EQUIA

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Glass Ionomer based restorative system for Long Term Restorations

Glass Ionomer

EQUIA

References – Clinical studies

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TITLE	**Clinical performance of a new glass ionomer-based restoration system: a retrospective cohort study**
REFERENCE	Friedl K *et al.* Dent Mater. 2011. 27(10):1031-1037. doi: 10.1016/j.dental.2011.07.004
After 2 years, EQUIA proved to be a reliable material for permanent Class I (any size) and small class II restorations.	
Number of Patients evaluated: 43 patients Number of Restorations: 26 class I; 125 class II restorations	

TITLE	**Two-year study on the clinical performance of the glass ionomer based restorative system EQUIA**
REFERENCE	Gurgan S *et a*l. J Min Interv Dent. 2013. 6(6). https://journals.co.za/doi/abs/10.10520/EJC145773
EQUIA showed a high clinical performance when compared to a micro-hybrid composite (Gradia Direct Posterior) in class I cavities over a 2-year follow-up.	
Number of Patients evaluated: 30 patients Number of Restorations: 60 restorations	

TITLE	**One-year survival of ART and conventional restorations in patients with disability**
REFERENCE	Molina G *et al*. BMC Oral Health. 2014. 14:49. doi: 10.1186/1472-6831-14-49
The survival rates of ART and CRT (conventional restorative treatment) restorations were 97.8% and 90.5%, respectively. ART and EQUIA survived longer than composite restorations.	
Number of Patients evaluated: 66 patients Number of Restorations: 298 restorations	

TITLE	**One-year comparative clinical evaluation of EQUIA with resin-modified glass ionomer and a nanohybrid composite in non-carious cervical lesions**
REFERENCE	Vaid DS *et al.* J Conserv Dent. 2015. 18(6):449-452. doi: 10.4103/0972-0707.168805
After 1-year EQUIA performed as good as the nanohybrid composite (Tetric N-Ceram).	
Number of Patients evaluated: 29 patients Number of Restorations: 87 restorations	

References – Clinical studies

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TITLE	**Four-year randomized clinical trial to evaluate the clinical performance of a glass ionomer restorative system**
REFERENCE	Gurgan S *et al.* Oper Dent. 2015. 40(2):134-143. doi: 10.2341/13-239-C
EQUIA performed as successfully as the micro-hybrid composite (Gradia Direct Posterior) in class I and II restorations.	
Number of Patients evaluated: 59 patients **Number of Restorations: 80 class I; 60 class II restorations**	

TITLE	**Bilayer technique and nano-filled coating increase success of approximal ART restorations: a randomized clinical trial**
REFERENCE	Hesse D *et al.* Int J Paediatr Dent. 2016. 26(3):231-239. doi: 10.1111/ipd.12194
After 36 months, the survival rate of the approximal ART restorations was positively influenced by the bilayer technique.	
Number of Patients evaluated: 208 patients	

TITLE	**Clinical performance during 48 months of two current glass ionomer restorative systems with coatings: a randomized clinical trial in the field**
REFERENCE	Klinke T *et al*. Trials. 2016. 17(1):239. doi: 10.1186/s13063-016-1339-8
In class II fillings, EQUIA with coating performed better, with fewer failures in all the follow-up intervals, compared to Fuji IX GP.	
Number of Patients evaluated: 643 patients **Number of Restorations: 1006 restorations**	

TITLE	**Clinical performance of a glass ionomer restorative system: a 6-year evaluation**
REFERENCE	Gurgan S *et al.* Clin Oral Investig. 2017. 21:2335-2343. doi: 10.1007/s00784-016-2028-4
EQUIA presented a high clinical performance and is a reliable choice for posterior restorations when compared to a micro-hybrid composite (Gradia Direct Posterior).	
Number of Patients evaluated: 59 patients **Number of Restorations: 80 class I; 60 class II restorations**	

