

EFFECTS OF PREOPERATIVE HEMOGLOBIN LEVEL ON PERIOPERATIVE OUTCOMES AND OVERALL SURVIVAL AFTER ROBOTIC-ASSISTED PULMONARY LOBECTOMY

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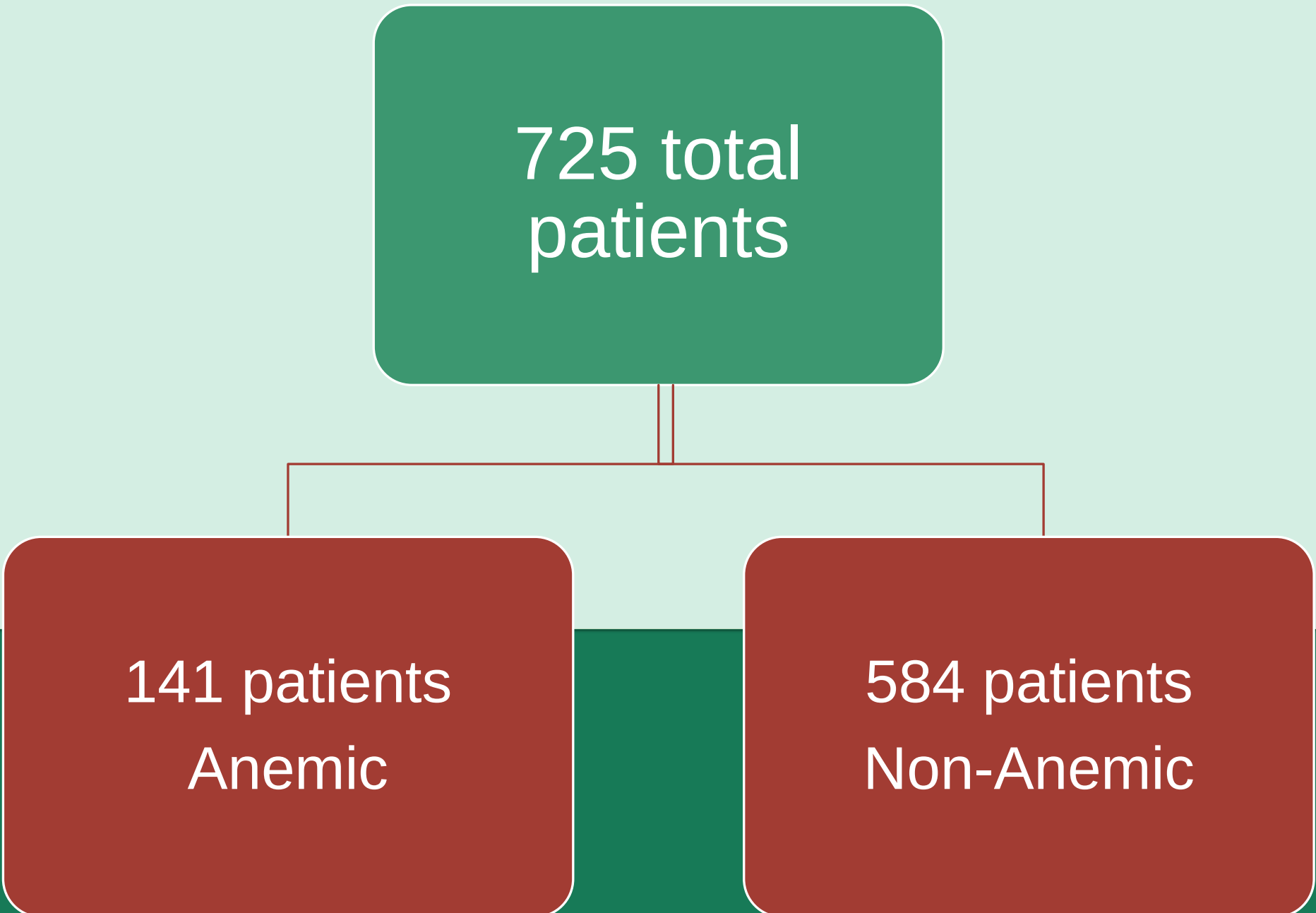


INTRODUCTION

- Anemia is a common blood disorder characterized by a decrease in the number or functionality of red blood cells. Anemia impairs the efficient distribution of oxygen throughout the body, leading to symptoms such as fatigue, weakness, and shortness of breath.

