

Clinical Evaluation of 860 Anterior and Posterior Lithium Disilicate Restorations: Retrospective Study with a Mean Follow-up of 3 Years and a Maximum Observational Period of 6 Years



Giacomo Fabbri, DDS¹/ Fernando Zarone, MD, DDS²
 Gianluca Dellificorelli, DDS³/Giorgio Cannistraro, DDS⁴
 Marco De Lorenzi, DDS⁵/Alberto Mosca, DDS⁶
 Roberto Sorrentino, DDS, MSc, PhD⁷

This study aimed to assess the clinical performance of lithium disilicate restorations supported by natural teeth or implants. Eight hundred sixty lithium disilicate adhesive restorations, including crowns on natural teeth and implant abutments, veneers, and onlays, were made in 312 patients. Parafunctional patients were included, but subjects with uncontrolled periodontitis and gingival inflammation were excluded. Veneers up to 0.5 mm thick were luted with flowable composite resin or light curing cements, while dual-curing composite systems were used with veneers up to 0.8 mm thick. Onlays up to 2 mm in thickness were luted with flowable composite resins or dual-curing composite cements. Crowns up to 1 mm in thickness were cemented with self-adhesive or dual-curing resin cements. The observational period ranged from 12 to 72 months, with a mean follow-up of 3 years. The mechanical and esthetic outcomes of the restorations were evaluated according to the modified California Dental Association (CDA) criteria. Data were analyzed with descriptive statistics. Twenty-six mechanical complications were observed: 17 porcelain chippings, 5 fractures, and 4 losses of retention. Structural drawbacks occurred mainly in posterior segments, and monolithic restorations showed the lowest number of mechanical complications. The clinical ratings of the successful restorations, both monolithic and layered, were satisfactory according to the modified CDA criteria for color match, porcelain surface, and marginal integrity. The cumulative survival rates of lithium disilicate restorations ranged from 95.46% to 100%, while cumulative success rates ranged from 95.39% to 100%. All restorations recorded very high survival and success rates. The use of lithium disilicate restorations in fixed prosthodontics proved to be effective and reliable in the short- and medium-term. (Int J Periodontics Restorative Dent 2014;34:XX-XX. doi: 10.11607/prd.1769)

In recent decades, several types of all-ceramic systems have been developed to satisfy patients' esthetic demands. All-ceramic materials can be divided into two groups: silica based (feldspathic and glass-ceramics) and polycrystalline ceramics (alumina and zirconia).¹ Silica-based materials are characterized by etchability and translucency and ensure optimal esthetics, a natural appearance, and reliable clinical performances.² Conversely, polycrystalline ceramics are characterized by outstanding mechanical properties.³ Such materials are mostly indicated to produce fixed dental prostheses (FDPs) with four or more units in anterior and posterior areas. The low translucency of polycrystalline materials facilitates the treatment of discolored abutments.³ Data on strength, color stability, precision of fit, and clinical performance of alumina and zirconia are available in the literature.⁴⁻⁷

¹Private Practice, Cattolica, Italy.

²Professor and Chair, University "Federico II" of Naples, Naples, Italy.

³Private Practice, Rome, Italy.

⁴Private Practice, Castagnola delle Lanze, Italy.

⁵Private Practice, Padova, Italy.

⁶Private Practice, Brescia, Italy.

⁷Teaching and Research Assistant, University "Federico II" of Naples, Naples, Italy.

Correspondence to: Dr Giacomo Fabbri, Cattolica, Italy, Via del Porto 17 Cattolica (Rimini), 47841 Italy; fax + 39 0541 833322; email: fabbrigiaco@libero.it.

©2014 by Quintessence Publishing Co Inc.