- 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 morality 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%
CDT	**9610**	**11.8%**
ST	52119	63.8%
total	81705	NA

Intermediate-Risk Papers (n=20)
patient*type^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)
patient*type^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!!

ULTIMA trial (2013) was only CDT RCT looked at, and $N = 59 (n = [30,29])$

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.