The Use of Artificial Intelligence (AI) Technology in the Detection and Treatment of Pulmonary Embolism (PE) at a Tertiary Referral Center

Background

Pulmonary embolism (PE) is a serious condition associated with significant mortality. Timely detection and triage by a Pulmonary Embolism Response Team (PERT) is critical to management; however, a multidisciplinary team involves numerous calls and messages which may delay care coordination.

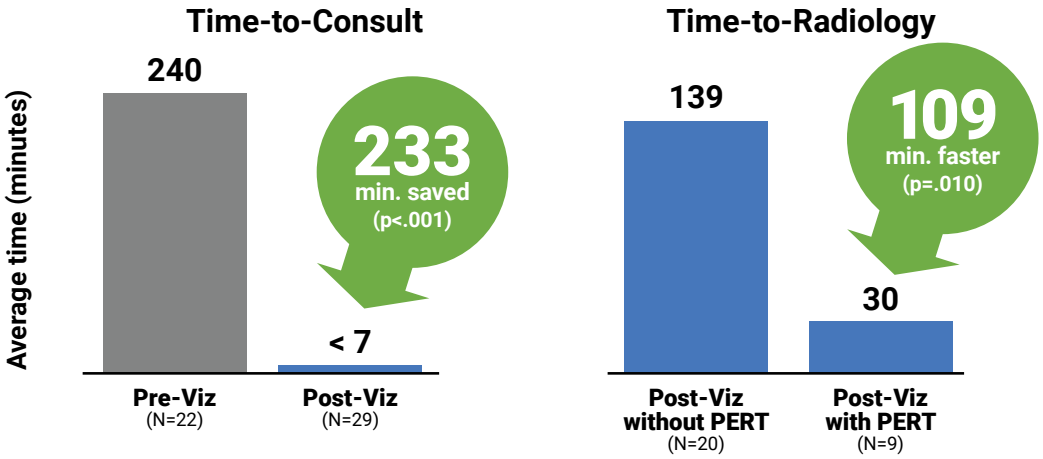
On October 2022, Viz.ai software was implemented at TriHealth to assist with PE detection, patient triage, and initiation of therapy. The aim of this study was to determine if the AI technology improved time to evaluation.

Methodology

Researchers performed an independent, retrospective review of patients diagnosed with PE from January 2022 to March 2023. Time-to-consult[1] was defined as elapsed time from scan initiation to consult (Pre-AI) or scan initiation to AI alert (Post-AI), and was collected for 2 cohorts: pre-AI (n=22) and post-AI (n=29). Time-to-radiologist[2] was defined as elapsed time from scan initiation to final radiologist report, and was collected for 2 cohorts: post-AI with PERT (n=9), and post-AI without PERT (n=20).

Key Findings

Viz PE Significantly Improved Time-to-Evaluation



Conclusion

The use of AI for the identification and triage of PE resulted in significantly faster time-to-consult (240 mins v 7 mins) with a noteworthy reduction in the range of patient wait times (1,310 min down to 13 min). Reducing the level of variability with AI technology can directly impact PE patient care by improving time to evaluation. Patients with PERT activation had significantly faster time-to-rad compared to patients without PERT activation, suggesting even greater time savings when combining AI technology with PERT evaluation.

Implications

- This study provides real-world evidence of the clinical impact of Viz.ai to streamline workflow and shorten wait times for patient evaluation.
- Viz.ai seamlessly integrates with the PERT model of care to expedite care coordination and treatment of PE patients.

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