredo, Bertoli and Ferronato (11) in 2009, evaluating 584 medical records found 8.7% of DS patients in the same population studied in this research. Domingues, Ayres, Mariusso, Zuanon, and Giro (12) (2015) in the city of Araranguá-SC found 9.9% evaluating 282 medical records, Veríssimo, Azevedo, and Rêgo(13) (2013) in the city of Natal, RN found 11.3% evaluating 186 medical records, and Pinto, Coser, Kester, and Furtado(14) (2018) in the city of Rio de Janeiro-RJ, found 7.5% evaluating 388 medical records.

With regard to gender, in the present study, approximately 60% of DS patients were male and almost 40% were female, findings that corroborated those found in the study of Pinto, Coser, Kester, and Furtado (14) in 2018, who evaluated 388 medical records, and 57% were male and 43% female.

Given their physical characteristics, DS patients may present some chronic diseases, as was observed in this study in about 20% of cases, and of these, a higher prevalence of congenital heart disease was found in approximately 10%. Compared to the population reality of people with DS, these results were below the normal average, which according to Noguti, Frascino, Lascane, and Fraga (15) in 2010, would be around 50%.

Due to the systemic complexity present in most people with DS, they use continuous medication. Thus, approximately 20% of the DS patients in this study used continuous use medication, and almost 10% used two or more, including antihypertensives, anticonvulsants, and antiepileptic drugs. In contrast, a study by Rochetto, Marini, and Miranda (16) in 2014, on the profile of DS patients in the Association of Parents and Friends of Exceptional Children in the city of Mogi Guaçu, São Paulo, they observed that of the 38 enrolled patients, 73% were on continuous use medication, with antithyroid drugs being the most used by them.

Continuing the above, the medications in association with poor oral hygiene, low immunity, and motor difficulties of DS patients, led 12% of the patients in this study, to the need for periodontal treatment, on their last visit to the clinic, and to exodontia, in almost 20% of the cases.

It could be noticed that the work of the dental surgeon with the patient with DS, should be focused on health promotion, since it knows, that caries and periodontal disease have great relationship with the presence of biofilm and, according to Schwertner, Moreira, Faccini and Hashiyume(4) in 2016, the biochemical composition of saliva and dental biofilm of children with DS is more periodonto pathogenic, for presenting higher levels of extracellular polysaccharide (ECP).

Therefore, the visit of DS patients to the dental surgeon must be made as early as possible, where guidance on healthy habits and diet must be given, as well as the importance of periodic maintenance checkups according to the risk identified by the professional for each patient and, according to Oliveira and Amaral(17) in 2020, orientation on the instruments and procedures to be used during oral hygiene, providing caregivers with workshops for making/adapting toothbrushes, dental floss, and alternative openers indicated for each case. It is always good to emphasize, that oral hygiene habits go hand in hand with the other basic principles of hygiene.

Finally, it is suggested that further studies with a larger sample size should be developed, in order to obtain more accurate frequencies and to be able to compare the data from this study with the world population in general.

Conclusions

Based on the results obtained regarding the profile of patients with Down Syndrome treated at the UFRGS School of Dentistry from 2001 to 2019 it is relevant to conclude that:

Regarding the age of the patients, the median age was 24 years (interquartile range 16 years to 35 years). Regarding sex, 61.4% were male and 70% did not use medications, 5% had associated systemic conditions and 16% had chronic diseases;

It is important for the dental surgeon to know the systemic and associated conditions of the patient, to know how to treat them, since this fact can interfere in their clinical dental care.

Future research on patients with Down syndrome is necessary for the establishment of public policies to promote health using a preventive and therapeutic approach, enabling their integration/inclusion in the society.

Funding

Self - funding.

Authors' contribution

Márcia Cançado Figueiredo: conception and design of the paper; data analysis and interpretation; statistical advice; critical revision of the manuscript. **Ana Rita Vianna Potrich**: contribution of patients or study material; technical or administrative advice. Júlia de Oliveira Saldanha: collection/obtaining results; Analysis and interpretation of data; statistical advice; Drafting of the manuscript; **Jéssica Maraschin**: collection/obtaining results; Analysis and interpretation of data; Statistical advice; Drafting of the manuscript **Cançado-Figueiredo M, Vianna-Potrich AR, De Oliveira-Saldanha J, Maraschin J**.

