Review Lancet Oncol. 2024 Nov;25(11):e581-e588. doi: 10.1016/S1470-2045(24)00316-4.

Artificial Intelligence for Response Assessment in Neuro Oncology (AI-RANO), part 1: review of current advancements

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PMID: 39481414 DOI: 10.1016/S1470-2045(24)00316-4

Abstract

The development, application, and benchmarking of artificial intelligence (AI) tools to improve diagnosis, prognostication, and therapy in neuro-oncology are increasing at a rapid pace. This Policy Review provides an overview and critical assessment of the work to date in this field, focusing on diagnostic AI models of key genomic markers, predictive AI models of response before and after therapy, and differentiation of true disease progression from treatment-related changes, which is a considerable challenge based on current clinical care in neuro-oncology. Furthermore, promising future directions, including the use of AI for automated response assessment in neuro-oncology, are discussed.