

- 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)		
patienttype	number	percent
AC	8873	75.9%
CDT	1929	16.5%
ST	883	7.5%
total	11685	14.3% (of \$n{total}\$)

  

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

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

### 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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