



Prevalence of Dental Caries and Fissure Sealant in the First Permanent Molars among Patients Attending College of Dentistry, Erbil, Iraq. (A Retrospective Study)

Alaa Mahmud Mustafa¹, Hozan Farid Tawfiq^{2*}, Awaz kakil Blbas³
Manal Muhammed Tahir⁴

1 College of Dentistry, Hawler Medical University, Alaa.mustafa@hmu.edu.krd, Erbil, Iraq.

2 College of Dentistry, Hawler Medical University, hozan.tofiq@hmu.edu.krd, Erbil, Iraq.

3 College of Dentistry, Hawler Medical University, awaz.kakil@hmu.edu.krd, Erbil, Iraq.

4 College of Dentistry, Hawler Medical University, manal.tahir@hmu.edu.krd, Erbil, Iraq.

*Corresponding author email: hozan.tofiq@hmu.edu.krd; mobile: 009647504899172

تواتر تسوس الأسنان وختم الفجوة في الضروس الدائمة الأولى بين المرضى الذين يتواجدون في كلية طب الأسنان، أربيل، العراق. (دراسة استرجاعية)

الاء محمود مصطفى¹، هوزان فريد توفيق²، ناواز كاكل بلباس³، منال محمد طاهر⁴

1كلية طب الأسنان، جامعة هولير الطبية، Alaa.mustafa@hmu.edu.krd ، أربيل، العراق

2كلية طب الأسنان، جامعة هولير الطبية، hozan.tofiq@hmu.edu.krd ، أربيل، العراق

3كلية طب الأسنان، جامعة هولير الطبية، awaz.kakil@hmu.edu.krd ، أربيل، العراق

4 كلية طب الأسنان، جامعة هولير الطبية، manal.tahir@hmu.edu.krd ، أربيل، العراق

Accepted:

3/2/2024

Published:

31/3/2024

ABSTRACT

Background:

The FPM is especially helpless against dental caries due to its unmistakable shape, early emission, and area in the mouth, unveiling it a significant wellbeing concern around the world. The objectives of this examination project at Erbil's School of Dentistry, Hawler Clinical College, are to decide the way that normal dental caries is in first long-lasting molars of pediatric patients, how normal gap sealants are, and to make a norm for caries preventive estimates all through the country.

Materials and Methods:

The information for the review examination came from 263 pediatric patients (129 young men and 134 young ladies) with ages going from 5 to 16 and were assembled somewhere in the range of 2021 and 2022. We observed segment subtleties including orientation, age, and FPM status. Caries in the teeth were analyzed on the surfaces of the occlusal teeth utilizing the DMFT\S file. We involved SPSS Version:28 for our factual exploration, and the chi-square test showed that FPM caries differed essentially with age.

Results:

Findings showed that tooth caries was more common than fissure sealants, and that females had a greater incidence of occurrence than boys. The percentage of caries was 60.5% greatest in the age range of 5-8.

Conclusion:

The findings of this research emphasise the need of developing age-appropriate treatments and tailored preventative measures that take gender into account.

Keywords:

First permanent molars, dental caries, Fissure sealants, Pediatric Dentistry, Preventive Dentistry.

INTRODUCTION

Since it is more regular in youths, caries is among the most widely recognized oral sicknesses universally. Most of the total populace actually experiences this serious medical problem [1].

Salivary stream and creation, fluoride openness, dietary sugar admission, and time all play a part in dental caries, a complex disease that might be tended to with precaution ways of behaving [2]. Caries are especially normal in the main long-lasting molar (FPM) in light of its situation at the rear of the mouth and its significance in the development of dental curves [3]. Occlusal pits and gaps are an ideal spot for caries in view of their shape, how rapidly they emit, and where they are situated in the mouth [4].

With regards to the long-lasting dentition, the primary molar (FPM) is accountable for the teeth that eject later on, both in front and behind it. The FPM is the ideal mooring choice in light of its huge root surface region, which permits the tooth to move uninhibitedly, upholds the essential masticatory capability, influences the level of the occlusal space, the distance between the upper and lower jaws, and the tasteful extents of the mouth [3]. The earliest rise of FPM in the mouth hole, the patient's caries-inclined age inferable from less-created eating and cleaning propensities, and a high-sugar diet are factors that have been connected to the event of caries in FPM [2]. The improvement of dentition and the wellbeing of the kid's teeth rely upon the principal extremely durable molars (FPM), and their initial misfortune because of caries would impact their oral wellbeing in the future [3]. Also how distressing, expensive, and tedious it is for the little one.

