



P2.289: Transcutaneous Auricular Vagus Nerve Stimulation for Perioperative Inflammation-Related Symptom Management in Lung Cancer



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INTRODUCTION

Postoperative inflammation symptoms are a major unmet supportive care need.

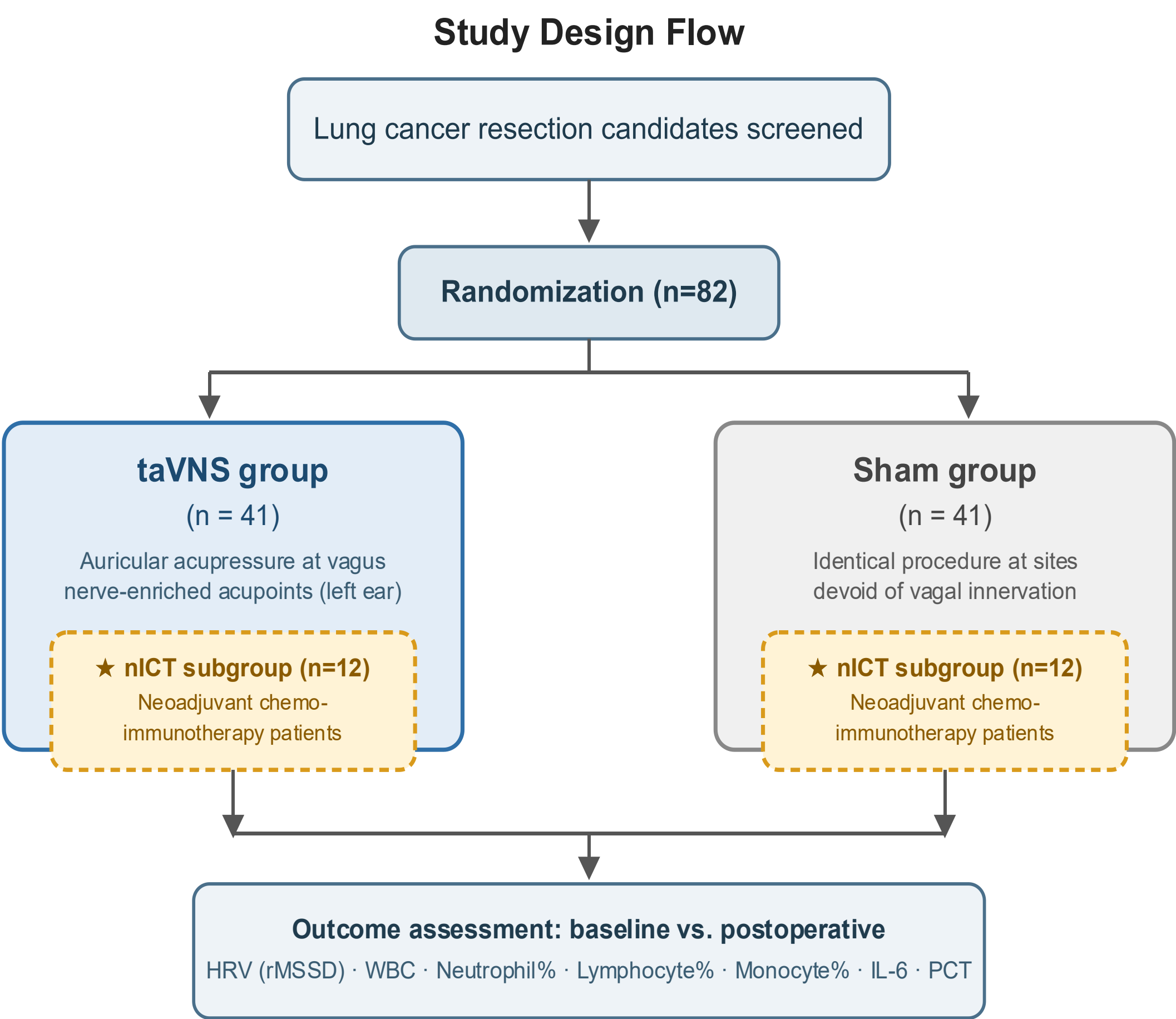
Reduced vagal tone suppresses the cholinergic anti-inflammatory pathway.

