

уменьшение не является достоверным.

Применение клеточных биотехнологий способствовали значимому снижению уровня ЛДГ и ЩФ. Так, к 7-м суткам ПРП содержание ЛДГ и ЩФ у подопытных крыс уменьшалось, по сравнению с аналогичным сроком наблюдения у нелеченых животных, в среднем в 2,0-2,2 раза (80,22 7,02 кат/гр.сыр.тк, $P2 < 0,001$ и 6,38 0,40 кат/гр.сыр.тк соответственно, $P2 < 0,01$).

К 21-му дню наблюдения регистрировалось дальнейшее уменьшение, по сравнению с 7-м днем исследования, содержания ЩФ (4,87 0,21 кат/гр.сыр.тк против 6,38 0,40 кат/гр.сыр.тк, $P3 < 0,02$). Уровень холинэстеразы, напротив, достоверным образом увеличивался, по сравнению с животными, которым не проводили коррекцию постреанимационных нарушений взвесью фетальных нейроцитов, к 7-м (4,53 0,28 кат/гр.сыр.тк, $P2 < 0,001$) и 21-м суткам восстановительного периода (4,52 0,45 кат/гр.сыр.тк, $P3 < 0,02$).

Таким образом, в результате наших исследований было выявлено, что восстановительный период после оживления характеризуется подъемом уровня следующих ферментов: ЛДГ, КФК и ЩФ. Холинэстеразная активность, напротив, уменьшается, однако, данное уменьшение не является достоверным. Внутривенное

введение в момент начала эффективной сердечной деятельности взвеси фетальных нейроцитов способствует значимому снижению активности ЛДГ, ЩФ, а также существенному увеличению содержания холинэстеразы.

Литература

1. Сейтеметова А.Ж., Чучупалова Л.Н. Активность холинэстеразы крови и тканей крыс во время клинической смерти // Клинико-физиологические аспекты терминальных и экстремальных состояний.-Новосибирск, 1988.-С.35-37.

2. Шим Н.В. Экспериментальная модель реанимации белых крыс после клинической смерти после асфиксии и влияние экзогенного гепарина на продолжительность клинической смерти // Патогенез и экспериментальная терапия терминальных состояний.-Омск, 1979.-С.57-62.

3. В.В.Ленский, М.С.Богушевич, В.В.Гальчин, В.А.Востриков Краниocerebralное перераспределение крови и устойчивость организма к гипоксии при клинической смерти от асфиксии // Материалы международного симпозиума "Центральная нервная система и постреанимационная патология организма", Москва, 1989.-С. 68.

Aitbaeva Z.B., Tazhibaeva D.S., Kabdualieva N.B., Soboleva A.A., Dzhusanova G.S.
THE INFLUENCE OF FETAL NEUROCYTES CELL THERAPY TO THE DYNAMIC OF ENZYMES CONTENT IN MALE RATS BRAIN SURVIVED AFTER 4-MINUTES CLINICAL DEATH
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Abstract:

The purpose: to study the enzymatic content of brain tissues of rats after 4-minutes clinical death from mechanical asphyxia and being treated with fetal neurocytes suspension in postreanimation period.

Materials and methods. Experiments were held on 25 male rats, aged 1.5 months survived after 4-minutes clinical death from mechanical asphyxia and being treated with fetal neurocytes suspension.

Results. Postreanimation period of 1.5 months male rats is characterized by rising of enzymes level: LDH, creatine phosphokinase and alkaline phosphatase. Opposite, activity of cholinesterase decreases. Fetal neurocytes cell therapy promotes to the significant reduction of LDH, alkaline phosphatase activity, also it is contribute to accurate increasing of cholinesterase content.

Key words:

postreanimation period, cell therapy, enzymes

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STUDY ON THE INFLUENCE OF TREATMENT ON THE CAVITY SURFACES IN OBTAINING MARGINAL SEALING IN OCCLUSIVE COMPOSITE RESIN RESTORATIONS

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Abstract:

Due to their morphological and clinical-biological particularities, the occlusal surfaces benefit from a special therapeutic management. Modern preparation of the cavity surfaces may be carried out with air abrasion devices or aerated salt powder polishing devices (Prophyjet). The adhesion of composite resins is obtained nowadays with 7th generation monocomponent selfetching agents whose marginal sealing nevertheless proved to be inferior to the one obtained by the application of the adhesive system in 3 separate times. The purpose of our study was to assess marginal sealing of occlusal restorations through a colorimetric method in different clinical situations in which we used the afore-mentioned devices and to which either selfetching adhesive system was applied alone or together with an additional acid conditioning. The outcomes statistically analyzed demonstrated that marginal sealing improved significantly by the use of one of the 2 devices and the additional acid conditioning of the enamel margins. .

