

“CLINICAL UTILITY AND DIAGNOSTIC PERFORMANCE OF 18F-FDG PET-CT IN MANTLE CELL LYMPHOMA- A SINGLE CENTER EXPERIENCE”

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OBJECTIVE

18F-FDG PET-CT is widely used in the staging, and response assessment of common lymphoma like diffuse large B cell lymphoma and Hodgkin's lymphoma, but its role in Mantle Cell Lymphoma (MCL), a rare cell type with variable FDG avidity is less clear. This retrospective study evaluated the diagnostic value of baseline SUVmax in Mantle Cell Lymphoma by correlating it with Ki-67 index and LDH levels. And assessed PET-CT accuracy for nodal, bone marrow and gastrointestinal involvement using histopathology as the reference.

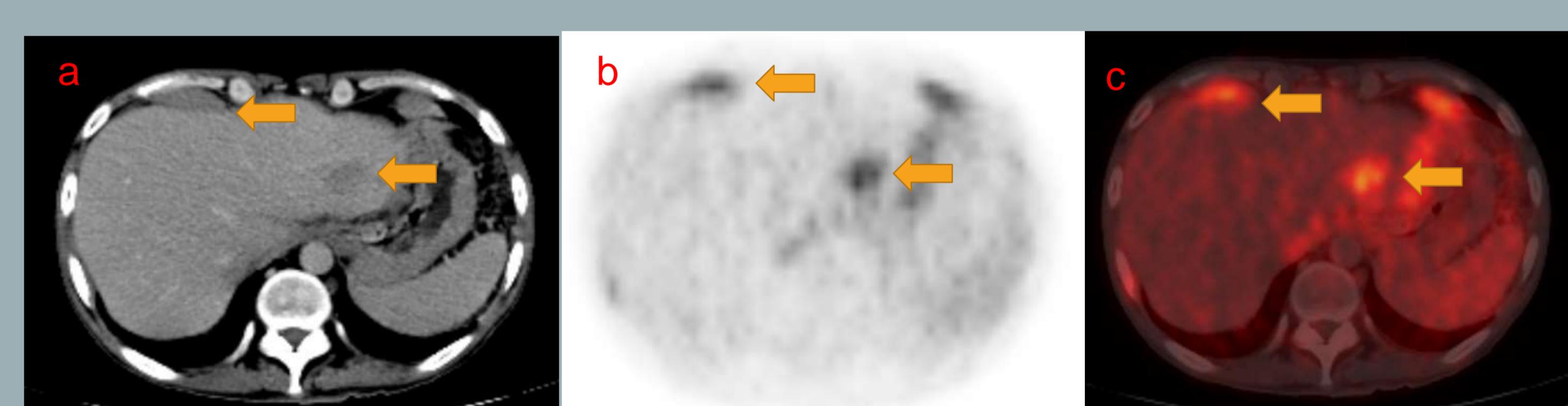
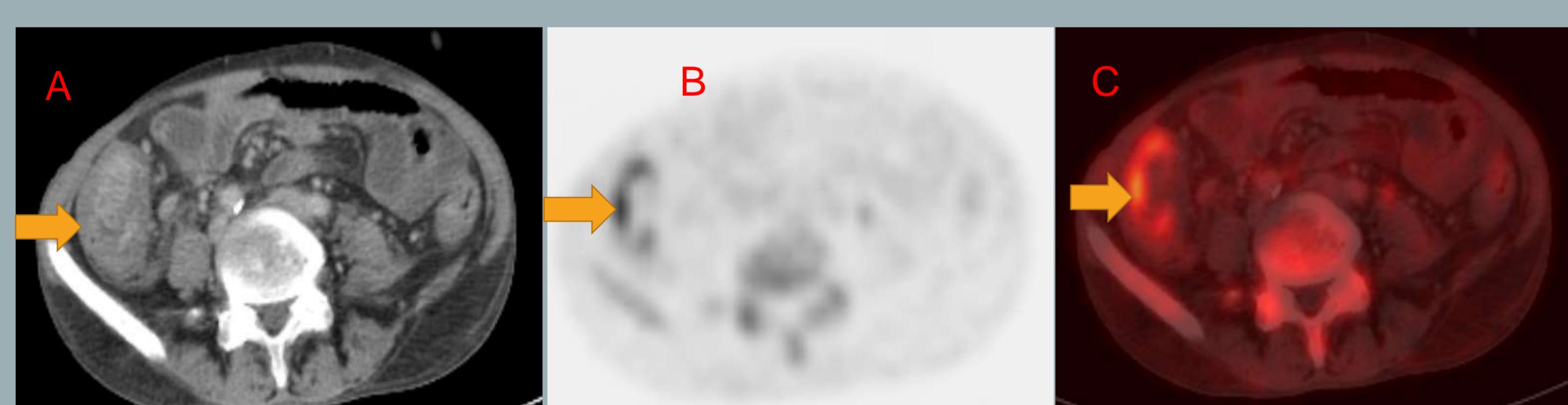
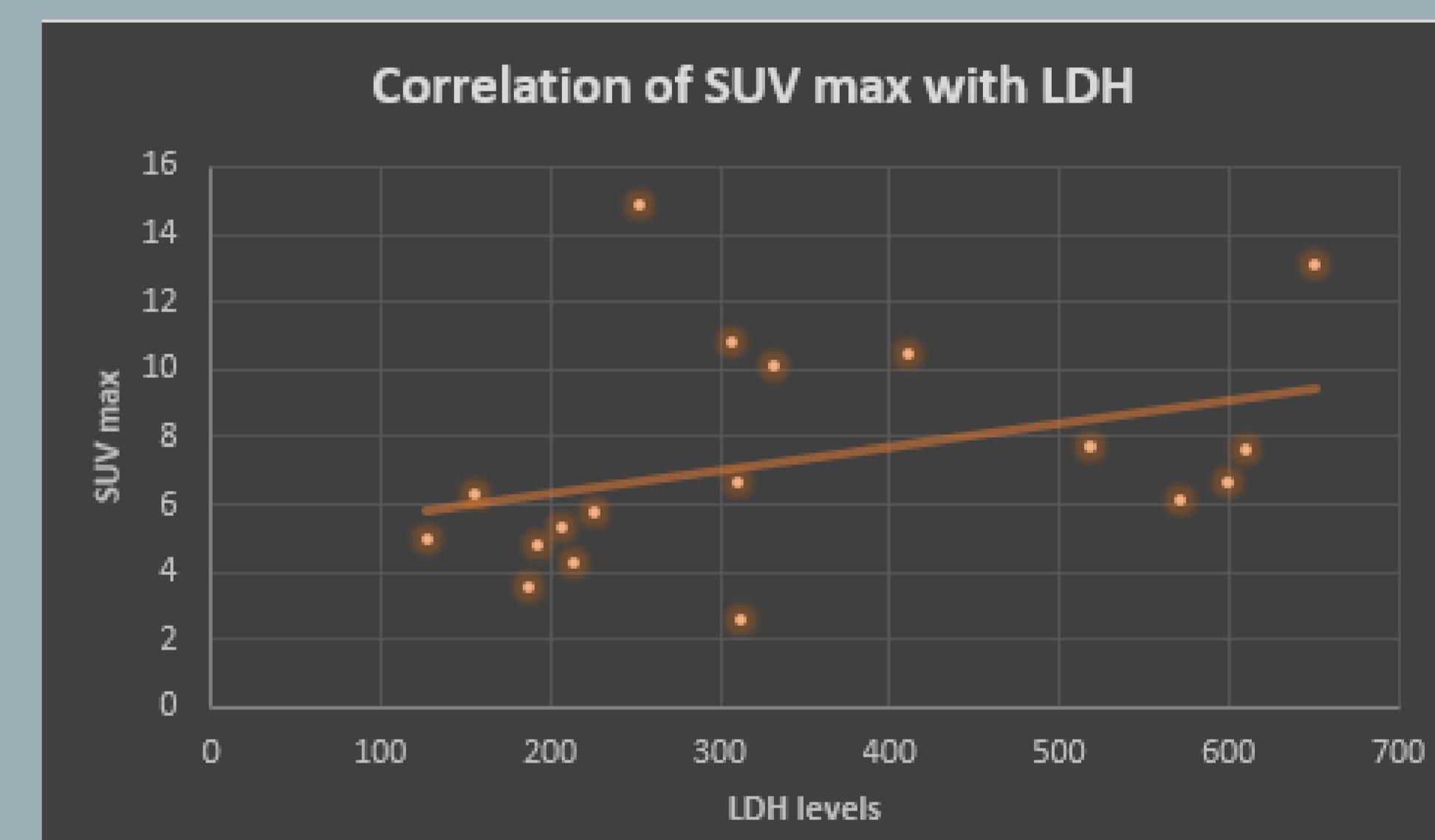
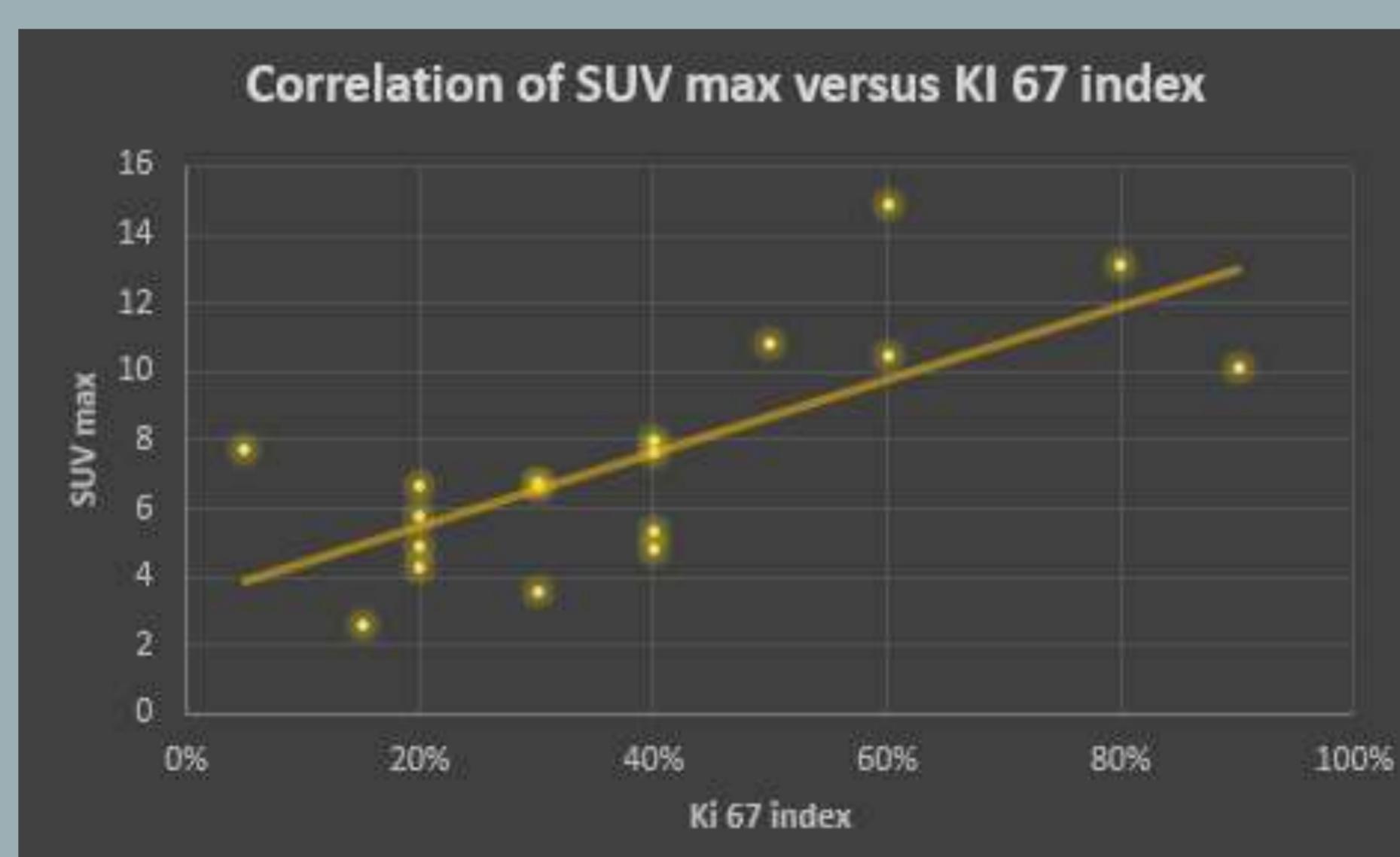
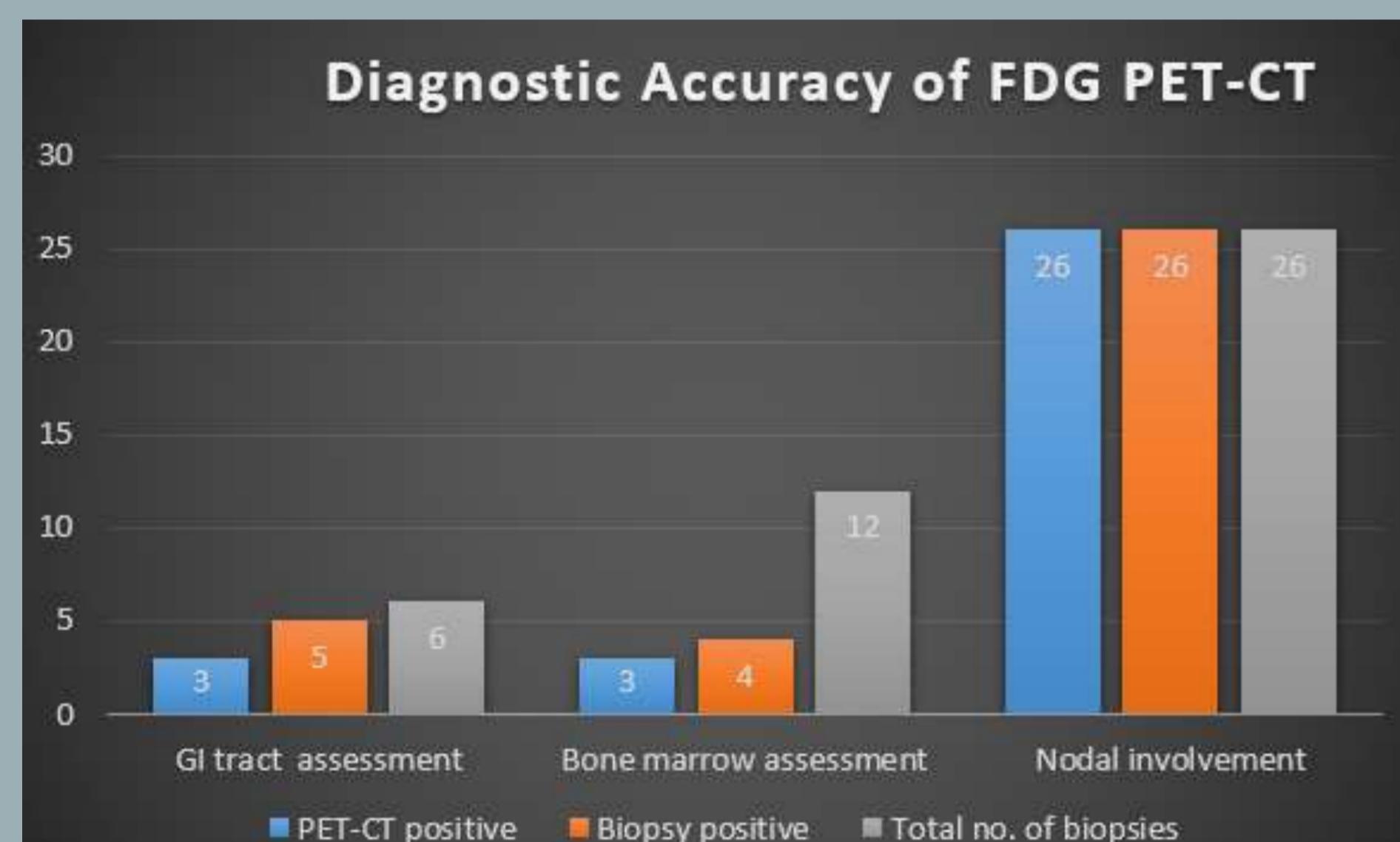
METHODOLOGY