To evaluate the effects of transcutaneous auricular vagus nerve stimulation (taVNS) on perioperative vagal tone and postoperative inflammatory burden.

METHODS

Design: Prospective Randomized Controlled Trial.

Outcome: HRV; WBC count, IL-6, procalcitonin (PCT)



DISCUSSION AND CONCLUSION

Actionable Take Away Message

- taVNS is a **non-invasive, nurse-deliverable, non-pharmacological** intervention
- taVNS activates vagal function and reduces postoperative inflammatory burden after lung cancer surgery.

Future Direction for Research

Future studies should link vagal tone recovery to patient-reported symptom outcomes (e.g., symptom scores, quality of life) beyond biomarker endpoints.

REFERENCES & ACKNOWLEDGEMENTS

References:

- Schiweck, C., Aichholzer, M., Brandt, E., Schneider, M., Meyer, K., Hamzehloiya, T., Qubad, M., Uckermark, C., Jacobsen, L., Amaral, K., Auer, J., Bruno, G., Zhao, T., Bouzouina, A., Schillo, S., Hanssen, R., Hahn, T., Repple, J., Matura, S., ... Edwin Thanarajah, S. (2025). The heart knows best: Baseline heart rate variability as guide to transcutaneous auricular vagus nerve stimulation in depression. *Translational Psychiatry*, 15, 521. <https://doi.org/10.1038/s41398-025-03780-y>
- Lv, S., Ma, C., Fu, W., Hu, C., Han, X., Chen, J., Tan, X., Liu, T., & Li, W. (2025). Electroacupuncture alleviates intestinal ischemia-reperfusion-induced acute lung injury via the vagus-sympathetic nerve pathway. *International Immunopharmacology*, 165, 115484. <https://doi.org/10.1016/j.intimp.2025.115484>
- Fang, Y., Zhang, Y., Wang, G., Guan, J., Wang, H., Shao, M., Zeng, L., Jiang, Z., & Deng, Z. (2025). Autonomic function effects on postoperative sleep disorder: A prospective cohort study. *International Journal of Surgery (London, England)*, 111(10), 7010–7020. <https://doi.org/10.1097/JS9.0000000000002630>