Key words:

marginal sealing, occlusal carries, composite resins, aqua/air abrasion, 7th generation dentinal adhesives

Introduction

The global prevalence of this affection, according to a regional epidemiological study carried out by the WHO col-

laboration center in Iași, Romania, in 2002, for people between 35 and 65 years old, showed a caries-affected percentage of 92 with a 9.9 DMF-T index, of which 60% were cavity fissure caries [1]. When dealing with cavity lesions that benefit from a restorative treatment, the therapeutic strategy must pursue the principles of the minimally invasive orientation as far as cavity preparation is concerned and to resort to

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modern technical means that may ensure an optimum marginal sealing; this desideratum is actually the golden standard in occlusal restorations with composite resins[2]. From the point of view of the adhesive systems, the current result of the researches led to the apparition on the market of the 7th generation selfetching systems, which are used in one step, thus eliminating the danger of contaminating the operative surfaces and of postoperative sensitivity that used to appear when older adhesive systems were used[3]. The pH of the weak state-of-the-art selfetching adhesive agents is not sufficiently low so as to allow them to be very efficient with enamel, consequently the adhesion at this level is deficientary[4]. This is why some authors recommended the original application of an acid conditioning gel on the enamel margins before using an adhesive agent[5]. The purpose of our study is to assess marginal sealing of occlusive composite resin restorations by means of a colorimetric method, in different clinical situations in which we used the aforementioned devices and to which either the selfetching adhesive system was applied alone or together with an additional acid conditioning.

Materials and methods

To this purpose we chose 40 molars extracted for different reasons unaffected by caries, they were debrided with fine periodontal curettes and then disinfected with a 1% chloramide solution, after which they were kept in a normal saline solution. The 40 teeth were divided into 4 study groups depending on the works carried out on them. Each group was divided into 2 subgroups of 5 teeth each, depending on the used adhesive system (Table 1). On the fissure surface of all samples, standard cavities were prepared, with the same type of carbide burs (330) and at the same depth (1 mm, under the enamel/dentine junction).

In group A1, the prepared cavities were left as they were, without any treatment of surface cleaning. Before applying the adhesive system, the enamel margins of the cavity were acidly conditioned with the Eco-Etch (Ivoclar-Vivadent) product. After drying, the G-Bond(GC) mono-component selfetching adhesive system was applied. The restoration material Gradia(GC) – a microparticle composite resin – was applied in a sole time, after which it was polymerized for 20 seconds. After the application of the material, the restoration was finished and polished according to the known clinical stages observing the manufacturer’s instructions.

In group A2, the work stages were the same, except for the fact that the additional marginal conditioning was not carried out in a separate stage.

In group B1, immediately after the preparation of the cavity, the surfaces were subject to the action of an Aquacut “Quatro” (Velopex International) fluid/air abrasion device which took the original concept of air abrasion to which has been added the action of a fluid resulting fluid/air abrasion system or aquabrasion.. This group was applied the additional 37% phosphoric acid marginal conditioning before the application of the adhesive system. The procedure for group B2 was the same as in the previous group, but air

abrasion was used without marginal acid conditioning. In group C1 was used the Prophy Jet Cavitron (DeTrey Dentsply) device which removes the salivary aquired pellicle from the margins and surfaces of bevelled enamel. After the air polishing of the surface, the additional 37% phosphoric acid marginal conditioning was carried out. In group C2 the same stages were observed, except for the acid conditioning.

In the group D samples, the surfaces were submitted both to the fluid/air abrasion and to the air polishing, and in subgroup D1 the additional 37% phosphoric acid conditioning was applied. After applying the restorations, the teeth were stored in water at the room temperature. After 24 hours, the restorations were polished with special gums under water spray. Afterwards, the apexes of all samples were sealed with composite resin (Point – Four,Kerr) and a layer of nail polish was applied on all the surfaces except for a 1-mm strip around the restoration. The samples were introduced in a 0.5% methylene blue solution at the room temperature for 24 hours , minutely brushed in order to clean any surplus of colorant and they were stored in 4° C water until they were sectioned.

