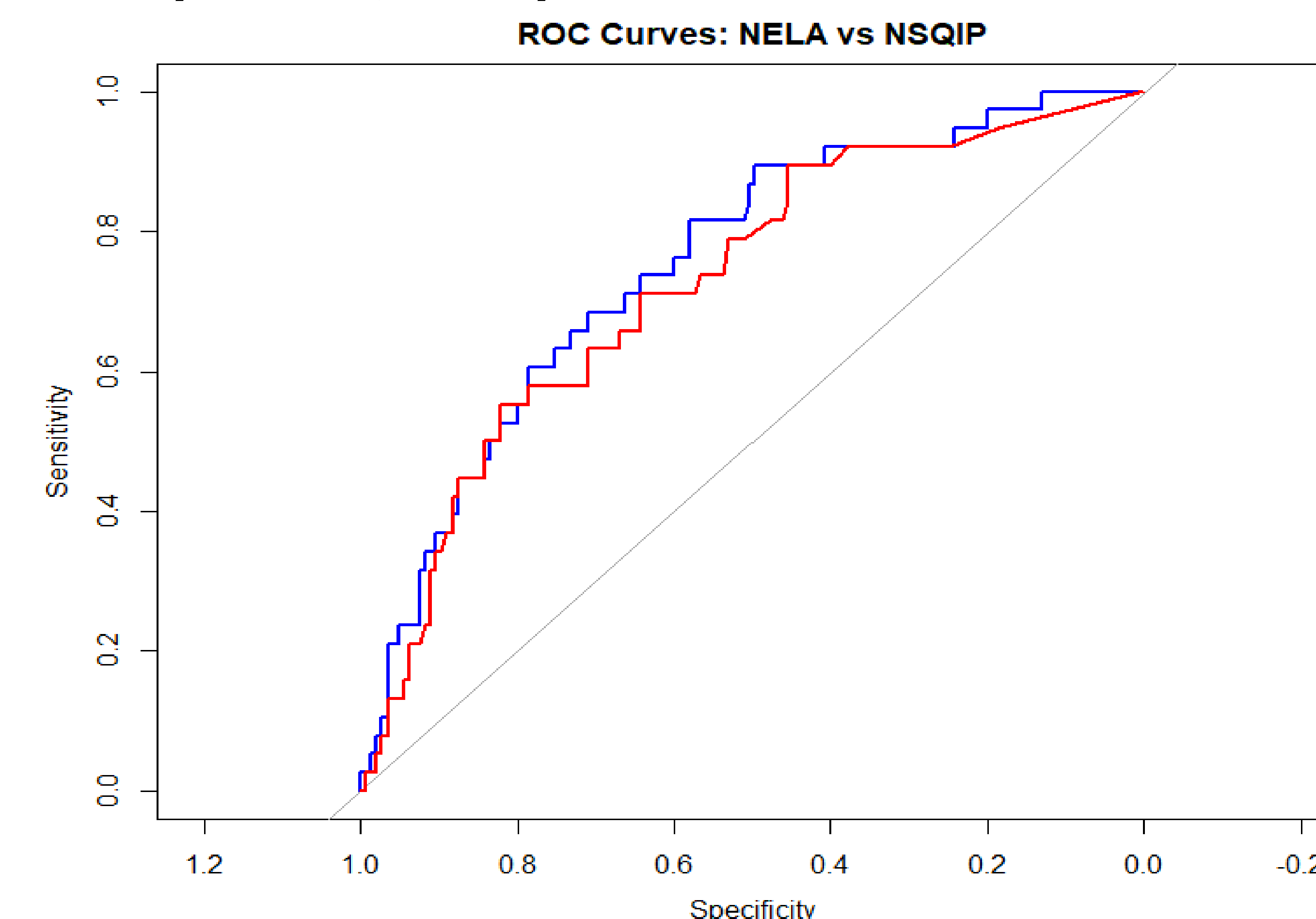




Comparative Accuracy of NELA and NSQIP Risk Assessment Tools in Predicting Mortality after Emergency Exploratory Laparotomy



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Background

- Accurate prediction of mortality risk following emergency exploratory laparotomy is critical for perioperative decision-making and counseling.
- The **NELA risk calculator & NSQIP** is widely used, however, their comparative accuracy in emergency exploratory laparotomy remains underexplored.
- AIM:** To compare the performance of NSQIP and NELA in a single-center cohort study.

Methods

- Study Design:** Retrospective cohort study at a single academic institution between **July 2024 - July 2025**
- Inclusion:** Adult patients (≥ 18 years) undergoing emergency laparotomy.
- Predicted mortality was calculated using the NELA and NSQIP.
- Statistics:** Predictive performance was evaluated using receiver operating characteristic (**ROC**) curves and area under the curve (**AUC**). **DeLong's test** was used to compare the significance of the AUCs for both the models.

Results

- 184** patients included
 - Median age - **61.5[43-72]**
 - Male - 67.3%
 - In-hospital mortality - 20.7%
 - AUC**
NELA - 0.75 (95% CI: 0.67–0.84)
NSQIP - 0.73 (95% CI: 0.64–0.82)
- NELA had a better AUC compared to NSQIP.
- DeLong's test showed that the difference between the two scores was not statistically significant (**Z = 0.74, p=0.46**).
 - At optimal cutoffs, NELA demonstrated slightly higher specificity compared to NSQIP, but with overlapping confidence intervals.

Conclusion

- Both NELA and NSQIP showed acceptable discrimination for predicting in-hospital mortality following emergency exploratory laparotomy.
- These findings suggest that either score may be used in this context, with larger multicenter validation studies needed to clarify comparative utility.

References

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