

Najeeb S; Zafar MS; Khurshid Z; Siddiqui F, Applications of polyetheretherketone (PEEK) in oral implantology and prosthodontics. Journal of prosthodontic research /20151028/

ABSTRACT: Polyetheretherketone (PEEK) is a polymer that has many potential uses in dentistry. The aim of this review was to summarize the outcome of research conducted on the material for dental applications. In addition, future prospects of PEEK in the field of clinical dentistry have been highlighted.

METHODS (STUDY SELECTION): An electronic search was carried out via the PubMed (Medline) database using keywords 'polyetheretherketone', 'dental' and 'dentistry' in combination. Original research papers published in English language in last fifteen year were considered. The studies relevant to our review were critically analyzed and summarized.

RESULTS: PEEK has been explored for a number of applications for clinical dentistry. For example, PEEK dental implants have exhibited lesser stress shielding compared to titanium dental implants due to closer match of mechanical properties of PEEK and bone. PEEK is a promising material for a number of removable and fixed prosthesis. Furthermore, recent studies have focused improving the bioactivity of PEEK implants at the nanoscale.

CONCLUSIONS: Considering mechanical and physical properties similar to bone, PEEK can be used in many areas of dentistry. Improving the bioactivity of PEEK dental implants without compromising their mechanical properties is a major challenge. Further modifications and improving the material properties may increase its applications in clinical dentistry.

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