Poster No. PE 342

International Surgical Week
The World's Congress of Surgery
isw2024.org
Kuala Lumpur, Malaysia
25-29 August 2024

Impact of postoperative cardiovascular complications on 30-day mortality after major abdominal surgery: An International prospective cohort study

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Introduction

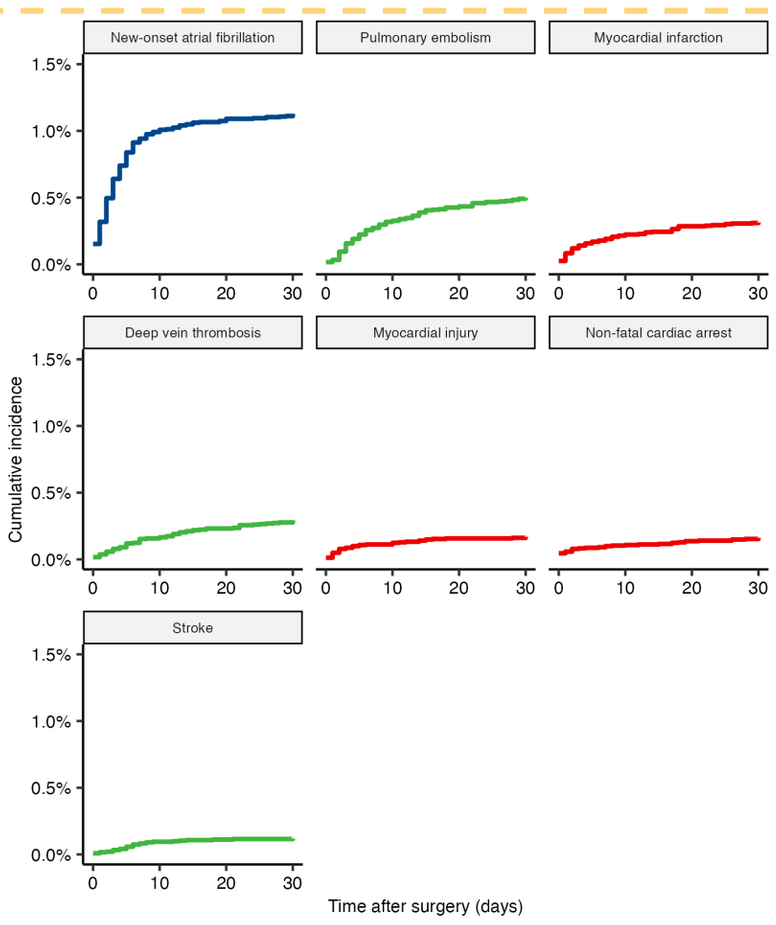
- Postoperative cardiovascular complications (PCC) after major surgery are a problem.
- This is compounded by confusion over definitions and variability in assessment and management of patients.
- This study aimed to define incidence and timing of PCC and to investigate its impact on 30-day all-cause mortality.

Methods

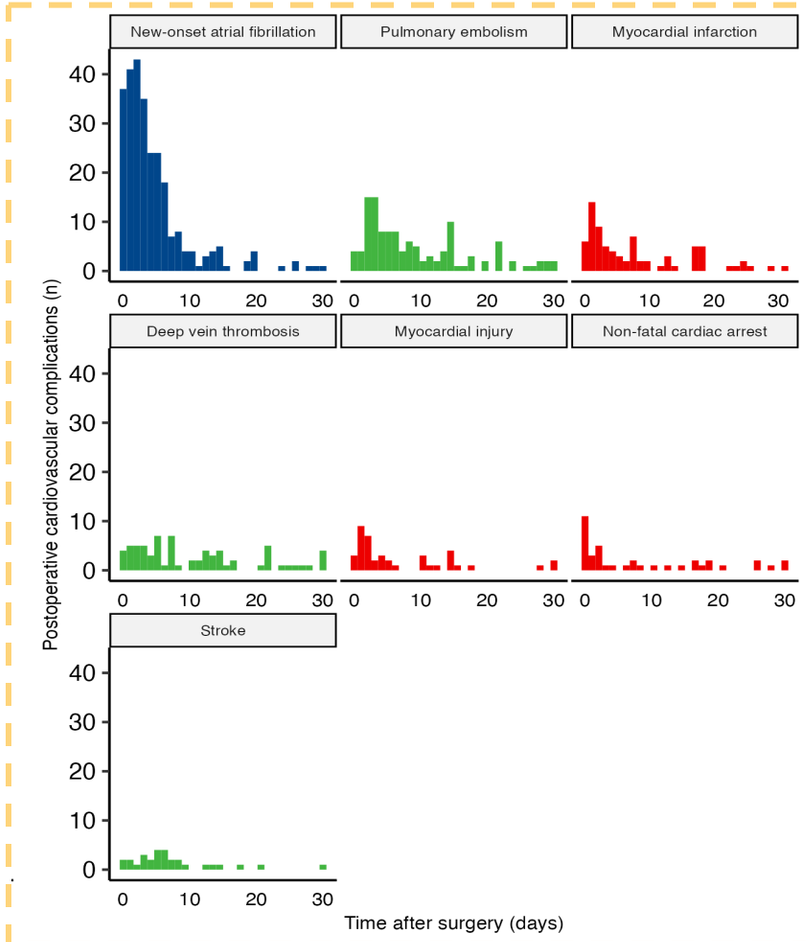
- Prospective cohort study was performed between January 23 and May 1, 2022 in 446 hospitals from 28 countries across Europe.
- Multilevel logistic regression was used to adjust for risk factors associated postoperative cardiovascular complications rates between countries.