The teeth were sectioned longitudinally in 4 sections, 1 mm away from each other, in the vestibular towards oral direction through the restoration core. The penetration of the colorant was assessed with a stereo-microscope x 25 (Zeiss Corp.) and the results were recorded according to a 0-3 value scale, as follows: 0 – complete absence of the penetration, 1 – the colorant reached only the enamel, 2 – the colorant penetrated to the enamel-dentine junction, 3 – the colorant penetrated the dentine (Fig. 1).

The maximum value of penetration for each sample was considered representative, thus one value was recorded for each tooth. For the statistic computerized analysis of the results there were carried out tables of contingency in test χ^2 in which there are correlated the techniques with the obtained values.

Results and discussions

The values of microleakage obtained for the study groups are presented in Table 2, graphique 1 and in Fig. 2 and Fig. 3.

By analyzing the values obtained we may state that the lowest results were achieved in group A, in which no

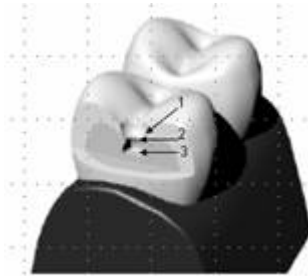


Fig. 1

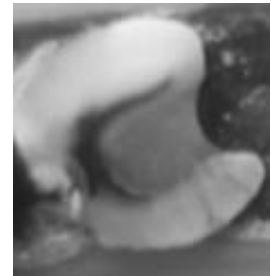


Fig. 2

Table 1: Study groups repartition

Grup	Abraziune cu aer	Prophyjet	Adeziv dentinar	Condiționare acidă
A1	-	-	+	+
A2	-	-	+	-
B1	+	-	+	+
B2	+	-	+	-
C1	-	+	+	+
C2	-	+	+	-
D1	+	+	+	+
D2	+	+	+	-

Table 2:The values of dye penetration in study groups

Grup	Numar Cazuri			
	0	1	2	3
A1	0	0	2	3
A2	0	0	1	4
B1	4	1	0	0
B2	3	2	0	0
C1	0	2	3	0
C2	0	2	2	1
D1	5	0	0	0
D2	4	1	0	0

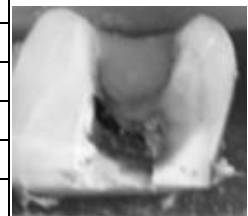
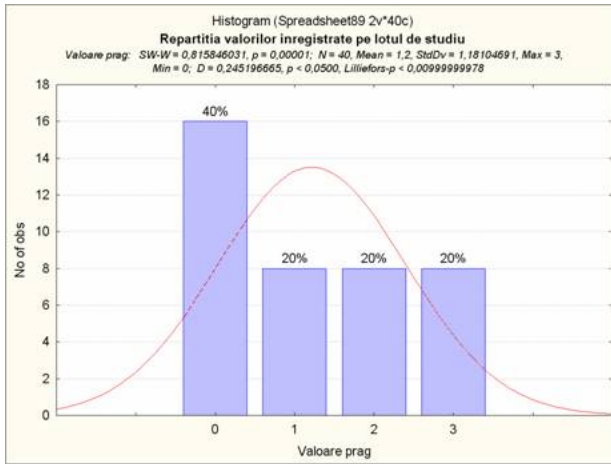


Fig. 3



Graph 1: Tooth repartition according to leakage values

method of preparation of the cavity surfaces was used, as in subgroup A2, 4 of the 5 studied samples showed the penetration of the colorant beyond the enamel/dentine junction. Lower values of the colorant penetration were registered in group B in comparison to group C, as the fluid/air abrasion device ensured a better marginal sealing, and in group C, 5 samples scored 2 and even 3. The best results were obtained by group D1, where the use of the 2 devices and the additional association of the acid conditioning of the enamel led to the total absence of leakage. Eventually it may be noticed that in all study groups, leakage scored were higher in subgroups no. 2 than groups no. 1 – which benefited from an additional conditioning of the enamel, which supports the daily clinical necessity of improving the adhesion of the

Table 3: Correlation between the restorative technique and the minimum/maximum val-