This retrospective analysis included 29 patients with histologically confirmed MCL who underwent FDG PET-CT between 2014 and July 2025. Baseline, interim, and end-of-treatment PET-CT scans were reviewed.

For each patient, the SUVmax of the most metabolically active lesion on the baseline PET-CT was recorded and correlated with Ki-67 expression and LDH levels. Moreover, diagnostic accuracy of FDG PET-CT for nodal, bone marrow, and gastrointestinal tract sites was calculated using biopsy results as the gold standard. Sensitivity and specificity were derived for each organ system separately.

RESULTS

Baseline SUVmax showed a positive correlation with Ki-67 and LDH, indicating aggressive disease and poor prognosis. PET-CT demonstrated 100% sensitivity and specificity for nodal involvement (26/26 concordant cases). For bone marrow disease, sensitivity was 75% (3/4) and specificity 100%. For gastrointestinal involvement, sensitivity was 60% (3/5) and specificity 100%.



CONCLUSION

Our study underscores the utility of FDG PET-CT in the evaluation and management of mantle cell lymphoma. Baseline SUVmax showed a strong correlation with key prognostic indicators like Ki-67 and LDH, indicating its potential role in risk stratification. FDG PET-CT demonstrated excellent diagnostic accuracy for nodal involvement, with 100% sensitivity and specificity in this cohort. While specificity for bone marrow and gastrointestinal involvement remained high, sensitivity was comparatively lower. Given the limited sample size, further large volume multicenter studies are warranted to validate these findings and further define the role of FDG PET-CT in MCL.

REFERENCES

1. Bailly, Clément et al. “Interest of FDG-PET in the Management of Mantle Cell Lymphoma.” *Frontiers in medicine* vol. 6 70. 9 Apr. 2019
2. Albano, Domenico et al. “¹⁸F-FDG PET or PET/CT in Mantle Cell Lymphoma.” *Clinical lymphoma, myeloma & leukemia* vol. 20,7 (2020): 422-430.



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