Content available at: https://www.ipinnovative.com/open-access-journals

Journal of Oral Medicine, Oral Surgery, Oral Pathology and Oral Radiology

Journal homepage: www.joooo.org

Editorial

Artificial intelligence: Third eye in dentistry

Pradhuman Verma [1,*]

[1] *Dept. of Oral Medicine & Radiology Oral Pathology & Microbiology, Dr Ziauddin Ahmad Dental College & Hospital, Aligarh Muslim University, Aligarh, Uttar Pradesh, India*

ARTICLE INFO

Article history:
Received 28-08-2023
Accepted 05-09-2023
Available online 08-09-2023

Artificial intelligence (AI) is not a new word. Alan Turing wrote in one of his paper "Computing Machinery and Intelligence" in the 1950 issue of Mind:

"I believe that at the end of the century (20th), the use of words and general educated opinion will have altered so much that one will be able to speak of machines thinking without expecting to be contradicted."

The main component of AI is Machine. AI is not a myth, but rather it's the future of dentistry. It can be regarded as valuable tool to help clinicians and dentists for reducing their work load. AI is expanding and blooming rapidly in all sectors as it can learn from human expertise and undertake works requiring typically human intelligence. It is flourishing in everywhere in healthcare, with traditional dentistry gradually being transformed into digital dentistry. John McCarthy, defines AI as "the theory and development of systems of computers which are able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision making, and translation between languages". As technology of AI advances at a rapid pace, one can expect to see a growing impact of AI on future dentistry, as it provides enormous benefits to both dental surgeons and patients. AI has been adopted in all disciplines of dentistry. There are two paths of development of AI: machine learning (ML) and expert systems.

AI can also be classified as Weak AI and Strong AI.

1. Weak AI, or Narrow AI, uses a program trained to solve single or specific tasks. Today's AI is mostly weak AI. Examples included reinforcement learning, e.g., automated manipulation robots; AlphaGO; natural language processing, e.g., Google translation, and Amazon chat robot; computer vision, e.g., Tesla Autopilot, and face recognition; data mining, e.g., market customer analysis and personalised content recommendation on social media.
2. Strong AI refers to the ability and intelligence of AI equalling that of humans beings— it has its own behaviour and awareness as flexible as humans. Strong AI aims to create a multi-task algorithm to make decisions in many fields.

From a dental point of view, AI applications can be classified into diagnosis, decision-making, treatment planning, and prediction of treatment outcomes. Among all the applications of AI in dentistry, the most common one is diagnosis. AI can make more accurate and efficient diagnoses of dental pathologies, thus reducing workload of dental surgeons. In the speciality of Operative dentistry, several past studies prooved that AI has promising results in detection of early dental caries lesions, with same accuracy or even better compared with other methods. In Oral pathology, AI has been researched mostly for tumour and cancer detection based on radiographic, microscopic and

* *Corresponding author.*
E-mail address: pradhuman_verma@rediffmail.com (P. Verma).

https://doi.org/10.18231/j.jooo.2023.026

ultrasonographic images. Besides these, abnormal locations can also be detected from radiographs using AI, such as nerves in the oral cavity, interdigitated muscles of tongue, and parotid and salivary glands.

Hence, dental practitioners can use AI as a supplemental tool to reduce their workload and improve accuracy and precision in diagnosis, decision-making, planning of treatments, prediction of treatment outcomes, and prognosis of diseases.

Author biography

Pradhuman Verma, Professor and HOD https://orcid.org/0000-0002-3306-7266

Cite this article: Verma P. Artificial intelligence: Third eye in dentistry. *J Oral Med, Oral Surg, Oral Pathol, Oral Radiol* 2023;9(3):116-117.