



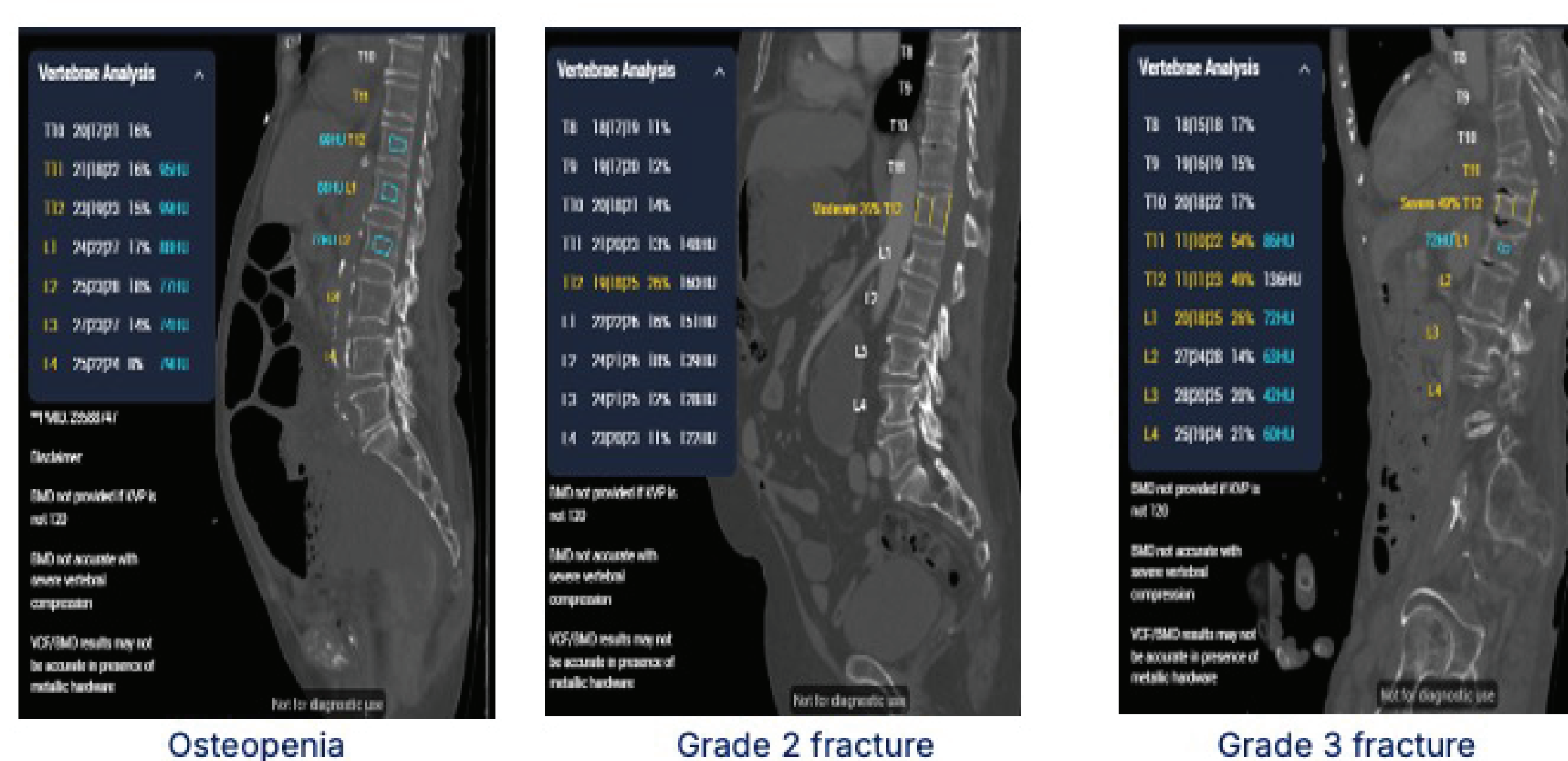
Artificial Intelligence Vs Human Interpretation For Opportunistic Detection Of Vertebral Fractures In Routine Ct Imaging: Results Of A 2-Months Pilot Study

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OBJECTIVE:

To evaluate the diagnostic performance of an artificial intelligence (AI) system for detecting vertebral fractures (VFs) opportunistically in routine chest and abdominal CT scans compared with human readers in a real-world hospital setting during a single-center pilot study.

AI Findings in the Evaluation of CT Scans



MATERIAL AND METHODS:

All thoracic and abdominal CT scans performed over two months in patients aged ≥ 50 years at a tertiary hospital were prospectively analyzed using the HealthOST AI platform (Nanox AI Ltd.).

Routine radiology reports and targeted endocrinologist reviews were compared to AI findings. A gold-standard adjudication panel confirmed VF presence or absence.

Statistical comparisons of:

- Sensitivity
- Predictive Values
- Specificity
- Odds Ratios (Or) Were Performed Using χ^2 Tests ($P < 0.05$).