METHODS

- Retrospective analysis of 725 patients who underwent robotic-assisted video-thoracoscopic (RAVT) lobectomy by one surgeon.
- Patients were separated into an Anemic group (preoperative hemoglobin <12 g/dl for women and hemoglobin <13 g/dl for men) and a Non-Anemic group (preoperative hemoglobin ≥12 g/dl for women and hemoglobin ≥13 g/dl for men).
- Chi-Square/Fisher exact test, Student's t-test, and Wilcoxon rank-sum test were used to analyze demographics, rates of complications, and perioperative outcomes.
- Kaplan-Meier analysis was used for overall survival estimates.



RESULTS

Table 1: Demographics & Preoperative Measures

Variables	Anemic (N = 141)	Non-Anemic (N=584)	p-value
Age**, yr	68.6 ± 0.9	68.3 ± 0.4	0.785
Male, n (%)	75 (53.2%)	247 (42.3%)	0.019
White Race, n (%)	123 (87.2%)	552 (94.5%)	0.002
BMI**, kg/m ²	26.8 ± 0.46	28.0 ± 0.23	0.024
Preoperative Weight Loss, n (%)	46 (32.6%)	72 (12.4%)	<0.001
Tumor Size, cm**	3.8 ± 0.20	3.0 ± 0.07	<0.001

