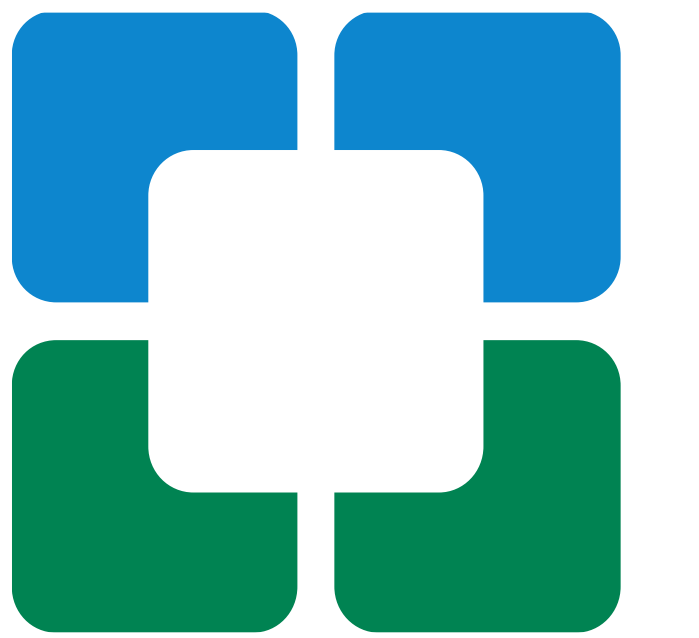




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INTRODUCTION

Anemia among patients undergoing bariatric surgery is thought to increase the risk of postoperative morbidity and mortality, yet multicentered studies are lacking. We aimed to evaluate the prevalence and burden of anemia on elective primary sleeve gastrectomy and Roux-en-Y gastric bypass outcomes using the MBSAQIP database.

METHODS AND PROCEDURES

We performed a retrospective analysis of MBSAQIP (2020–2023), including adults undergoing primary laparoscopic sleeve gastrectomy or Roux-en-Y gastric bypass.

Anemia was defined as hematocrit <39%.

Statistical analysis included chi-square tests, t-tests, and multivariable logistic regression adjusted for demographic and clinical covariates to evaluate associations between preoperative anemia and 30-day outcomes, including serious complications and readmission.