Conflict of interests

All authors declare no conflict of interest.

References

1. Moreira LMA, El-Hani CN, Gusmão FAF. A Síndrome de Down e sua patogênese: considerações sobre o determinismo genético. Rev Bras Psiquiatr. 2000;22(2):96-99.
2. Carvalho ACA, Campos PSF, Rebello IC. Síndrome de Down: aspectos relacionados ao sistema estomatognático. Rev Cimed Biol. 2010;9(1):49-52.
3. Vieira TR, Peret AC, Peret Filho LA. Alterações periodontais associadas as doenças sistêmicas em crianças e adolescentes. Rev Paul Pediatr. 2010;28(2): 237-243.
4. Schwertner C, Moreira MJS, Faccini LS, Hashiyume LN. Biochemical composition of the saliva and dental biofilm of children with Down syndrome. Int J Paed Dent. 2016;26(2):134-140.
5. Smith G, Rooney Y, Nunn J. Provision of dental care for special care patients: the view of Irish dentists in the Republic of Ireland. J. Ir. Dent. Assoc. 2010; 56(2): 80-84.
6. Le Rolland SI. Complicações odonto-estomatológicas dos fármacos antipsicóticos. 2018. Dissertação de Mestrado em Medicina Dentária. Universidade Fernando Pessoa, Porto, 123p.
7. Silva M, Dessen K. Síndrome de Down: etiologia, caracterização e impacto na família. Inter Psic. 2002;6(2):167-176.
8. Aguiar SMCA, Figliolia SLC, Puerro M, Fedalto MF. Características clínicas da língua de portadores da síndrome de Down. Rev Odontol UNESP 2002;23(1): 24-27.
9. Schmidt MG. Capítulo XLIV: Pacientes Especiais Portadores de Deficiência Neuropsicomotoras. Corrêa MSNP editora. Odontopediatria na Primeira Infância.1aed. São Paulo: Livraria Santos;1998, p.645-663.
10. Figueiredo MC, Leonardi F, Ecke V. Avaliação do perfil dos pacientes com deficiência atendidos na Faculdade de Odontologia da UFRGS. Rev AcBO. 2016;5(1):1-21.
11. Figueiredo CM, Bertoli FCL, Ferronato T. Perfil dos pacientes com necessidades especiais atendidos na Faculdade de Odontologia da Universidade Federal do Rio Grande do Sul. 2009. Trabalho de Conclusão de Curso de Graduação em Odontologia. Faculdade de Odontologia. Universidade Federal do Rio Grande do Sul. Porto Alegre, 30p.
12. Domingues NB, Ayres KMC, Mariusso MR , Zuanon ÂCC ,Giro EMA. Caracterização dos pacientes e procedimentos executados no serviço de atendimento a pacientes com necessidades especiais da Faculdade de Odontologia de Araraquara – UNESP. Rev Odontol UNESP. 2015;44(6):345-350.
13. Veríssimo AH, Azevedo ID, Rêgo DM. Perfil Odontológico de Pacientes com Necessidades Especiais. Pesq Bras Odontop Clin Integr.2013;13(4):329-335.
14. Pinto AD, Coser I, Kester RG, Furtado GF. Perfil dos pacientes com necessidades especiais atendidos na Faculdade de Odontologia da Escola Superior São Francisco de Assis. Natur Online. 2018;16(3):048-023.
15. Noguti J, Frascino AVM, Lascane NA, Fraga CTP. Uso de Profilaxia Antibiótica para Pacientes Portadores de Síndrome de Down. Rev. Cir. Traumatol. Buco-maxilo-facial. 2010;10(4):31-38.
16. Rochetto NF, Marini DC, Miranda SC. Perfil de pacientes portadores da Síndrome de Down da APAE de Mogi Guaçu – SP. Rev Foco. 2014;5(6):53-70.
17. Oliveira BC, Amaral LD. Diretrizes de atendimento odontológico para pacientes com necessidades especiais em tempos da COVID - 19. [livro eletrônico]1aed. Belo Horizonte. Universidade Federal de Minas Gerais, 2020. Disponível em: https://www.odonto.ufmg.br/osp/wp-content/uploads/sites/20/2018/02/Diretrizes_OPNE_Covid-19_6_ago.pdf