Secular Trends in the Utilization of Systemic Lysis and Catheter Directed Thrombectomy in the Treatment of Intermediate and High-Risk PE

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Background

- The Pulmonary Embolism Response Team (PERT) program at our 938-bed quaternary medical center was founded in March 2017
- A collaborative effort between Critical Care and Interventional Cardiology, as one of the founding members of the National PERT Consortium™.
- The program is a protocol, data-driven model, reflecting best evidence by:
  - Continuously refining the treatment protocol
  - Activation algorithm
  - Care recommendations
- Key program growth and refinement initiatives include:

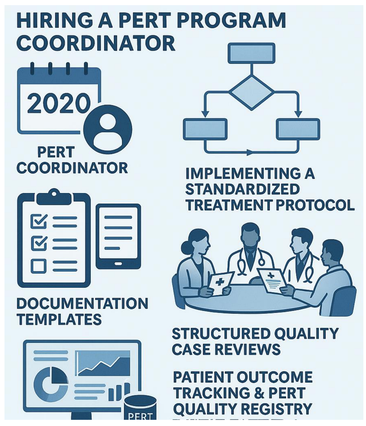

Figure 1. Key program milestones

Purpose

- This analysis aimed to examine the trends in treatment decisions for intermediate and high-risk pulmonary embolism (PE) within a single site's PERT program

Methods

- A retrospective analysis of the treatment provided to all intermediate and high-risk patients admitted to the site between 2021-2024 was conducted

Methods Cont.

- De-identified patient information was compared with Chi-square test between those that received anticoagulation alone vs systemic lysis or catheter directed thrombectomy (CDT)
- Of note, during this timeframe in late 2022, the site began enrolling in two different PE trials

Results

- The analysis included treatment of (n=683) patients hospitalized with acute intermediate and high-risk PE over four years (Figure 2 & Table 1)

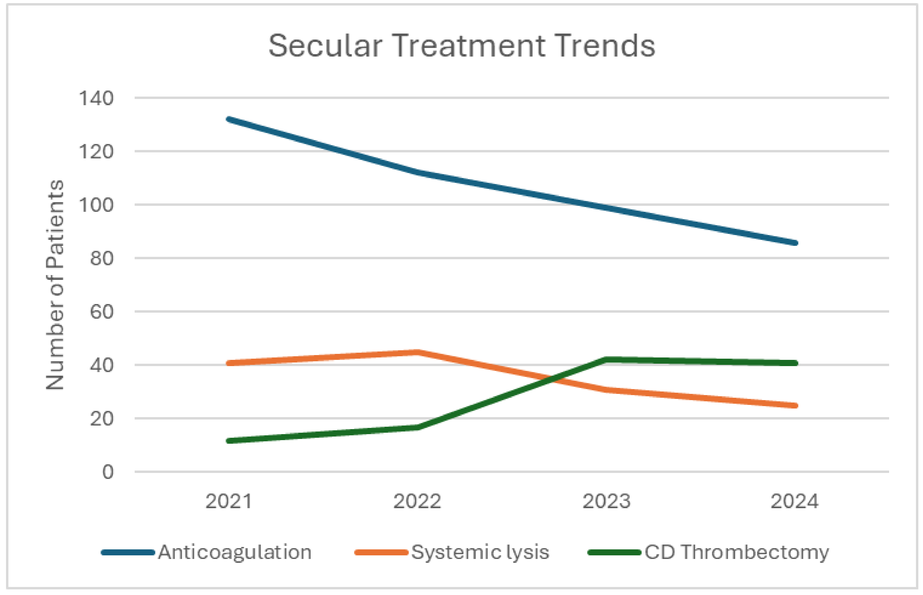

Figure 2. Secular treatment trends 2021-2024

Treatment Modality	2021 n (%)	2024 n (%)	p-value
Anticoagulation Alone	132 (71%)	87 (57%)	0.005
Systemic Lysis	41 (22%)	25 (16%)	0.188
Catheter Directed Thrombectomy	12 (6%)	41 (27%)	<0.001

Table 1:. Summary of treatment trends

Conclusions

- This analysis reveals a significant shift in the therapeutic approach to intermediate and high-risk PE within a single-site PERT program
- Over the four-year study period, there was a marked increase in the use of CDT, rising from 6% in 2021 to 27% in 2024
- This trend reflects growing confidence in catheter-based interventions, likely influenced by evolving clinical experience, protocol refinement, and participation in ongoing PE trials
- This may influence future guidelines in management strategies for PE as trial data and real-world experience coalesce

Implications for Practice

- Continued participation in national registries and structured case reviews supports benchmarking and quality assurance
- These efforts can help identify best practices, track outcomes, and guide future research priorities
- Future work to include evaluation of clinical outcomes of selected treatment
- The single-center design limits generalizability. Future multicenter studies are needed to validate these trends and assess long-term outcomes, cost-effectiveness, and patient-centered metrics

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