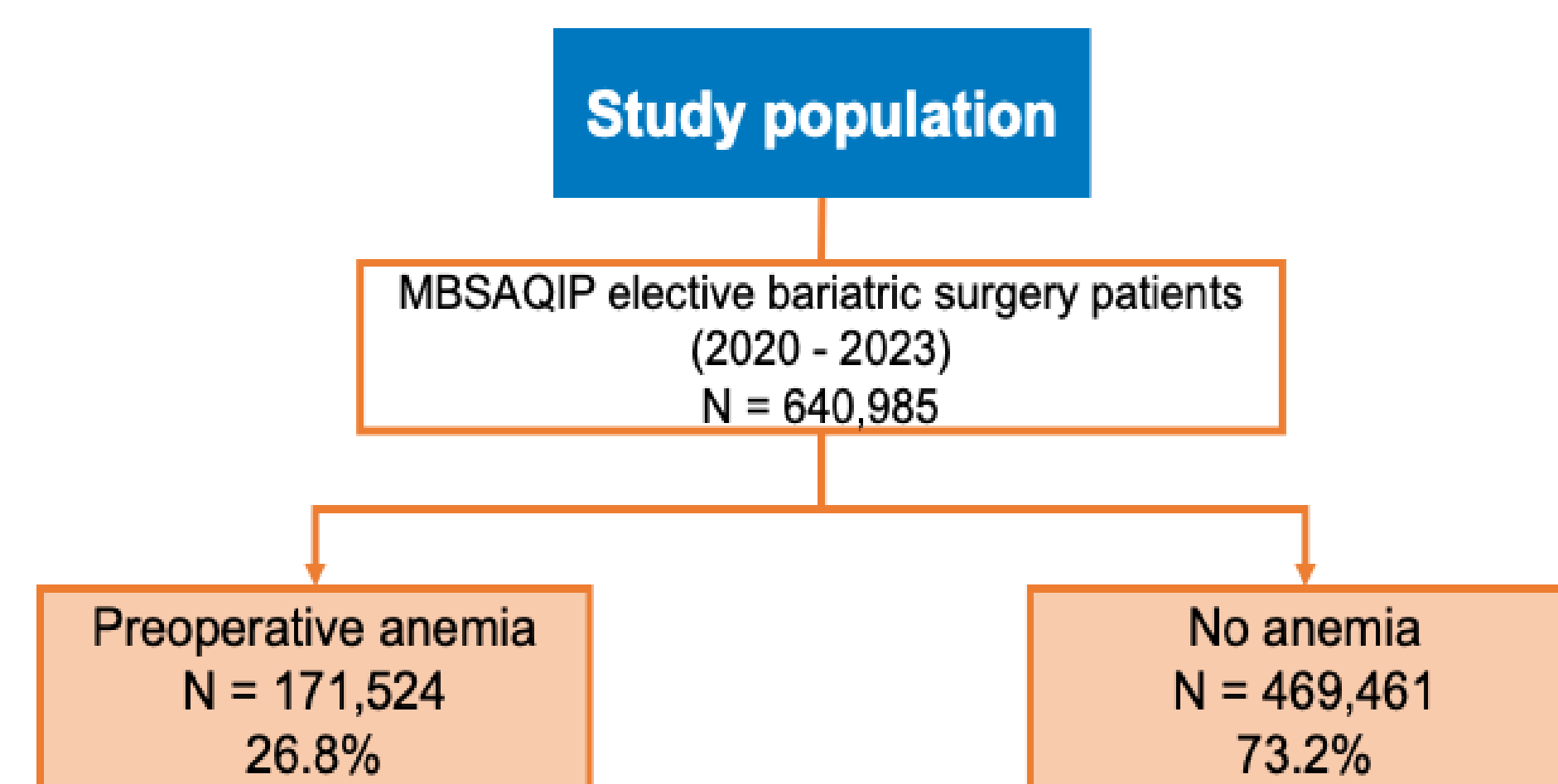


Figure 1. Study population: Among 640,985 patients undergoing elective bariatric surgery in MBSAQIP, 26.8% (n = 171,524) had preoperative anemia.

RESULTS

Among 640,985 patients, 26.8% (n=171,524) had preoperative anemia.

Patients with anemia were younger (41.8 vs 43.7 years; $p<0.001$), more frequently female (95.6% vs 77.2%, $p<0.001$), and had slightly higher BMI (45.5 vs 44.9 kg/m², $p<0.001$).

Also, were more likely to undergo sleeve gastrectomy (27.7% vs. 25.1%; $p<0.001$) and had an increased burden of renal insufficiency (1.2% vs. 0.3%; $p<0.001$), and dialysis dependence (1.0% vs. 0.1%, $p < 0.001$).

Patients with anemia had decreased rates of sleep apnea (32.8% vs. 39.1%; $p<0.001$) and were less likely to be smokers (5.6% vs. 6.8%; $p<0.001$).

