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**Applications and Challenges of Artificial Intelligence in Prosthodontics:**  
**A Narrative review**

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**Abstract**

Artificial Intelligence (AI) is transforming the field of prosthodontics, offering unprecedented precision, efficiency, and personalized patient care. This manuscript explores the diverse applications of AI in prosthodontics, including enhanced diagnostic imaging, optimized treatment planning, computer-aided design and manufacturing (CAD/CAM), and predictive analytics. AI-driven tools facilitate better patient communication, improve diagnostic capabilities, and streamline workflows, leading to significant time and cost savings. Despite these advantages, the integration of AI in prosthodontics is not without challenges. High initial costs, technical complexity, data privacy concerns, and ethical issues present significant barriers. Additionally, the dependence on high-quality data and the risk of over-reliance on AI systems are discussed. This manuscript aims to provide a comprehensive overview of the benefits and drawbacks of AI in prosthodontics, emphasizing the need for balanced integration to enhance clinical outcomes and maintain the human touch in patient care. Ensuring ethical practices, continuous education, and robust data management are crucial for the responsible deployment of AI technologies in prosthodontics.

**Keywords:** Artificial Intelligence, Prosthodontics, Diagnostic Imaging, CAD/CAM, Predictive Analytics, Data Privacy, Ethical Issues.

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