

## EFICÁCIA DO AJUSTE OCLUSAL EM RESTAURAÇÕES DE LESÕES CERVICAIS NÃO CARIOSAS POR MECANISMOS DE TENSÃO: REVISÃO SISTEMÁTICA

Carine Nepomuceno Guimarães<sup>1</sup> (Pesquisador bolsista: PROBIC/Unit), e-mail: carine.nepomuceno@gmail.com;

Ana Cláudia Ramos Pinto<sup>1</sup> (Pesquisador voluntário: PROBIC-Unit), e-mail: anaclaudiaramosp@gmail.com;

Idiane Bianca Lima Soares Rusu<sup>1</sup> (Orientador), e-mail: idianeblsoares@gmail.com.

Centro Universitário Tiradentes<sup>1</sup>/Odontologia/Maceió, AL.

4.00.00.00-1 - Ciências da Saúde 4.02.00.00-0 - Odontologia

### RESUMO:

**Introdução:** Lesões cervicais não-cariosas (LCNCs), se caracterizam pela perda de tecido duro na junção amelocementária na ausência de cárie, são comumente encontradas na prática odontológica com prevalência de até 85% na população adulta, causando hipersensibilidade dentinária (HD), dor e em alguns casos até implicações psicossociais. Têm etiologia multifatorial compreendendo tensão, fricção e biocorrosão, sendo comumente encontradas nos pré-molares e molares com prevalência e gravidade diretamente proporcional a idade. **Objetivo:** Identificar por meio de revisão sistemática se o ajuste oclusal realizado após os recobrimentos de lesões cervicais não-cariosas, melhora as taxas de retenção e longevidade dessas restaurações em pacientes adultos.

**Material e métodos:** O estudo é do tipo revisão sistemática de ensaios clínicos aleatórios e quase-aleatórios que responda ao objetivo do tema proposto. Foram utilizados as bases de dados: MEDLINE, Scopus, Web of Science, BBO Biblioteca, Biblioteca Cochrane, SIGLE, Pubmed, artigos publicados em inglês durante os anos de 2009 a 2019. Foram incluídos ensaios clínicos randomizados que comparem a eficácia clínica das restaurações cervicais não cariosas com e sem ajuste oclusal nas restaurações diretas de resina composta em LCNC na dentição permanente. Foram consideradas pertinentes trinta e oito referências e utilizadas trinta e uma neste estudo. Para avaliação da qualidade dos estudos foi a ferramenta risco de viés da colaboração Cochrane.

**Resultados e Discussão:** Dos artigos disponíveis apenas um estudo transversal elencou o contato oclusal prematuro como fator de risco para a prevalência das LCNC. Impossibilitando dessa forma, uma análise detalhada acerca das taxas de retenção e longevidade dessas restaurações. Os artigos de revisão e ensaios clínicos disponíveis, descrevem os sistemas adesivos, etapas de acabamento e polimento e, a aplicação de clorexidina após o condicionamento ácido como fatores responsáveis pela longevidade e retenção das restaurações de LCNC. Além disso, nenhum grupo analisado mostrou alterações significativas dessas taxas até doze meses, variando de forma pouco expressiva a partir dos 24 e 36 meses. **Conclusão:** Os estudos sugerem que a

longevidade clínica das restaurações de LCNC está diretamente relacionada às características do remanescente dentário, escolha adequada e correta aplicação do sistema adesivo, bem como a execução da etapa de acabamento e polimento.

**Palavras-chave:** Ajuste Oclusal, Desgaste dos dentes, Odontologia baseada em evidências.

## **ABSTRACT:**

**Introduction:** Noncarious cervical lesions (NCNCs), characterized by the loss of hard tissue at the cemento-enamel junction in the absence of caries, are commonly found in dental practice with prevalence of up to 85% in the adult population, causing dentin hypersensitivity (HD), pain, and in some cases even psychosocial implications. They have a multifactorial etiology comprising tension, friction and biocorrosion, being commonly found in premolars and molars with prevalence and severity directly proportional to age.

**Objective:** To identify through a systematic review whether occlusal adjustment performed after noncarious cervical lesion coverings improves retention rates and longevity of these restorations in adult patients. **Material and methods:** The study is a systematic review of randomized and quasi-randomized clinical trials that responds to the objective of the proposed theme. The following databases were used: MEDLINE, Scopus, Web of Science, BBO Library, Cochrane Library, SIGLE, Pubmed, articles published in English from 2009 to 2019. Randomized controlled trials comparing the clinical efficacy of cervical restorations were included. non-carious with and without occlusal adjustment in direct restorations of composite LCNC resin in permanent dentition. Thirty-eight references were considered pertinent and thirty-one were used in this study. To assess the quality of the studies was the risk bias tool of the Cochrane collaboration. **Results and Discussion:** Of the available articles, only one cross-sectional study listed premature occlusal contact as a risk factor for the prevalence of LCNC. This precluding a detailed analysis of the retention rates and longevity of these restorations. Review articles and clinical trials available describe adhesive systems, finishing and polishing steps, and chlorhexidine application after acid etching as factors responsible for the longevity and retention of LCNC restorations. In addition, no group analyzed showed significant changes in these rates up to twelve months, varying slightly from 24 to 36 months. **Conclusion:** The studies suggest that the clinical longevity of LNC restorations is directly related to the characteristics of the dental remnant, appropriate choice and correct application of the adhesive system, as well as the execution of the finishing and polishing step.