References – Clinical studies

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TITLE	**A prospective six-year clinical study evaluating reinforced glass ionomer cements with resin coating on posterior teeth: quo vadis?**
REFERENCE	Türkün S *et al.* Oper Dent. 2016. 41(6):587-598. doi.org/10.2341/15-331-C
The overall clinical performance of EQUIA after 6 years was excellent when compared to Riva Self Cure, including in large posterior Class II restorations.	
Number of Patients evaluated: 54 patients **Number of Restorations: 256 restorations**	

TITLE	**7 Years, multicenter, clinical evaluation on 154 permanent restorations made with a glass ionomer-based restorative system**
REFERENCE	Basso M *et al. 2016.* J Dent Res Vol 95 (Spec Iss B): 0446. https://iadr.abstractarchives.com/abstract/16iags-2474719/7-years-multicentre-clinical-evaluation-on-154-permanent-restorations-made-with-a-glassionomer-based-restorative-system
EQUIA is a trustable option for class I, II and V restorations, including load bearing tooth surfaces of molars and premolars.	
Number of Patients evaluated: 124 patients **Number of Restorations: 154 restorations**	

TITLE	**Clinical performance of heat-cured high-viscosity glass ionomer class II restorations in primary molars: A preliminary study**
REFERENCE	Tal E *et al.* J Clin Pediatr Dent. 2017. 41(4):264-270. doi: 10.17796/1053-4628-41.4.264
After 22 months, 97% of the restorations were rated optimal for marginal integrity and no staining of the restoration surfaces was recorded. None of the patients complained of post-operative sensitivity.	
Number of Patients evaluated: 44 patients **Number of Restorations: 93 restorations**	

TITLE	**Randomized clinical trial of ART class II restorations using two glass ionomer cements: One-year follow-up**
REFERENCE	de França CMC *et al.* Pediatr Dent. 2018. 40(2):98-104.
Class II ART restorations with EQUIA showed higher survival rates compared to those with glass carbomer. The overall success rates for EQUIA was 86% while for GP Glass Fill it was 56%.	
Number of Patients evaluated: 33 patients **Number of Restorations: 59 restorations**	

References – Clinical studies

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TITLE	**Three-year survival of ART high-viscosity glass-ionomer and resin composite restorations in people with disability**
REFERENCE	Molina F *et al.* Clin Oral Inv. 2018. 22(1):461-467. doi: 10.1007/s00784-017-2134-y
The cumulative survival rates for the 182 ART and EQUIA and 116 CRT (conventional restorative treatment) and Filtek-Z250 restorations were 94.8 ± 2.1 and 82.8 ± 5.3%, respectively.	
Number of Patients evaluated: 66 patients **Number of Restorations: 298 restorations**	

TITLE	**Clinical evaluation of micro-hybrid composite and glass ionomer restorative material in permanent teeth**
REFERENCE	Kharma K *et al.* J Contemp Dent Pract. 2018. 19(2):226-232. doi: 10.5005/jp-journals-10024-2241
After 9 months, this split-mouth study design showed that EQUIA is a trustable alternative to micro-hybrid composite (Amelogen Plus) for class I cavities in permanent teeth.	
Number of Patients evaluated: 12 patients **Number of Restorations: 40 restorations**	

TITLE	**Glass carbomer and compomer for ART restorations: 3-year results of a randomized clinical trial**
REFERENCE	Olegário C *et al.* Clin Oral Investig. 2019. 23(4):1761-1770. doi: 10.1007/s00784-018-2593-9
The survival rates of EQUIA were 83% (Class I) and 56% (Class II). EQUIA performed as good as compomer in ART restorations in primary molars.	
Number of Patients evaluated: 568 patients **Number of Restorations: 274 Class I ; 284 Class II restorations**	

TITLE	**Randomized clinical trial of class II restoration in permanent teeth comparing ART with composite resin after 12 months**
REFERENCE	Menezes-Silva R *et a*l. Clin Oral Investig. 2019. 23:3623-3635. doi: 10.1007/s00784-018-2787-1
EQUIA performed as good as the composite (Filtek-Z350), with a success rate of 95.8%.	
Number of Patients evaluated: 154 patients **Number of Restorations: 154 restorations**	