GROUP	NO. OF CASES				TEST χ^2 FOR THE LEAKAGE ABSENCE- TECH- NIQUE	TEST χ^2 FOR THE MAXIMUM LEAKAGE- TECHNIQUE
	0	1	2	3		
A1	0	0	2	3		OR = 9,00 In(OR) = 0,13 - 4,26 p = 0,016827
A2	0	0	1	4	p = 0,050962	OR = 31,00 In(OR) = 0,96 - 5,91 p = 0,000336
B1	4	1	0	0	OR = 29,57 In(OR) = 1,11 - 5,66 p = 0,0001941	
B2	3	2	0	0	OR = 2,54 In(OR) = -1,02 - 2,89 p = 0,329114	
C1	0	2	3	0	OR = 1,73 In(OR) = -0,93 - 2,02 p = 0,456057	
C2	0	2	2	1	p = 0,050962	OR = 0,43 In(OR) = -3,28 - 1,58 p = 0,299387
D1	5	0	0	0	p = 0,003173	
D2	4	1	0	0	OR = 7,67 In(OR) = -0,31 - 4,38 p = 0,050962	
AIR ABRASION					p = 0,000001	
PROPHYJET					OR = 1,52 In(OR) = -0,88 - 1,72 p = 0,518605	
ETCHING					OR = 1,52 In(OR) = -0,88 - 1,72 p = 0,518605	

state-of-art selfetching adhesive agents through an additional conditioning of the enamel margins.

This statistical interpretation proves that the absence of etching takes to a maximum gap (p=0,00336) (tab. 3), and the aqua/air abrasion determines the absence of

leakage as shown by significant statistical values (p=0,00001). Table 4 shows that the highest correlation exists between B1 and D1 techniques (p=0,032) and between B1 and D2 (p=0,000001).

The composite resins are being chosen to an increasing extent as material for the restoration of occlusal cavity lesions, as they are aesthetic and avoid the controversies regarding toxicity of mercury, as they are good thermal isolators and have the capacity of adhering to hard dental tissues [6]. Obtaining an optimum marginal sealing is the “golden standard” in restorations carried out with composite resins on the occlusive surfaces of molars and premolars[7].

The conclusions of the literature are contradictory regarding the necessity of acid etching after the use of air abrasive devices. While few articles state that results are similar regarding the state of the enamel margins after etching and after air abrasion[8,9], most authors state that by combining the 2 techniques, microleakage decreases and adhesion increases[10,11,12], which is confirmed by our study that nonetheless used the Aquabrasion device in premiere.

Yet, ProphyJet Cavitron (DeTrey Dentsply) device proved to be less efficient in achieving the marginal sealing but its quality was higher than in the group for which we carried out only acid conditioning. As for the use of adhesive systems, most studies demonstrate that the sealing of enamel margins of the restorations for which monocomponent selfetching adhesives were used is inferior to the one achieved in the 2-steps system[13,14] or the 3-steps traditional one[15,16], which is supported by the results obtained by us in the present study. Let us not forget that adhesion to the dentine remains the true “Achilles’ heel” in sealing the composite resin restorations, but it depends on the sealing obtained in the enamel margins.

Conclusions

The obtained results have demonstrated that the marginal sealing has improved statistically significantly, by using one of the two systems : aqua/air abrasion or ProphyJet to which has been added the supplementary etching of enamel’s margins.

References

Table 4: Correlations between the results of the techniques(Spreadsheet1.sta) Marked correlations are significant at p < ,05000

	C1	C3	D1	D2
A1	-,0370 p=,963	,1741 p=,826	-,5556 p=,444	-,7337 p=,266
A2	-,3815 p=,618	-,0460 p=,954	-,4402 p=,560	-,5814 p=,419
B1	-,4989 p=,501	-,7817 p=,218	,9685 p=,032	1,0000 p=---
B2	-,3333 p=,667	-,5222 p=,478	,7778 p=,222	,9098 p=,090

