

Missed diagnosis: The case for MRI over CT in Acute Stroke Detection

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Background and Aims

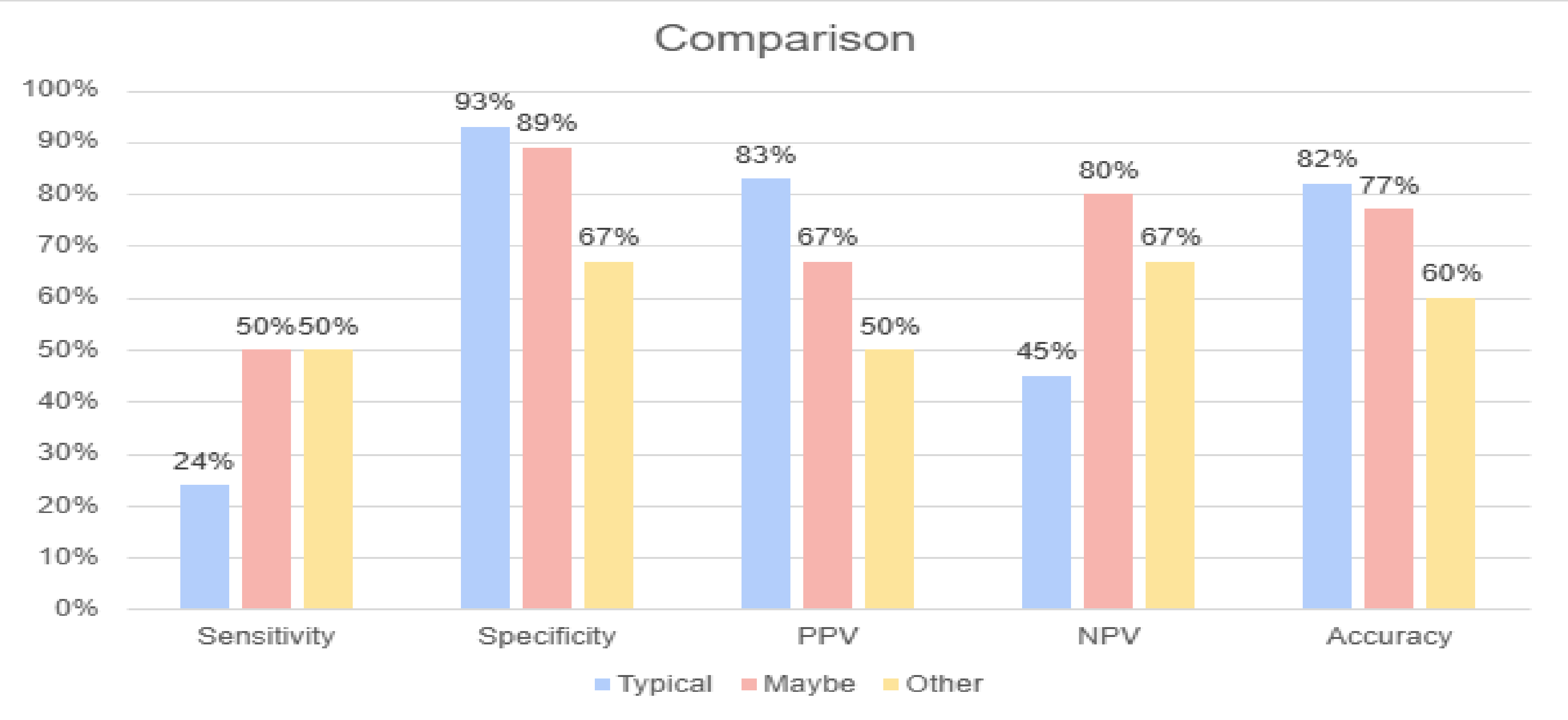
- Patients presenting within one hour with mild symptoms of stroke should ideally undergo an MRI scan.
- We analysed missed infarcts on CT imaging and correlated these findings with clinical symptoms and MRI results to determine where duplicate imaging could be avoided.

Methods

- A total of 210 patients underwent CT head scans in October 2021 for possible stroke across two sites within an NHS trust.
- Patients were classified into three categories: typical (e.g., limb weakness or facial droop), maybe (e.g., speech or posterior circulation stroke [POCS] symptoms), or other.
- We reviewed whether these patients subsequently underwent an MRI brain scan and their respective results.

Results

Of the 198 eligible scans, 53 were followed up with an MRI for the same episode.



	P value
Typical	0.00013
Maybe	0.6736
Other	1

Conclusion

- This analysis shows that one in every three patients in the “maybe” category underwent an MRI.
- Although the false-negative rate in this group was 14%, a significant proportion still received MRI imaging.
- This raises the question of whether MRI should be offered as a first-line investigation for patients with these symptoms, given its 77% accuracy.

Learning Points

- Advantages: If these patients are having MRI anyway, this reduces radiation dose and ensures the patient gets more sensitive imaging.
- Disadvantages: MRI is not available out of hours and higher number of MRI imaging will cause a constraint on services.

References

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