RESULTS:

Among 427 scans, AI achieved a sensitivity of 86.3% in the discrimination of CT scans with or without VFs, outperforming radiologists (50.0%) and endocrinologists (68.8%) ($p \leq 0.01$). In addition, AI demonstrated significantly higher odds of correctly flagging VFs leading to case finding: $OR = 14.23$ (95% CI 4.7–43.1, $p < 0.000001$) compared to radiologists, and $OR = 4.77$ (95% CI 1.6–13.6, $p = 0.001$) compared to endocrinologists. Extrapolated annually, the integration of this system in the hospital's radiology setting could identify approximately 150 otherwise undiagnosed patients needing osteoporosis therapy.

CONCLUSION:

AI-driven VF detection in routine CT scans offers significantly higher diagnostic accuracy than human interpretation. Its integration into clinical workflows can enhance early osteoporosis diagnosis and optimize treatment strategies without added imaging or cost.

Disclosures:

No conflicts of interest to declare.

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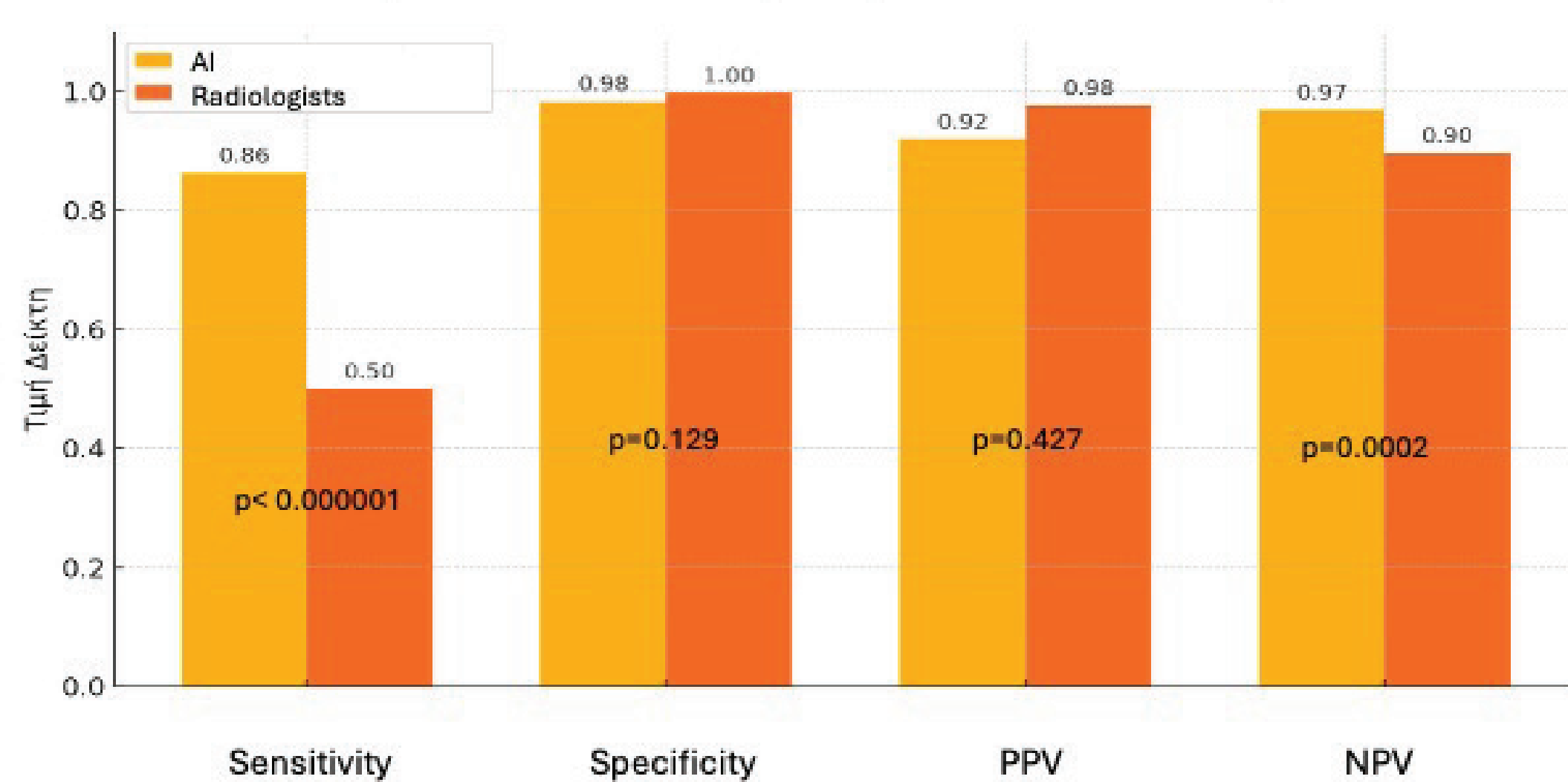
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Comparison of diagnostic performance: AI Vs Radiologists



Comparison of diagnostic performance: AI Vs Endocrinologists