1. Andrian S. WHO communication about the epidemiology of caries in some regions of Romania. Oral communication in the Congress: Romanian-Belgium scientific days, Iasi, Romania, 2003
2. Pretty IA. Caries detection and diagnosis: Novel technologies: Journal of Dentistry 2006; 34:727-739
3. Christensen GJ. Tooth sensitivity related to class I and II resin restorations. JADA 1996; 127, 4: 495-498.
4. Chan KM, Tay FR, King, King NM, Imazato S, Pashley DH. Bonding of mild self-etching primers/adhesives to dentin with thick smear layers. Am J Dent 2003;16: 340-346
5. Tay FR, Pashley DH, Suh BI, Carvalho RM, Itthagarun A. Single step adhesive are permeable membranes. J Dent 2002;30:371-382
6. Summit JB, Robbins WJ, Hilton TJ, Schwartz RS. Fundamentals of Operative Dentistry; 2006: Direct posterior esthetic restorations 289-340
7. Jordan RE, Suzuki M. Posterior composite restorations. Where and how they work best. J Am Dent Assoc 1991; 122: 30-37
8. Manhart J, Huth KC, Chen H, Hickel R. Influence of the pretreatment of occlusal pits and fissures on the retention of a fissure sealant. Am J Dent 2004;17(1):12-8
9. Fábio Renato Manzolli Leite; Ticiano Sidorenko de Oliveira Capote; Angela Cristina Cilense Zuanon Application of the total etching technique or self-etching primers on primary teeth after air abrasion Braz. oral res. vol.19 no.3 São Paulo July/Sept. 2005
10. Guirguis R, Lee J, Conry J. Microleakage evaluation of restorations prepared with air abrasion. Pediatr Dent 1999;21(6):311-5.
11. Hannig M, Femeirling T. Influence of air-abrasion treatment on the interfacial bond between composite and dentin. Oper Dent 1998;23(5):258-65. Ellis RW, Latta MA, Westerman GH. Effect of air abrasion and acid etching on sealant retention: an in vitro study. Pediatr Dent 1999;21(6):316-9.
12. Yazici AR, Kiremitçi A, Celik C, Ozgünaltay G, Dayangaç B. A two-year clinical evaluation of pit and fissure sealants placed with and without air abrasion pretreatment in teenagers. J Am Dent Assoc. 2006 Oct;137(10):1401-5
13. Inoue S, Vargas MA, Abe Y, et al. Microtensile bond strength of eleven contemporary adhesives to dentin. J Adhes Dent 2001;3:237-245
14. Labella R, Van Meerbeek B, Yoshida Y, et al. Marginal gap distribution of two-step versus three-step adhesive systems. Trans Acad Dent Mat 1998;77:910
15. Tay FR, Gwinnett AG, Pang KM, Wei SHY. Structural evidence of a sealed tissue interface with a total etch wet-bonding technique in vivo. J Dent Res 1994;73:629-636
16. Chan KM, Tay FR, King NM, Imazato S, Pashley DH. Bonding of mild self-etching primers/adhesives to dentin with thick smear layers. Am J Dent 2003; 16:340-346.

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ИССЛЕДОВАНИЕ ВЛИЯНИЯ МЕТОДОВ ПРЕПАРИРОВАНИЯ КАРИОЗНЫХ ПОЛОСТЕЙ НА
МАРГИНАЛЬНОЕ СОЕДИНЕНИЕ ПРИ КОМПОЗИТНЫХ РЕСТАВРАЦИЯХ

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Аннотация:

Лечение кариеса жевательных поверхностей требует специальный терапевтический подход из-за характерных морфологических и клинко-терапевтических особенностей этих зон. По актуальным методам для щадящего препарирования поверхностей можем использовать воздушно-водно-абразивный метод (Fluid-air-abrazion) или Prophjet. При реставрации композитами используется адгезивная моносистема VII генерации, которая оказывается имеет некоторые недостатки в сравнении с трёхэтапной системой. Цель нашей работы исследовать маргинальное адгезивное соединение при композитных реставрациях колориметрическим методом в разных клинических ситуациях, используя адгезивную моносистему VII генерации или ту же систему плюс дополнительное кислотное протравливание. При статистическом анализе результаты демонстрируют что маргинальное соединение значительно ухудшается когда используется один из двух методов применяемых нами совместно с дополнительным протравливанием эмали.

Ключевые слова:

кариес жевательных поверхностей, воздушно-водно-абразивный метод, адгезивная моносистема VII генерации, маргинальное адгезивное соединение

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BASIC RESEARCH REGARDING SILICONIC MATERIALS IN DENTAL
MEDICINE

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Abstract:

This study regarding the fundamental research in silicone materials field used by facial prosthesis and implanto-prosthetic therapy. The aim of the study is concerned with the synthesis and analysis of a new siliconic material with various excess materials, these aspects being necessary because of the different types of underlying tissue. We tests in same condition the mechanical properties of new materials and examination the stress distribution on residual alveolar ridge New silicone based materials having a higher biocompatibility as compared with those commercially available have been prepared and used for improvement of the removable dentures' structure, but also for their lining.

Key words:

new siliconic material, mechanical properties, biocompatibility, facial prosthesis, implanto-prosthetic therapy

Introduction

The terrible clinical reality of the total and subtotal edentulous seen from the impact on the patient's general status

point of view, with extremely serious perturbations upon the body scheme, in relation with the variety of clinical situations and always influenced by present social aspects, all these are just a few directions that argue for the necessity of the present study which is aimed at optimising both the clinical and technological level, with the differentiation of the interrelation between the two sides of the prosthetics therapy.

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