Results

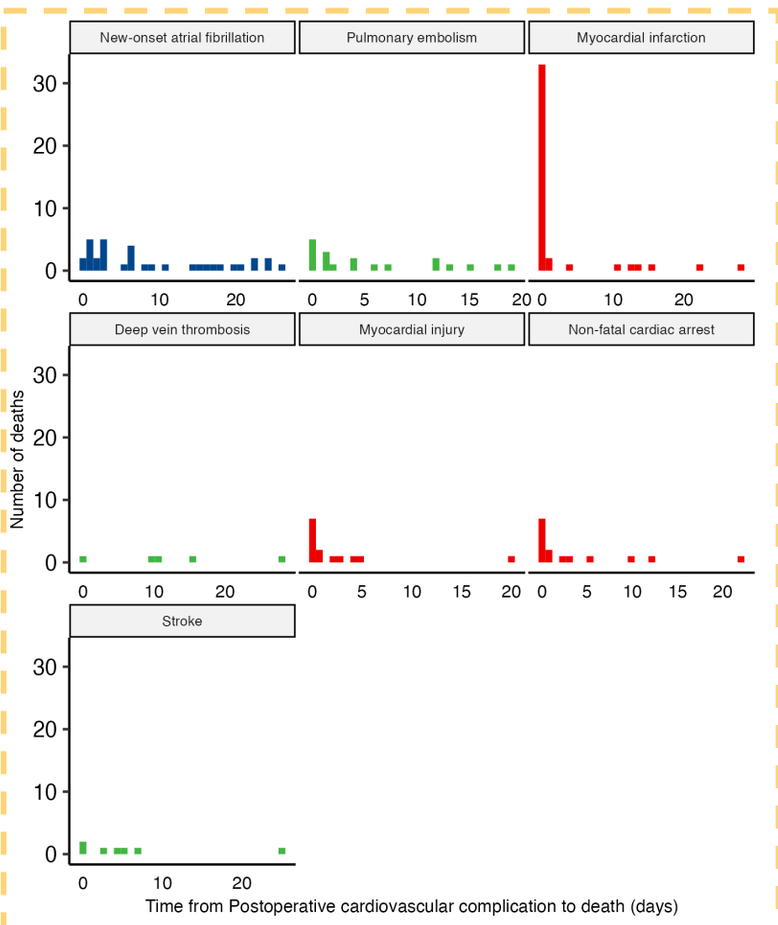
Cumulative incidence



Time of onset after surgery



Time of PCC to death



Impact on 30-day mortality after surgery

		Association with 30-day mortality		Treatment effect on 30-day mortality	
	30-day mortality rate (%)	Unadjusted HR (95% CI)	Adjusted HR (95% CI)	ARR (95% CI)	Risk reduction
All PCC	19.8% (n=121/611)	11.54 (8.91-14.95, p<0.001)	4.15 (3.14-5.48, p<0.001)	0.42% (0.32-0.52, p<0.001)	21.6%
New-onset Atrial Fibrillation	12.1% (n=33/273)	8.79 (6.15-12.57, p<0.001)	3.09 (2.12-4.49, p<0.001)	0.10% (0.00-0.25, p=0.081)	6.5%
Myocardial Event	47.0% (n=63/134)	44.33 (33.87-58.04, p<0.001)	11.86 (8.70-16.18, p<0.001)	0.25% (0.17-0.33, p<0.001)	14.4%
Thrombo-embolic Event	12.3% (n=25/204)	8.97 (5.98-13.47, p<0.001)	3.56 (2.32-5.45, p<0.001)	0.08% (0.02-0.33, p=0.351)	13.0%

Conclusion

- Postoperative cardiovascular complications are relatively common and occur early after major abdominal surgery.
- However, over 1 in 5 postoperative deaths were attributable to these complications, highlighting an important area for future randomised trials.

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