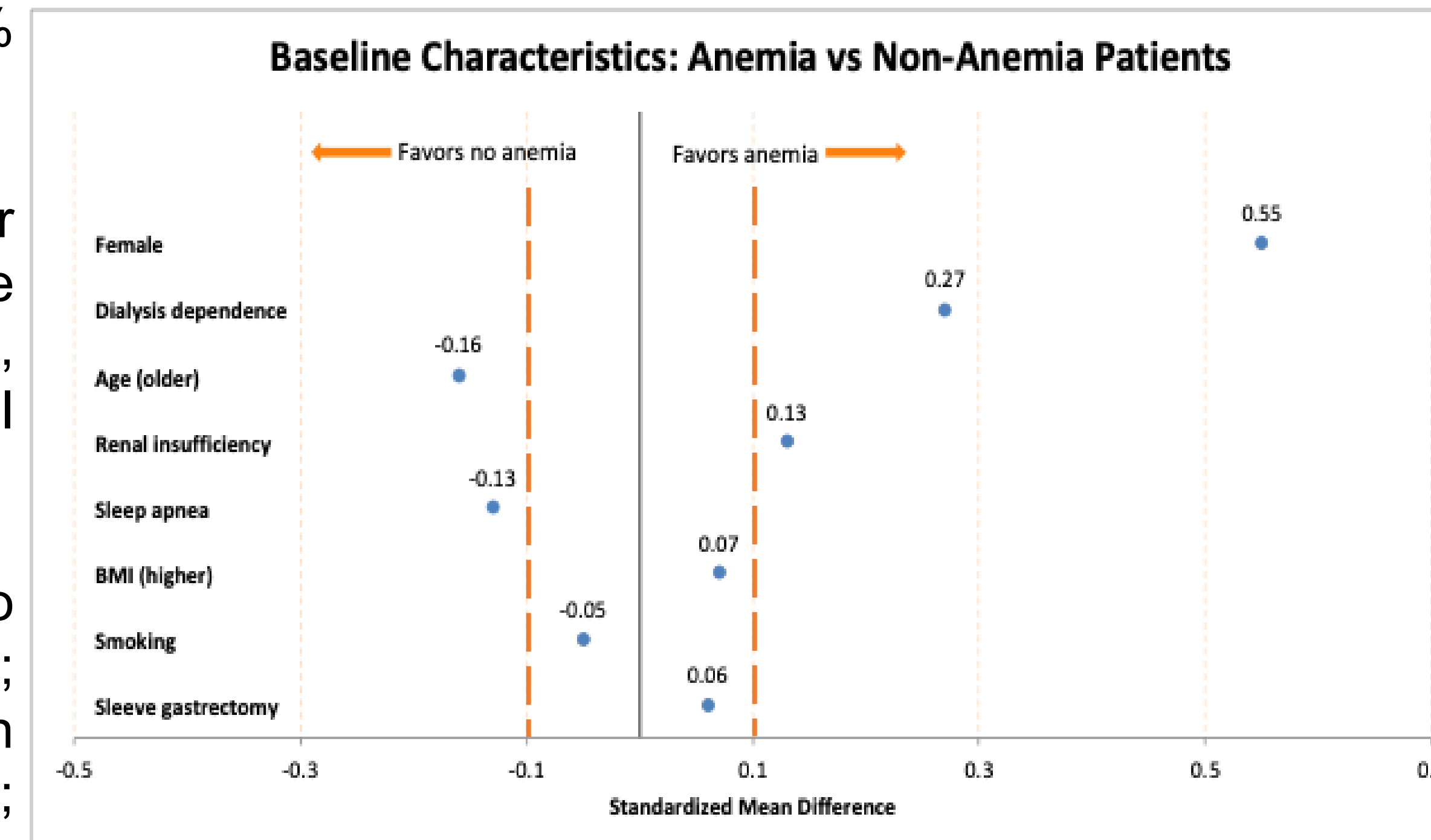