**Keywords:** Occlusal Adjustment, Teeth wear, Evidence-based dentistry.

## **Referências/references:**

1. Wood ID, Kassir ASA, Brunton PA. Effect of Lateral Excursive Movements on the Progression of Abfraction Lesions. Operative Dentistry. 1º de maio de 2009;34(3):2739.
2. Brandini DA, Trevisan CL, Panzarini SR, Pedrini D. Clinical evaluation of the association between noncarious cervical lesions and occlusal forces. The Journal of Prosthetic Dentistry. 1º de novembro de 2012;108(5):298–303.
3. Gillam DG. Current diagnosis of dentin hypersensitivity in the dental office: an overview. Clin Oral Investig. março de 2013;17 Suppl 1:S21-29.

4. Martens LC. A decision tree for the management of exposed cervical dentin (ECD) and dentin hypersensitivity (DHS). *Clin Oral Investig.* março de 2013;17 Suppl 1:S77-83.
5. Qin W, Song Z, Ye Y-Y, Lin Z-M. Two-year clinical evaluation of composite resins in non-carious cervical lesions. *Clin Oral Invest.* abril de 2013;17(3):799–804.
6. Rocha Gomes Torres C, Barcellos DC, Batista GR, Pucci CR, Antunes MJS, de La Cruz DB, et al. Five-year clinical performance of the dentine deproteinization technique in non-carious cervical lesions. *J Dent.* julho de 2014;42(7):816–23.
7. Häfer M, Jentsch H, Haak R, Schneider H. A three-year clinical evaluation of a one-step self-etch and a two-step etch-and-rinse adhesive in non-carious cervical lesions. *J Dent.* março de 2015;43(3):350–61.
8. Loguercio AD, Luque-Martinez I, Lisboa AH, Higashi C, Queiroz VAO, Rego RO, et al. Influence of Isolation Method of the Operative Field on Gingival Damage, Patients' Preference, and Restoration Retention in Noncarious Cervical Lesions. *Oper Dent.* dezembro de 2015;40(6):581–93.
9. Luque-Martinez I, Muñoz MA, Mena-Serrano A, Hass V, Reis A, Loguercio AD. Effect of EDTA conditioning on cervical restorations bonded with a self-etch adhesive: A randomized double-blind clinical trial. *J Dent.* setembro de 2015;43(9):1175–83.
10. Campos MLG, Tomazi P, Távora de Albuquerque Lopes AC, Quartaroli Téó MA, Machado da Silva JK, Luna Colombini Ishikiriyama B, et al. The influence of primary occlusal trauma on the development of gingival recession. *Revista Clínica de Periodoncia, Implantología y Rehabilitación Oral.* 1º de dezembro de 2016;9(3):271–6.
11. Corral C, Grez PV, Letelier M, Dos Campos EA, Dourado AL, Fernández GE. Effect of Oxalic Acid-Based Desensitizing Agent on Cervical Restorations on Hypersensitive Teeth: A Triple-Blind Randomized Controlled Clinical Trial. *J Oral Facial Pain Headache.* Fall de 2016;30(4):330–7.
12. Sampaio CS, Rodrigues RV, Souza-Junior EJ, Freitas AZ, Ambrosano GMB, Pascon FM, et al. Effect of Restorative System and Thermal Cycling on the Tooth-Restoration Interface - OCT Evaluation. *Oper Dent.* abril de 2016;41(2):162–70.
13. Sawlani K, Lawson NC, Burgess JO, Lemons JE, Kinderknecht KE, Givan DA, et al. Factors influencing the progression of noncarious cervical lesions: A 5-year prospective clinical evaluation. *The Journal of Prosthetic Dentistry.* 1º de maio de 2016;115(5):571–7.
14. Cieplik F, Scholz KJ, Tabenski I, May S, Hiller K-A, Schmalz G, et al. Flowable composites for restoration of non-carious cervical lesions: Results after five years. *Dental Materials.* dezembro de 2017;33(12):e428–37.
15. Del Perpetuo Socorro Mendiburu Zavala CE, Mendiburu JC, Lugo-Ancona P. Relationship between traumatic occlusion and abfractions; their role in pulp disease. *Revista Odontológica Mexicana.* 1º de abril de 2017;21(2):e80–5.
16. Favetti M, Schroeder T, Montagner AF, Correa MB, Pereira-Cenci T, Cenci MS. Effectiveness of pre-treatment with chlorhexidine in restoration retention: A 36-month follow-up randomized clinical trial. *J Dent.* maio de 2017;60:44–9.
17. Femiano F, Femiano R, Lanza A, Lanza M, Perillo L. Effectiveness on oral pain of 808-nm diode laser used prior to composite restoration for symptomatic non-carious cervical lesions unresponsive to desensitizing agents. *Lasers Med Sci.* janeiro de 2017;32(1):67–71.
18. Leal NMS, Silva JL, Benigno MIM, Bemerguy EA, Meira JBC, Ballester RY. How mechanical stresses modulate enamel demineralization in non-carious cervical lesions? *Journal of the Mechanical Behavior of Biomedical Materials.* fevereiro de 2017;66:50–7.
19. May S, Cieplik F, Hiller K-A, Buchalla W, Federlin M, Schmalz G. Flowable composites for restoration of non-carious cervical lesions: Three-year results. *Dental Materials.* março de 2017;33(3):e136–45.
20. Sugita I, Nakashima S, Ikeda A, Burrow MF, Nikaido T, Kubo S, et al. A pilot study to assess the morphology and progression of non-carious cervical lesions. *Journal of Dentistry.* 1º de fevereiro de 2017;57:51–6.
21. Tuncer D, Çelik Ç, Yamanel K, Arhun N. Clinical evaluation of microhybrid composites in noncarious cervical lesions: 24-month results. *Nigerian Journal of Clinical Practice.* 1º de fevereiro de 2017;20(2):176.
22. Tuncer D, Çelik Ç, Yamanel K, Arhun N. Clinical evaluation of microhybrid composites in noncarious cervical lesions: 24-month results. *Nigerian Journal of Clinical Practice.* 1º de janeiro de 2017;20(2):176-181–181.

