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TITLE: A Systematic Review Of Clinical Success Of Ceramic Implants

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ABSTRACT BODY:

Objectives: The objective of this systematic review was to assess the published data concerning the short-term and midterm survival and success rates of ceramic dental implants (alumina, yttria-stabilized tetragonal zirconia polycrystals) and to describe the incidence of biological complications (implant loss, peri-implant disease).

Methods: An electronic search was conducted to identify prospective cohort and retrospective clinical studies, case series, as well as previous reviews on ceramic implants with a mean follow-up time of at least one year. The search was performed in the following databases: Medline, Cochrane Library, Biosis, Embase and Web of Science. Furthermore, the reference lists of related review articles selected for inclusion in this review were screened. The last search was conducted in January 2016. All studies were first reviewed by abstract and subsequently by full-text by two examiners independently.

Results: The electronic search yielded 1022 publications and 223 abstracts. Full-text analysis was performed for 50 articles resulting in a total of 36 clinical studies that fulfilled the inclusion criteria. Clinical studies using alumina dental implants showed survival/success rates in the range of 23% to 98%. The survival rates for zirconia implants range from 74-100% after 12-60 months, with success rates between 79.6-91.6% 6-12 months after functional loading.

Conclusions: Alumina implants do not perform satisfactorily and therefore it can be concluded that they should not be considered an alternative to titanium. Concerning the zirconia implants, the evidence available to date indicates that they are inferior to titanium implants with regard to survival and success rates. Zirconia implants with roughened surfaces though, might be a viable solution. More longitudinal clinical studies are necessary to substantiate the long-term clinical efficacy of zirconia in implant dentistry.

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TABLE FOOTER: (No Tables)

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