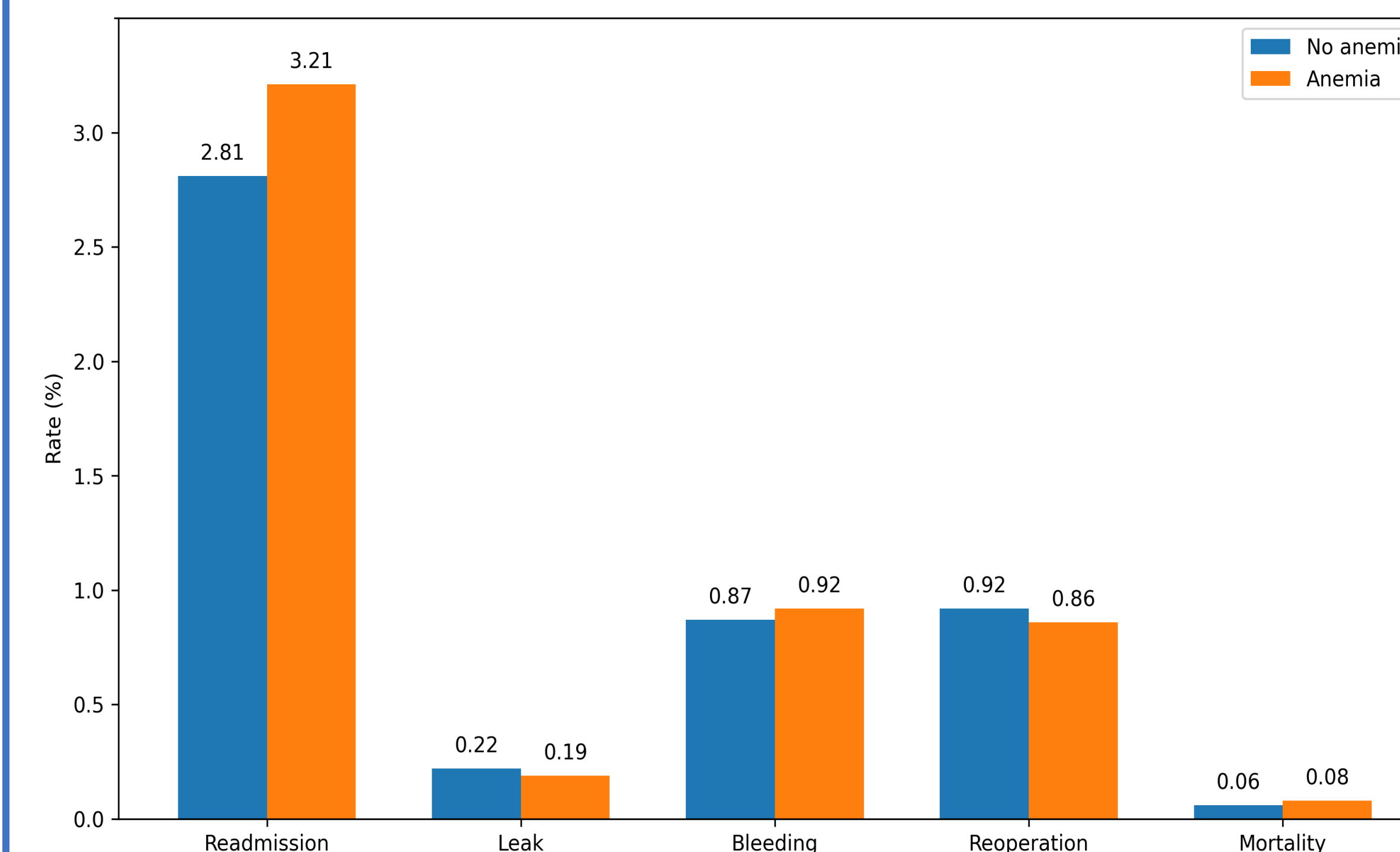