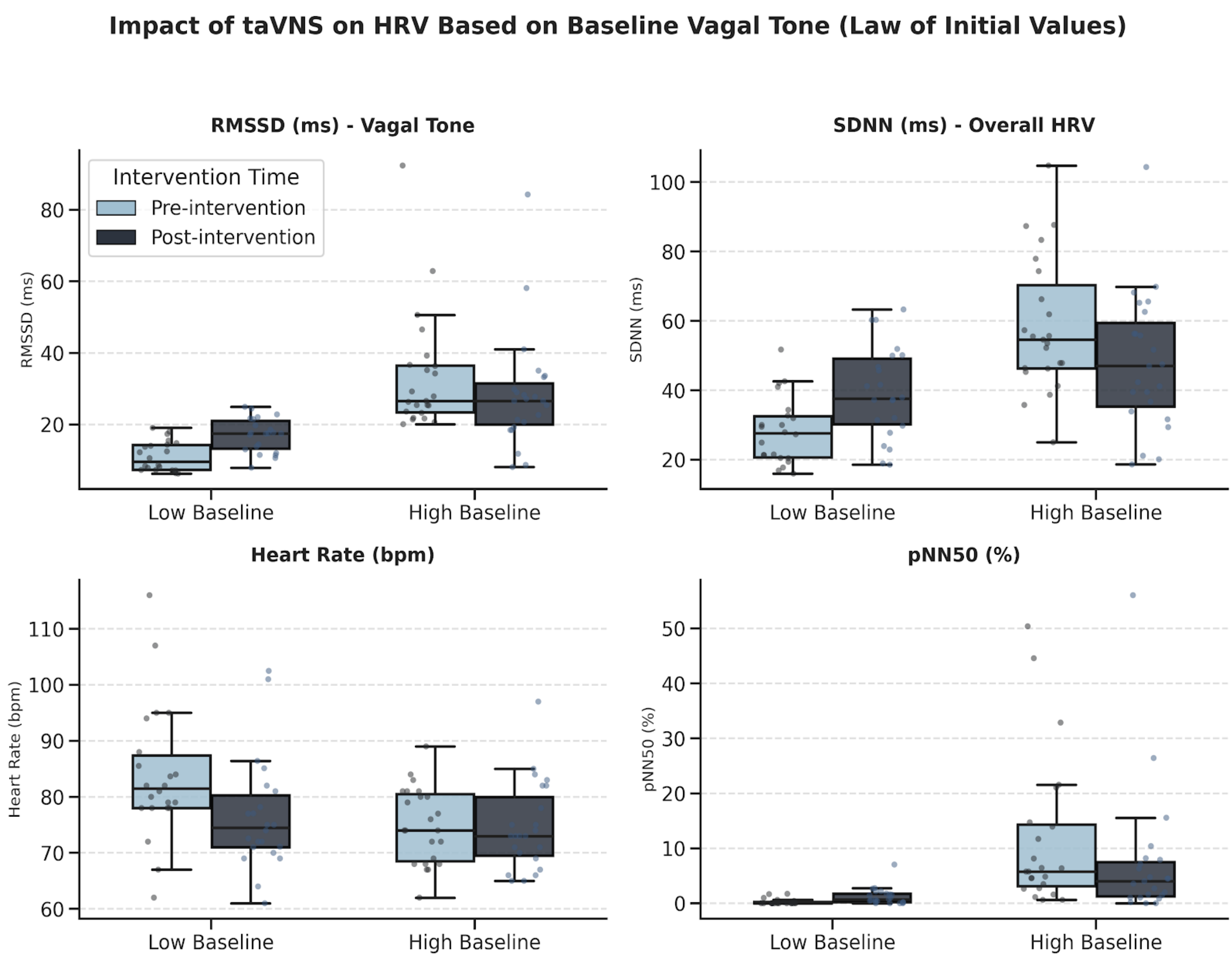
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RESULTS

Cohort: 82 patients enrolled (taVNS n=41; Sham n=41), including 24 nICT patients (n=12 per arm). Baseline characteristics well balanced (p>0.05).

- Regulating inflammation** : taVNS significantly **WBC** (↓), **Neutrophil%** (↓), **IL-6** (↓), **PCT** (↓), and **Lymphocyte%** (↑) vs. sham (all p<0.05, Table) -- benefits consistently replicated in the nICT subgroup.
- Vagal tone regulation** : a baseline-dependent, homeostasis-restoring effect (Figure)



Inflammation Biomarkers	taVNS group (n=41; median (Q1, Q3))	Sham group (n=41; median (Q1, Q3))	P value
WBC *10 ⁹ /L	9.90 (8.56, 12.71)	12.05(10.24, 14.99)	0.002
Neutrophil %	79.70(76.58, 83.57)	87.40(82.80, 90.70)	<0.001
Lymphocyte %	11.65(8.72, 13.80)	6.00(3.95, 9.00)	<0.001
Monocyte %	7.80(6.30, 9.30)	6.10(5.15, 7.10)	<0.001
IL-6 pg/ml	25.71(19.39, 33.72)	61.24(25.24, 134.53)	<0.001
PCT ng/ml	0.23(0.12, 0.35)	0.60(0.27, 1.84)	<0.001