References – Clinical studies

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TITLE	**Three-year clinical evaluation of high-viscosity glass ionomer restorations in non-carious cervical lesions: a randomized controlled split-mouth clinical trial**
REFERENCE	Celik U *et al.* Clin Oral Investig. 2019. 23(3):1473-1480. doi: 10.1007/s00784-018-2575-y
The 3-year clinical performance of EQUIA restorations in non-retentive lesions was satisfactory.	
Number of Patients evaluated: 22 patients **Number of Restorations: 134 restorations**	

TITLE	**Long-term clinical performance of heat-cured high-viscosity glass ionomer class II restorations versus resin-based composites in primary molars: a randomized comparison trial**
REFERENCE	Kupietzky A *et al.* Eur Arch Pediatric Dent. 2019. 20:451-456. doi: 10.1007/s40368-019-00423-x
EQUIA performed as good as the composite (Filtek P-60) and is a trustable option for proximal lesions in primary molars, with 83% of the restorations functioning up to 36 months.	
Number of Patients evaluated: 45 patients **Number of Restorations: 70 restorations**	

TITLE	**Three-year randomized clinical trial evaluating ART and composite resin restorations**
REFERENCE	Menezes-silva I *et al.* J Dent Res Vol 98 (Spec Iss A):3732. https://iadr.abstractarchives.com/abstract/19iags-3179183/three-year-randomized-clinical-trial-evaluating-art-and-composite-resin-restorations
ART and EQUIA restorations performed as successfully as composite (Filtek-Z350) in Class II restorations.	
Number of Patients evaluated: 154 patients **Number of Restorations: 154 restorations**	

TITLE	**Five-year follow-up of ART and CRT in patients with disability**
REFERENCE	Molina G *et al.* J Dent Res Vol 98 (Spec Iss A): 1357. https://iadr.abstractarchives.com/abstract/19iags-3175984/five-year-follow-up-of-art-d-crt-in-patients-with-disability
Survival probability percentages were significantly hanigher for ART-GIC (EQUIA or Chemfil Rock) (90.2%) than for CRT (conventional restorative treatment with Filtek Z350) restorations (82.8%) after 5 years.	
Number of Patients evaluated: 66 patients **Number of restorations: 298 restorations**	

References – Clinical studies

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TITLE	**High-viscosity glass-ionomer vs. composite resin restorations in persons with disability: Five-year follow-up of clinical trial**
REFERENCE	Molina G *et al.* J Braz Oral Res. 2019. 33:e099 https://doi.org/10.1590/1807-3107bor-2019.vol33.0099
ART and GIC (EQUIA or Chemfil Rock) method had higher longevity than conventional composite (Filtek-Z350).	
Number of Patients evaluated: 66 patients **Number of Restorations: 298 restorations**	

TITLE	**A 3-year controlled randomized clinical study on the performance of two glass ionomer cements in Class II cavities of permanent teeth**
REFERENCE	Fotiadou C *et al.* Quintessence Int. 2019. 50(8):592-602. doi: 10.3290/j.qi.a42692
EQUIA Fil and Fuji IX GP Fast performed similarly in Class II cavities in adult patients, exhibiting an overall survival rate of 89.3% and 88.0% respectively.	
Number of Patients evaluated: 34 patients **Number of Restorations: 85 restorations**	

TITLE	**Randomized clinical trial evaluating proximal retentions on ART restorations**
REFERENCE	Lopez L M *et al.* J Dent Res Vol 99 (Spec Iss A): 1523. https://iadr.abstractarchives.com/abstract/20iags-3321872/randomized-clinical-trial-evaluating-proximal-retentions-on-art-restorations
Success rates of EQUIA after 6 and 36 months without retentions: 90.3% and 51.6%; with retention: 95.9% and 61.0%, respectively.	
Number of Patients evaluated: 187 patients **Number of Restorations: 293 Class II restorations**	

