

- [Paper](#)
- Primary Outcomes
- Secondary Outcomes
- Reported Result
  - “When compared with AC alone, CDT had lower mortality but high major bleeding and numerically higher ICH”
  - “The risk of mortality and ICH was high with ST when compared with CDT.
  - Findings were similar when analysis was restricted to intermediate risk PE.

## Problems

### The Definition of Risk Groups is not Stated

- Uses “intermediate risk,” “high risk”, and “intermediate-high risk,” thus mixing terminologies
  - **2019 ESC:** low, intermediate-low, intermediate-high, high
  - **2011 AHA:** massive, sub-massive, low risk
  - **2016 CHEST:** low high, PE without hypotension, PE with hypotension

### Very few RCT patients got CDT

| Total Papers (n=45) |             |              |
|---------------------|-------------|--------------|
| patient_type        | number      | percent      |
| AC                  | 19976       | 24.4%        |
| <b>CDT</b>          | <b>9610</b> | <b>11.8%</b> |
| ST                  | 52119       | 63.8%        |
| total               | 81705       | NA           |

  

| Intermediate-Risk Papers (n=20)   |  |  |
|---|--|--|
| $\text{patienttype}^{\text{number}^{\text{percent}}} \mid \text{AC} \mid 8873 \mid 75.9\% \mid \text{CDT} \mid 1929 \mid 16.5\% \mid \text{ST} \mid 883 \mid 7.5\% \mid \text{total} \mid 11685 \mid 14.3\% \text{ (of } n_{\text{total}} \text{)}$ |  |  |

  

| RCT Trials Only (n=17)   |  |  |
|--|--|--|
| $\text{patienttype}^{\text{number}^{\text{percent}}} \mid \text{AC} \mid 1101 \mid 49.8\% \mid \text{CDT} \mid 78 \mid 3.5\% \mid \text{ST} \mid 1031 \mid 46.7\% \mid \text{total} \mid 2210 \mid 2.7\% \text{ (of } n_{\text{total}} \text{)}$ |  |  |

**This means that the number of CDT patients from RCTs is only  $\frac{n_{\text{CDT}}}{n_{\text{total}}} = \frac{78}{81611} = 0.096\%$  of the study total!!**

ULTIMA trial (2013), CDT vs AC (\$N = 59\$)

TATED (2021 in India), CDT vs ST (\$N = 50\$).

CANARY (2022 in Iran), CDT vs AC (\$N = 94\$)

### The Primary Outcome is not reported correctly, given likely intransitivity

The paper utilized a network meta-analysis ([1,2,3](#)).

They list that “[t]he primary analysis compared CDT and systemic fibrinolysis with AC alone.” However, they combine RCTs, prospective, and retrospective studies, raising

serious questions of intransitivity.

## Statistical Issues

### No attempts to control family-wise error rate

### They had to change their statistical analysis strategy

Interestingly, they do NOT report p values for their efficacy outcome – just 95% CI.

Publication inconsistency for their efficacy outcome was significant ( $p = 0.036$ ), but there was no inconsistency at the loop level using a loop inconsistency plot.

Thus, they had to perform a direct meta-analysis. For this analysis, they reported p values (?!). Why would they only report p-values for a “backup” analysis method.

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