Predictors of Postoperative Pulmonary Complications in Patients undergoing Bariatric Surgery: An MBSAQIP Analysis.

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Introduction and Objectives

- Postoperative pulmonary complications (PPC) after laparoscopic abdominal surgery are associated with increased morbidity. (1)
- Aim of the study: **determine what conditions could predict PPC in patients undergoing bariatric surgery**.

Methods

- Retrospective analysis of patients who had primary bariatric surgery from the MBSAQIP data registry between 2015 and 2019..
- **Primary outcome** → incidence of any PPC, defined as a composite variable including postoperative pneumonia, need for mechanical ventilation > 48 h, and unplanned endotracheal intubation.

1. van Huisstede A, Biter LU, Luitwieler R, Castro Cabezas M, Mannaerts G, Birnie E, Taube C, Hiemstra PS, Braunstahl GJ. Pulmonary function testing and complications of laparoscopic bariatric surgery. Obes Surg. 2013 Oct;23(10):1596-603. doi: 10.1007/s11695-013-0928-9. PMID: 23515977.

	OR	CI	P value
Age	1.024	1.019 - 1.029	≤0.001
BMI	1.025	1.019 - 1.031	≤0.001
Diabetes mellitus (yes vs. no)	1.217	1.093 - 1.355	≤0.001
Kidney failure (yes vs. no)	2.123	1.599 - 2.819	≤0.001
Renal replacement therapy (yes vs. no)	2.032	1.321 - 3.127	0.001
Anticoagulation therapy (yes vs. no)	1.593	1.323 - 1.918	≤0.001
COPD (yes vs. no)	1.737	1.410 - 2.139	≤0.001
Oxygen dependent (yes vs. no)	1.750	1.344 - 2.277	≤0.001
Smoking (yes vs. no)	1.363	1.171 - 1.586	≤0.001
Steroid/Immunosuppressant therapy (yes vs. no)	1.638	1.290 - 2.078	≤0.001
Type of procedure (LRYGB vs. LSG)	1.691	1.524 - 1.876	≤0.001
Operative time	1.005	1.004 - 1.006	≤0.001

Results

- 752,722 patients were included (LSG=73.2%, LRYGB=26.8 %).
- Mean age was 44.46 ± 11.96 years, with female predominance (79.6%).
- PPC occurred in 2,390 patients (0.3%).
- Most significant independent predictors of PPC where the preoperative presence of kidney failure, renal replacement therapy, oxygen dependency, and chronic obstructive pulmonary disease

Conclusion

- Kidney failure, renal replacement therapy, oxygen dependency and chronic obstructive pulmonary disease were the strongest independent predictors of PPC after primary bariatric surgery .
- Prospective studies are needed to confirm our results.