Artificial intelligence

Impact

The contributions of this thesis promise transformative effects in healthcare. While **Part I** provides essential foundational insights, it's primarily **Part II**'s findings that present a potential paradigm shift in treating pleural mesothelioma, which holds societal ramifications.

This research illustrates AI models' potential to disseminate expert knowledge from specialized centers to regional hospitals, extending even to countries with high mesothelioma prevalence but limited expertise. This distribution of medical expertise not only narrows the disparity in diagnostic and therapeutic capabilities across healthcare facilities but also enables a more standardized evaluation in clinical trials on a global scale. Such standardization ensures high-quality care for patients worldwide, regardless of their geographical locations.

Furthermore, by adopting AI-driven volumetric assessments, uncertainties surrounding tumor growth are reduced, which is one of the stress factors for patients. Accurate tumor evaluations allow treating physicians to provide clearer feedback, enabling patients to make well-informed decisions about their treatment trajectories. This clarity can potentially lead to better quality of life by helping patients transition away from ineffective treatments causing detrimental side effects.

In essence, the arrival of AI-powered standardized methodologies for patient disease assessment holds the potential to improve clinical trial evaluations and patient care. By improving the precision, consistency, and reliability of disease evaluations, this research enhances informed clinical decisions and offers a brighter, more equitable future for patients and society alike.