Forestalling caries of the FPM is a vital objective of pediatric oral wellbeing programs. Most of these projects use fluoride stain or other site-explicit procedures to seal holes and breaks [2]. With regards to extremely durable back teeth, crevice sealants are a recommended supplement to different medicines and measures to forestall caries. They work by impeding the cleft where plaque and microbes might frame [4]. The exploration gives proof that gap sealants are advantageous in forestalling and controlling caries in kids and youths, for both individual and local area based programs [5,10].

There has been an absence of examination on the recurrence of dental caries in FPMs and gap sealants in Erbil, the capital of the Kurdistan Locale. This data is vital for setting pattern norms for anticipation and treatment. To lay out the practicality and reasonableness of this sort of mediation on a cross country scale, inquiries regarding the momentum utilization of sealants to caries should be addressed to send off such a safeguard program.

Among kids matured 5 to 16 signed up for the pedodontics program at Hawler Clinical College's school of dentistry, this review tried to survey the recurrence of dental caries on FPMs and the presence of crevice sealants on FPMs. Its auxiliary goal was to give the preparation to the current caries counteraction drives.

MATERIALS AND METHODS

Subtleties from patient case sheets spreading over November 2021 through February 2022 were accumulated by the analysts.

There was a sum of 263 case documents looked into; 134 of those patients were female and 129 were male. Dental caries has previously required filling medicines for all people who were a piece of the exploration. The scientists ensured that all member data was thorough, barring people with extra dental sores or fundamental issues, and focused on patients matured 5 to 16 years to ensure that the information was precise and important.

Scientists recorded every patient's age, orientation, and subtleties on their most memorable long-lasting molars (FPMs). Nonetheless, to keep the information steady, the examination did exclude FPMs that were halfway emitted or not ejected by any stretch of the imagination.

The analysts utilized the DMFT\S record, which represents the "Rotted, Missing, Filled Teeth \ Surfaces" list, to assess dental caries. In this examination, the occlusal surfaces of teeth were analyzed for rotting FPMs exclusively, no matter what the phase of the carious illness. It was likewise detailed that the teeth were in great shape, meaning they had no pits or crevice sealants. Bunch 1 comprised of youngsters ages 5-8, Gathering 2 of kids ages 9-12, and Gathering 3 of youngsters ages 13-16. Analyzing the caries, sound, and crevice fixed of FPMs in each age gathering and orientation was basic.

STATISTICAL ANALYSIS:

The collected data were statistically analyzed using SPSS Version:28, with the frequency table and chi-square Test, and the level of significance was set at 0.01.

RESULTS

A sum of 263 case sheets were evaluated, with 134 occasions being female and 129 being male (49.0%). The information was arranged into three age gatherings: (5-8) years, (9-12) years, and (13-16) years. Of the three, 60.5% of the cases were viewed as in the (5-8) years age bunch. Conversely, it was 38.4% in the 9-12 age bunch and 1.1% in the 13-16 age bunch. The exploration test's age gathering and orientation are displayed in Table (1), the recurrence table.

Table 1: Frequency table of age group and sex of the sample

		Count	%
Group Age	5 – 8	159	60.5%
	9 – 12	101	38.4%
	13 - 16	3	1.1%
Gender	Male	129	49.0%
	Female	134	51.0%

An excellent complete of 678 FPMs were assessed for carious state, gap sealant presence, or sufficiency out of 263 case sheets.

Age bunches contrasted fundamentally concerning caries of FPMs; in the 5-8 age bunch, 20.5% (n=54) of the complete number of teeth analyzed had rotting FPMs, contrasted with 19.0% (n=50) in the 9-12 age bunch and 1.10% (n=3) in the 13-16 age bunch (Table 2).

Table 2 shows that there was no connection among's age and the utilization of gap sealants, as 6.8% of FPMs were crevice fixed for youngsters matured 5-8, 4.6% for kids matured 9-12, and 0.0% for youngsters matured 13-16. As shown in Table 2, there was a significant contrast in the level of sound teeth across the three age gatherings, with (5-8) having (35.7%), (17.1%), and (0.0%), separately. This distinction was measurably huge ($p > 0.05$).