TITLE	**A randomized controlled 10 years follow-up of a glass ionomer restorative material in class I and class II cavities**
REFERENCE	Gurgan S *et al.* J Dent. 2020. 94:103175. doi: 10.1016/j.jdent.2019.07.013
During the 10-year follow-up EQUIA showed an outstanding performance, comparable to the micro-hybrid composite (Gradia Direct Posterior). Success rates of Class I and II EQUIA restorations were 100%.	
Number of Patients evaluated: 59 patients **Number of Restorations: 80 Class I; 60 Class II restorations**	

References – Clinical studies

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TITLE	**Randomized clinical trial evaluating proximal retentions on Class II ART restorations**
REFERENCE	Gonçalves P *et al.* J Dent Res Vol 99 (Spec Iss A): 1525. https://iadr.abstractarchives.com/abstract/20iags-3320957/randomized-clinical-trial-evaluating-proximal-retentions-on-class-ii-art-restorations
Class II ART and EQUIA restorations with proximal retention grooves presented similar survival rates to non-grooves restorations. Success rates after 6, 12 and 24 months were 96%, 88% and 66% for group with retention and 97%, 89% and 71%, for non-retention group.	
Number of Patients evaluated: 183 patients **Number of Restorations: 300 Class II restorations**	

TITLE	**Three-year survival of class II restorations using two restorative materials**
REFERENCE	Molina G *et al.* J Dent Res Vol 99 (Spec Iss A): 1385. https://iadr.abstractarchives.com/abstract/20iags-3319042/three-year-survival-of-class-ii-restorations-using-two-restorative-materials
Class II restorations with ART and EQUIA presented the same 3-year cumulative survival percentages as the traditional method using composite (Filtek-Z250).	
Number of Patients evaluated: 85 patients **Number of Restorations: 169 restorations**	

TITLE	**Six-year results of a randomized controlled clinical trial of two glass ionomer cements in class II cavities**
REFERENCE	Heck K *et al.* J Dent. 2020. 97:103333. doi: 10.1016/j.jdent.2020.103333.
EQUIA is an acceptable restorative material for small class II cavities. The overall survival rate at 6 years was 81.8%.	
Number of Patients evaluated: 34 patients **Number of Restorations: 85 restorations**	

TITLE	**Evaluation of Glass-Ionomer versus Bulk-Fill Resin Composite: A Two-Year Randomized Clinical Study**
REFERENCE	Uzel I *et al.* Materials 2022, 15, 7271. Doi: 10.3390/ma15207271
At 2-year follow-up, EQUIA showed a good clinical performance, without differences compared to resin composite (Tetric EvoCeram). Survival rate for EQUIA Class I/II restorations was 97.1%	
Number of Patients evaluated: 30 patients **Number of Restorations: 70 restorations**	

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TITLE	**Carious Lesions and First Restorative Treatment**
REFERENCE	Adopted by FDI General Assembly September, 2019 in San Francisco, United States of America https://www.fdiworlddental.org/carious-lesions-and-first-restorative-treatment
This FDI policy statement gives guidance on treatment of caries in deciduous and permanent teeth differentiating the concepts of caries arrest and minimally invasive restorative concepts.	
FDI recognizes High Viscous Glass Ionomers as a class of restorative materials for primary teeth in single and smaller multi-surface cavities and when using the ART approach. For permanent teeth, in single surface cavities and Class II restorations.	

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TITLE	**Executive summary: the selection and use of essential medicines 2021**
REFERENCE	Report of the 23rd WHO Expert Committee on the selection and use of essential medicine https://www.who.int/publications/i/item/WHO-MHP-HPS-EML-2021.01
The executive summary reports the recommendations made by the Expert Committee for the 2021 update of the WHO Model List of Essential Medicines (EML) and the Model List of Essential Medicine for Children (EMLc).	
Glass ionomers were defined by WHO as an essential medicine, i.e. materials needed for a basic healthcare system.	