Figure 2. Baseline covariate differences between anemia and non-anemia groups: Standardized mean differences (SMD) were used to compare baseline characteristics. An absolute SMD ≥ 0.10 was considered indicative of meaningful imbalance. Anemic patients were more frequently female and had higher rates of renal insufficiency and dialysis dependence, whereas non-anemic patients were slightly older and had a higher prevalence of obstructive sleep apnea.



On bivariate analysis, anemia was associated with higher rates of readmission (3.2% vs. 2.8%; $p<0.001$), but no other meaningful differences in leak, bleeding, reoperation, reintervention, or mortality.

Figure 3. Unadjusted 30-day postoperative outcomes by anemia status: Patients with preoperative anemia had a higher rate of readmission compared with those without anemia (3.2% vs 2.8%). Rates of leak, bleeding, reoperation, and mortality were otherwise similar between groups.

In adjusted models, preoperative anemia independently increased the odds of serious complications (OR 1.13, 95% CI 1.09–1.17, $p<0.001$) and 30-day readmission (OR 1.14, 95% CI 1.10–1.17, $p<0.001$).

Serious complications were defined as a composite of major postoperative events including cardiac, pulmonary, renal, infectious, and thromboembolic within 30 days.

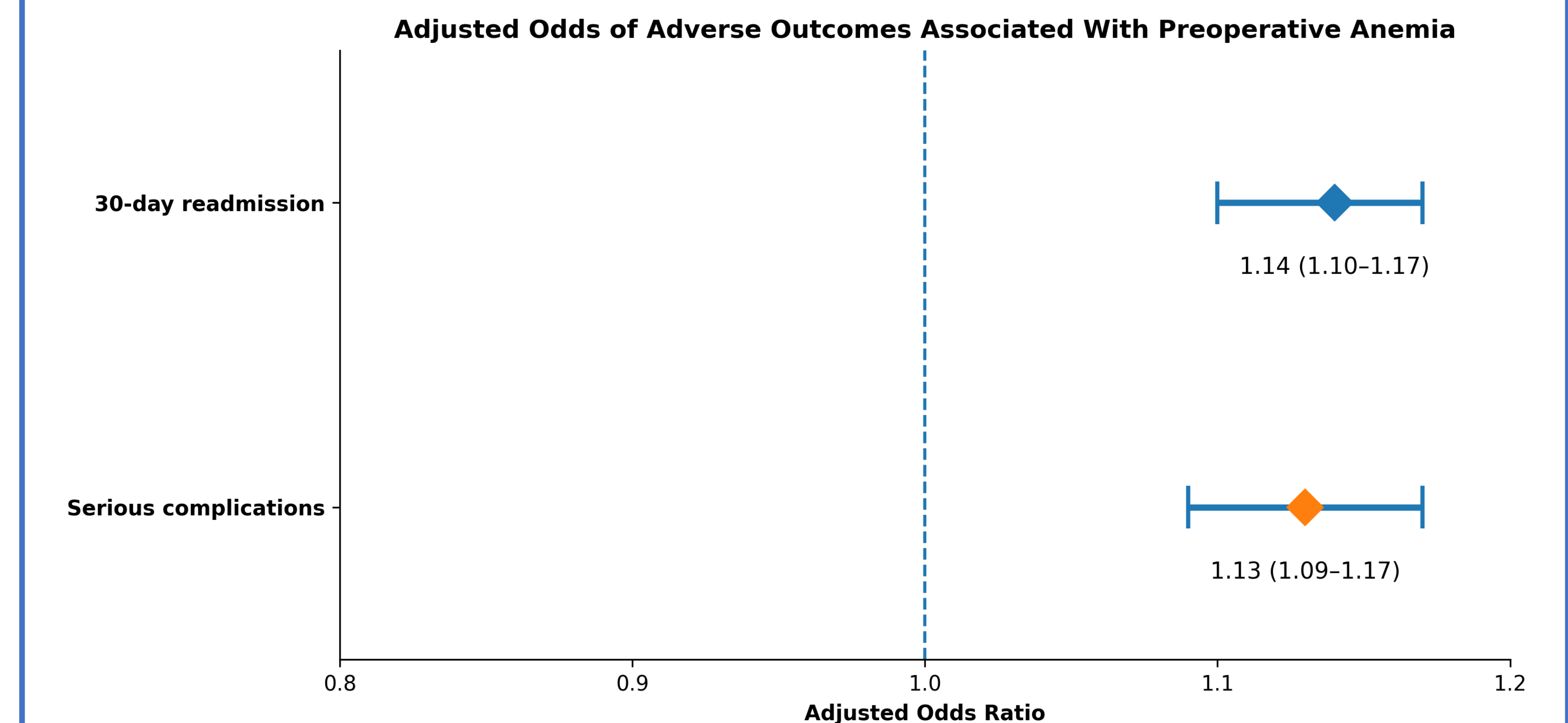


Figure 4. Adjusted outcomes associated with preoperative anemia: Preoperative anemia independently increased the odds of serious complications and 30-day readmission.

CONCLUSIONS

- ❑ Preoperative anemia is common in elective bariatric surgery candidates occurring in nearly one third of all patients.
- ❑ Anemia is independently associated with increase in the odds of 30-day serious complications and readmissions.
- ❑ These findings highlight the potential importance of preoperative optimization, including anemia screening and management.