

Introduction:

Pulmonary embolism (PE) is a significant cause of morbidity and mortality in the US. We aimed to explore the hospital mortality and endovascular therapy use among patients with PE and investigate the associated potential risk factors.

Methods:

Retrospective study based on data from the State Inpatient database (SID), New York 2017. We used the tenth revisions of the International Classification of Diseases clinical modification codes (ICD-10-CM) to identify patients admitted with a primary diagnosis of PE (ICD-10-CM codes I26.02, I26.09, I26.92, I26.93, I26.94, I26.99). We selected patients that underwent endovascular therapy (EVT), including systemic thrombolysis, catheter-tip thrombolysis and pulmonary embolectomy. The primary outcomes studied were in-hospital mortality and EVT use.

Results

From the SID 2017, there were 10,129 PE hospitalizations, with a mean age of 62 years. Of these patients 270 (2.7%) underwent systemic thrombolysis, 236 (2.3%) underwent catheter-tip thrombolytics and 52 (0.5%) underwent pulmonary thrombectomy. The in-hospital mortality rate overall was 3.7%. Factors associated with in-hospital mortality were age 65-74 (OR 2.54, CI: 1.49 – 4.35) and age ≥75 (OR 3.05, CI: 1.76 – 5.30), diabetes (OR 1.30, CI: 1.01 – 1.68), peripheral vascular disease (OR 1.86, CI: 1.27 – 2.74), chronic kidney disease (OR 2.31, CI: 1.63 - 3.28), myocardial infarction (OR 2.83, CI: 1.81 – 4.43), metastatic cancer (OR 3.22; CI: 2.48 – 4.19), atrial fibrillation (OR 2.23; CI: 1.71 – 2.90). For EVT, the use of systemic thrombolysis was associated with increased risk of mortality (OR 8.47, CI: 5.93 – 12.12). Predictors associated with increased odds of EVT were age 45-54 (OR 1.70, CI: 1.17 – 2.49), atrial fibrillation (OR 2.01, CI: 1.44 – 2.82), obesity (OR 2.36, CI: 1.83 – 3.03). Hospital admissions for PE were higher in Kings County compared to other counties in New York City.

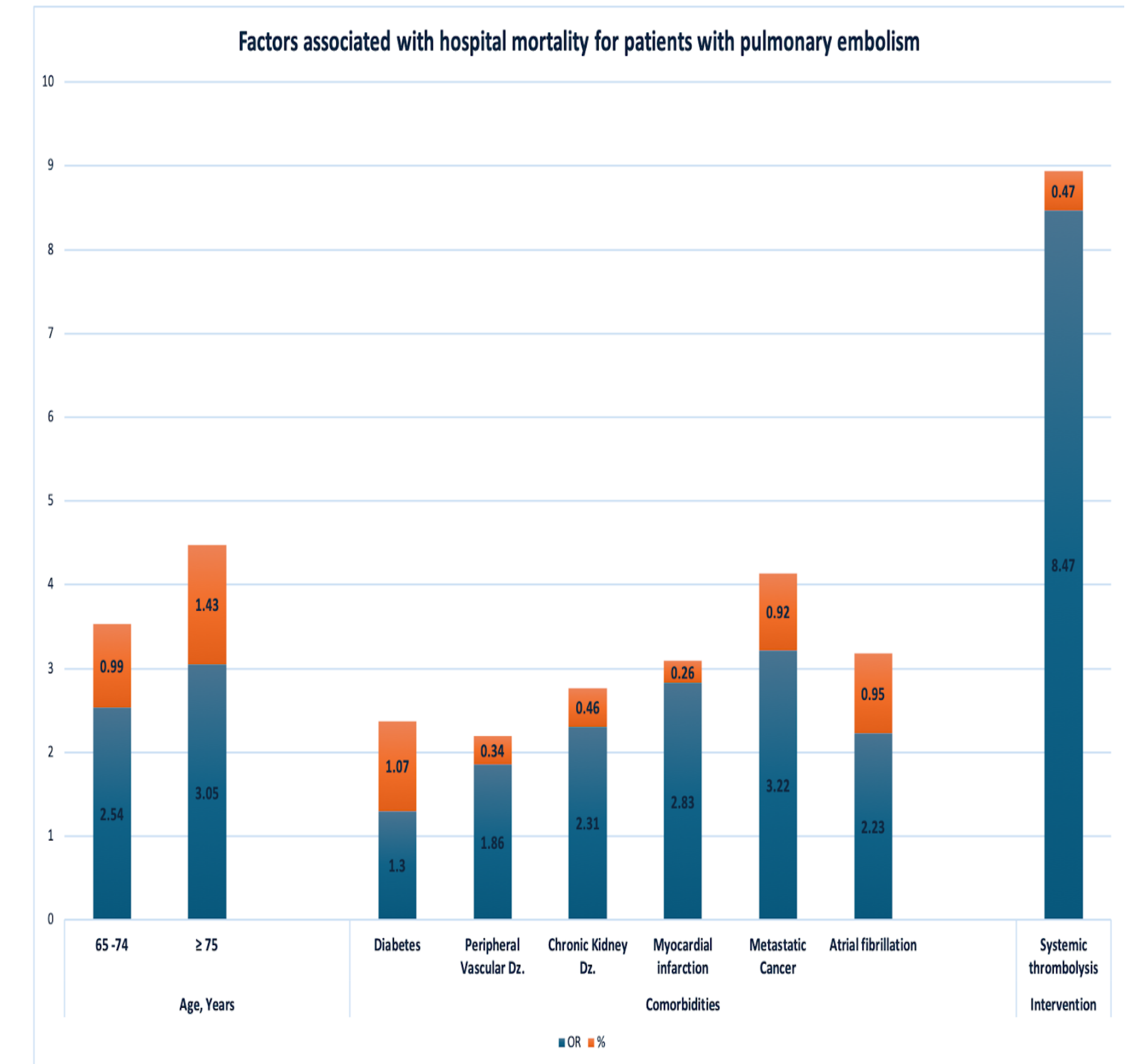


Figure 1

Factors associated with Endovascular therapy in patients with PE

	Variables	EVT N (%)	Adjusted OR	CI	p-value
Age (years)	45-54	77 (0.76)	1.7	1.17-2.49	0.0016
Comorbidities	Atrial Fib.	49 (0.48)	2.01	1.44-2.82	<.0001
	Obesity	130 (1.28)	2.36	1.83 - 3.03	<.0001
Mortality in EVT patients		19 (0.19)	2.23	1.36 - 3.68	0.0016

Conclusions

Patients with PE had a high in-hospital mortality in New York. There are several independent predictors of increased mortality in these patients. Clinical awareness/modification of these predictors could decrease the mortality rate among patients with PE.

Contact

Chukwuka Eneh, MD
Brookdale University Hospital and Medical
Center, Brooklyn, NY
c.eneh168@gmail.com
9175431607