Table 2 Distribution and comparison of first permanent molars caries and fissure sealants prevalence based on age groups

Age Group	Number of case sheets examined	Number of teeth examined	Fissure tooth (%)	Caries tooth (%)	Sound tooth (%)
Total	263	678	30	107	139
5-8	159	413	18 (6.8%)	54 (20.5%)	94 (35.7%)
9-12	101	253	12 (4.6%)	50 (19.0%)	45 (17.1%)
13-16	3	12	0 (0.0%)	3 (1.10%)	0 (0.0%)
Comparison			Chi-Square Test	Chi-Square Test	Chi-Square Test
			0.410 p>0.05	10.607 p<0.01**	8.660 p<0.05*

*Significant

*Highly significant

The pervasiveness of caries in FPMs was 18.6% in men and 22.1% in females; there was no genuinely massive contrast between the genders with respect to gap sealants, and the commonness of caries in guys was 6.1% and 5.3% in females. The level of FPMs with sound teeth was 26.6% in men and 22.2% in females ($p > 0.05$), as shown in Table (3). Moreover, there was no genuinely massive contrast between the genders in such manner.

Table 3: Distribution and comparison of first permanent molars caries and fissure sealants prevalence based on gender groups

Gender		Fissure (%)	Caries (%)	Sound (%)
Total		30	107	139
Male		16 (6.1%)	49 (18.6%)	70 (26.6%)
Female		14 (5.3%)	58 (22.1%)	69 (22.2%)
Comparison		Chi-Square Test	Chi-Square Test	Chi-Square Test
		0.249 p>0.05	0.765 p>0.05	0.765 p>0.05

DISCUSSION

The recurrence of caries and the utilization of crevice sealants on FPMs were the main factors analyzed in this examination of youngsters matured 5 to 16. Because of their significance in the advancement of long-lasting teeth and the way that they had completely arisen by this age, just the FPMs were surveyed. Figuring out the caries epidemiological pattern, as well as the current crevice sealant use and predominance, is vital. The utilization of gap sealants is likewise a proportion of the protection care given to youngsters, both on an individual and a cultural level.

Dental caries commonness in Erbil city has been the subject of a few examinations, yet not every one of them have zeroed in on FPMs explicitly. This is the main review that we know about that looks at the recurrence of caries and crevice sealants on FPMs in Erbil, the city of Kurdistan, Iraq. Counts of corrupted FPMs showed a genuinely critical variety by age bunch in the ongoing examination. There was no connection between's this result with the consequences of the examinations referred to in ref [2, 3]. A high-sugar diet that conflicts with references [6, 4], the patient's age, which makes them bound to gain caries because of less settled eating and cleaning propensities, and the earliest beginning of FPM in the mouth.

Conflict of interests.

There are non-conflicts of interest.

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الخلاصة

مقدمة

يشكل تسوس الأسنان تحديًا عالميًا للصحة العامة، وخاصةً التأثير على الضرس الدائم الأول (FPM) بسبب شكله الفريد، ويزوغه المبكر، ووضعته الفموي. تهدف هذه الدراسة، التي أجريت في كلية طب الأسنان، جامعة هوليير الطبية في أربيل، إلى تقييم مدى انتشار تسوس الأسنان في الأضراس الدائمة الأولى لدى مرضى الأطفال، وفحص وجود مواد مانعة لتسرب الشقوق، وإنشاء مرجع وطني لاستراتيجيات الوقاية من التسوس.

طرق العمل:

حللت الدراسة بأثر رجعي بيانات من 263 حالة أطفال (129 ذكرًا و134 أنثى) تتراوح أعمارهم بين 5 و16 عامًا، تم جمعها بين نوفمبر 2021 وفبراير 2022. وتم تسجيل المعلومات الديموغرافية، بما في ذلك العمر والجنس وحالة الضرس الدائم الأول. تسوس الأسنان، يتم تقييمه باستخدام مؤشر DMFT\S، مع التركيز على الأسطح الإطباقية. استخدم التحليل الإحصائي SPSS الإصدار: 28، حيث يشير اختبار مربع كاي إلى وجود اختلاف كبير على أساس العمر في تسوس الضرس الدائم الأول.

النتائج :

كشفت النتائج عن ارتفاع معدل انتشار تسوس الأسنان مقارنة بحشوات الشقوق، حيث أظهرت الإناث معدلات أعلى من الذكور. الفئة العمرية (5-8) كانت لديها أعلى نسبة تسوس (60.5%).

الاستنتاجات:

تسلط هذه الدراسة الضوء على الحاجة إلى استراتيجيات الوقاية المستهدفة، مع التركيز على الاعتبارات الخاصة بالجنسين، والتدخلات المناسبة للعمر لمعالجة الفوارق الملحوظة.

الكلمات المفتاحية:

الأضراس الدائمة الأولى، تسوس الأسنان، مانعات تسرب الشقوق، طب الأسنان الأطفال، طب الأسنان الوقائي.