Figure 1: Median Overall Survival

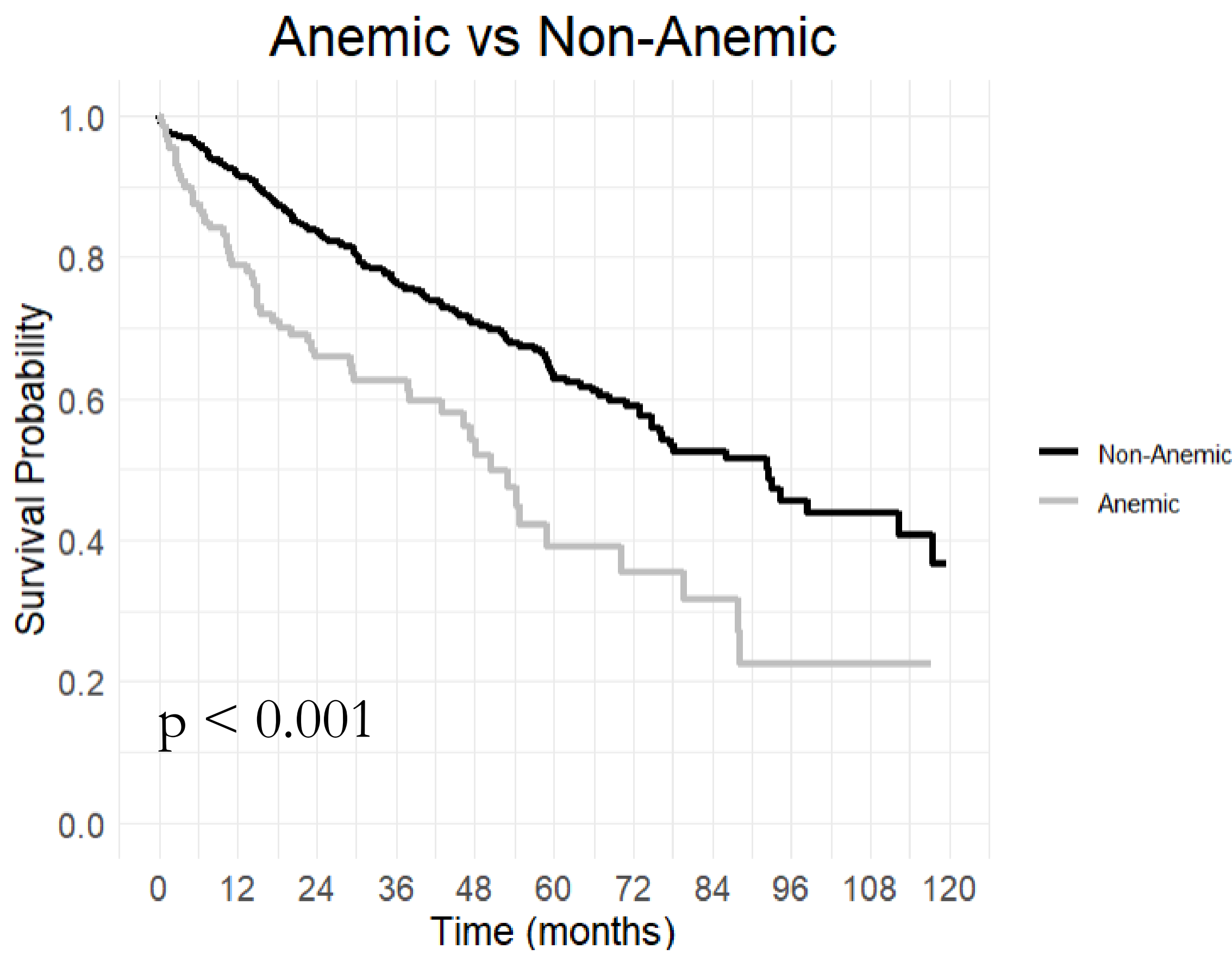


TABLE LEGENDS

- # = Wilcoxon rank-sum test
- * = Student's t-test
- ** = Data as mean ± standard error of mean

Table 2: Intraoperative / Postoperative Outcomes

Variables	Anemic (N = 141)	Non-Anemic (N = 584)	p-value
Postoperative Complication, n (%)	47 (33.3%)	232 (39.7%)	0.161
Conversion to Thoracotomy, n (%)	13 (9.2%)	24 (4.3%)	0.013
Estimated Blood Loss, mL; Median [Q1,Q3] [#]	200 [100, 300]	100 [50, 200]	<0.001
Skin-to-Skin Operative Time, min; Median [Q1,Q3] [#]	185 [151.5, 229.5]	170 [143.25, 209]	0.020
Hospital Length of Stay, days; Median [Q1,Q3] [#]	4 [3,8]	4 [3,6]	0.021
Intraoperative tracheobronchial injury, n (%)	4 (2.8%)	3 (0.5%)	0.030
Chest Tube Duration, days; Median [Q1,Q3] [#]	4 [3, 6]	3 [2, 6]	0.146
Median Overall Survival	50.4 months	92.6 months	<0.001

DISCUSSION

- Anemic patients had greater estimated blood loss, longer skin-to-skin operative times, longer hospital length of stay, and worse overall survival. However, Anemic patients did not have greater postoperative complication rates than Non-Anemic patients.

CONCLUSIONS

- To mitigate these risks and improve perioperative outcomes, it is crucial to assess preoperative hemoglobin levels. Identifying and managing anemia before surgery can help estimate the risks associated with RAVT lobectomy and tailor perioperative care accordingly. This proactive approach may involve preoperative optimization strategies such as iron supplementation, erythropoiesis-stimulating agents, or other interventions aimed at improving hemoglobin levels.

REFERENCES

Mo K, Ortiz-Babilonia C, Al Farii H, et al. Increased Severity of Anemia Is Associated with Postoperative Complications following a Adult Spinal Deformity Surgery. *World Neurosurg.* 2022;167:e541-e548. doi:10.1016/j.wneu.2022.08.045

Myles PS, Richards T, Klein A, et al. Postoperative anaemia and patient-centered outcomes after major abdominal surgery: a retrospective cohort study. *Br J Anaesth.* 2022;129(3):346-354. doi:10.1016/j.bja.2022.06.014479580