23. Yoshizaki KT, Francisconi-dos-Rios LF, Sobral MAP, Aranha ACC, Mendes FM, Scaramucci T. Clinical features and factors associated with non-carious cervical lesions and dentin hypersensitivity. *J Oral Rehabil.* fevereiro de 2017;44(2):112–8.
24. Hussainy SN, Nasim I, Thomas T, Ranjan M. Clinical performance of resin-modified glass ionomer cement, flowable composite, and polyacid-modified resin composite in noncarious cervical lesions: One-year follow-up. *Journal of Conservative Dentistry.* 1º de setembro de 2018;21(5):510.
25. Moraschini V, da Costa LS, dos Santos GO. Effectiveness for dentin hypersensitivity treatment of non-carious cervical lesions: a meta-analysis. *Clin Oral Invest.* março de 2018;22(2):617–31.
26. Sabrah AH, Turssi CP, Lippert F, Eckert GJ, Kelly AB, Hara AT. 3D-Image analysis of the impact of toothpaste abrasivity on the progression of simulated non-carious cervical lesions. *Journal of Dentistry.* 1º de junho de 2018;73:14–8.
27. Santamaria MP, Silveira CA, Mathias IF, Neves FL da S, Santos LM, Jardini MAN, et al. Treatment of single maxillary gingival recession associated with non-carious cervical lesion: Randomized clinical trial comparing connective tissue graft alone to graft plus partial restoration. *J Clin Periodontol.* agosto de 2018;45(8):968–76.
28. Teixeira DNR, Zeola LF, Machado AC, Gomes RR, Souza PG, Mendes DC, et al. Relationship between noncarious cervical lesions, cervical dentin hypersensitivity, gingival recession, and associated risk factors: A cross-sectional study. *Journal of Dentistry.* 1º de setembro de 2018;76:93–7.
29. Alvarez-Arenal A, Alvarez-Menendez L, Gonzalez-Gonzalez I, Alvarez-Riesgo JA, Brizuela-Velasco A, deLlanos-Lanchares H. Non-carious cervical lesions and risk factors: A case-control study. *J Oral Rehabil.* janeiro de 2019;46(1):65–75.
30. Caneppele TMF, Meirelles LCF, Rocha RS, Gonçalves LL, Ávila DMS, Gonçalves SE de P, et al. A 2-year clinical evaluation of direct and semi-direct resin composite restorations in non-carious cervical lesions: a randomized clinical study. *Clin Oral Invest* [Internet]. 11 de julho de 2019.
31. De Souza LC, Rodrigues NS, Cunha DA, Feitosa VP, Santiago SL, Reis A, et al. Two-year clinical evaluation of proanthocyanidins added to a two-step etch-and-rinse adhesive. *Journal of Dentistry.* fevereiro de 2019;81:7–16.
32. Favaro Zeola L, Soares PV, Cunha-Cruz J. Prevalence of dentin hypersensitivity: Systematic review and meta-analysis. *Journal of Dentistry.* 1º de fevereiro de 2019;81:1–6.
33. Koc Vural U, Meral E, Ergin E, Gürgen S. Twenty-four-month clinical performance of a glass hybrid restorative in non-carious cervical lesions of patients with bruxism: a split-mouth, randomized clinical trial. *Clin Oral Investogation.*
34. Oz FD, Kutuk ZB, Ozturk C, Soleimani R, Gurgan S. An 18-month clinical evaluation of three different universal adhesives used with a universal flowable composite resin in the restoration of non-carious cervical lesions. *Clin Oral Invest.* março de 2019;23(3):1443–52.