

A network meta-analysis of anticoagulant treatment for sepsis- or infection-induced disseminated intravascular coagulation

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Background

It is unclear whether anticoagulant treatment is necessary for sepsis or induced disseminated intravascular coagulation (DIC). Therefore, we performed a network meta-analysis to evaluate the effects of various anticoagulant treatments and placebo treatment for patients with sepsis induced DIC.

Materials and Methods

Data base: PubMed, MEDLINE, Cochrane (June 18, 2017)

Inclusion criteria: (1) randomized controlled study (2) full-text publication in English (3) adult critically ill patients with sepsis induced DIC (4) assess mortality, DIC resolution rate, bleeding complications

Anticoagulant agents: antithrombin, thrombomodulin, heparin, protease inhibitors

Primary outcome: Mortality

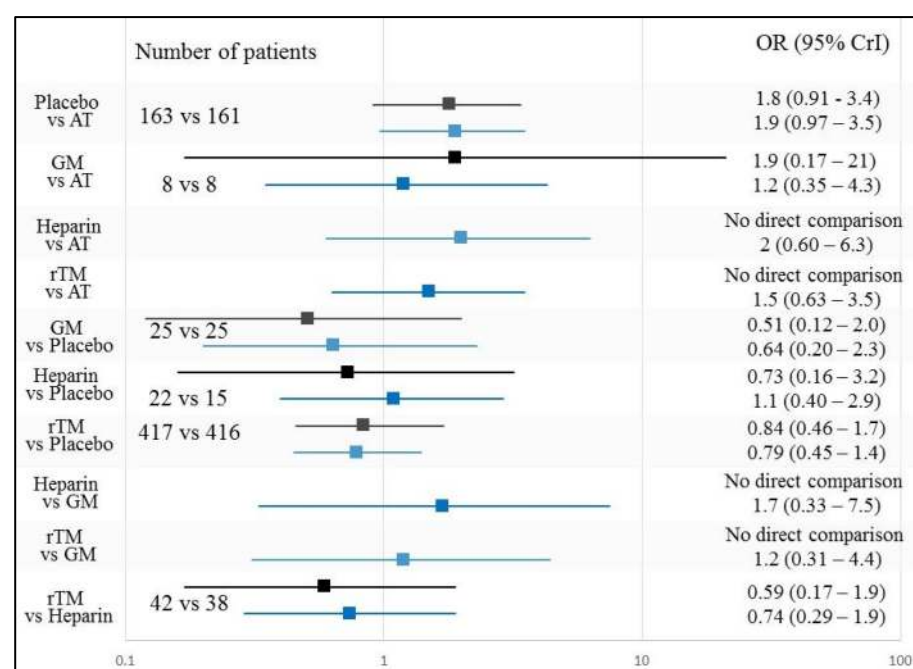
Secondary outcomes: DIC resolution, risk of bleeding complications

Analysis: Network meta-analysis was performed within a Bayesian framework meta-analysis

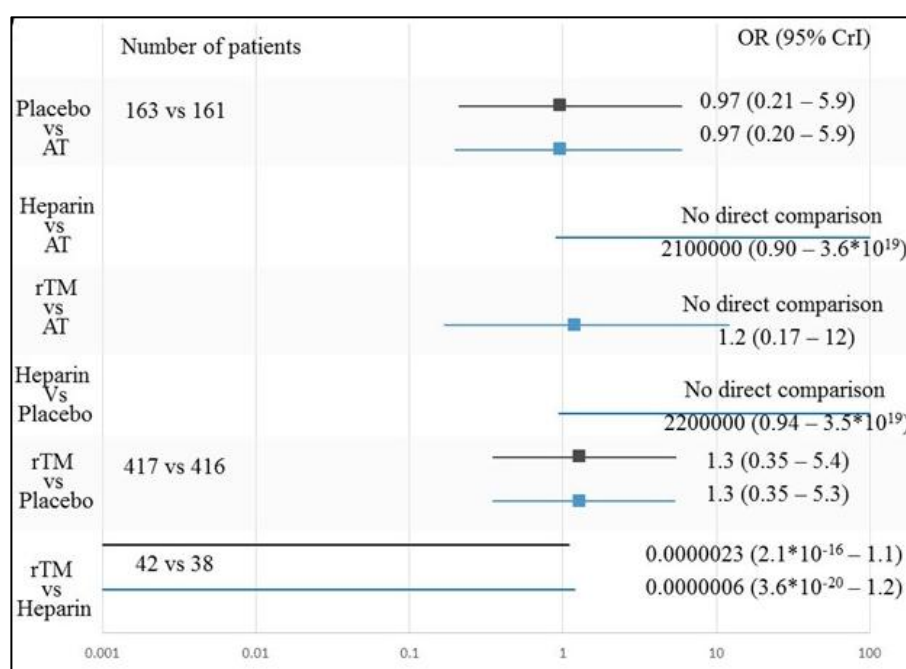
It provided a rank probability for each anticoagulant and placebo treatments and outcomes

Results

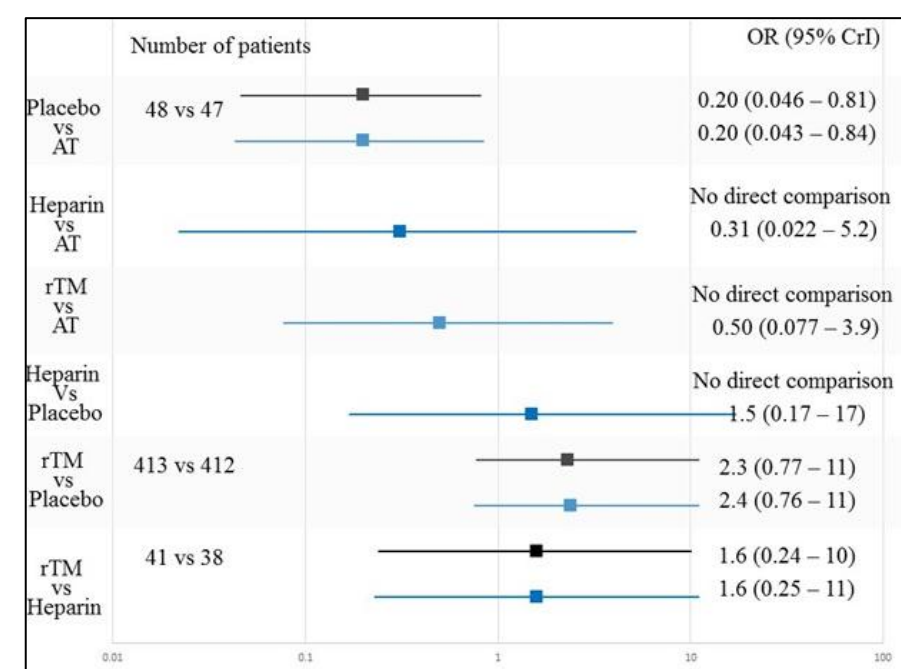
- ✓ This analysis included 1340 patients from 9 studies.
- ✓ There were no significant differences in mortality and bleeding complications.
- ✓ Placebo was associated with a significantly lower rate of DIC resolution compared to antithrombin.
- ✓ Heparin might be the worst treatment in terms of bleeding complications.



(Mortality)



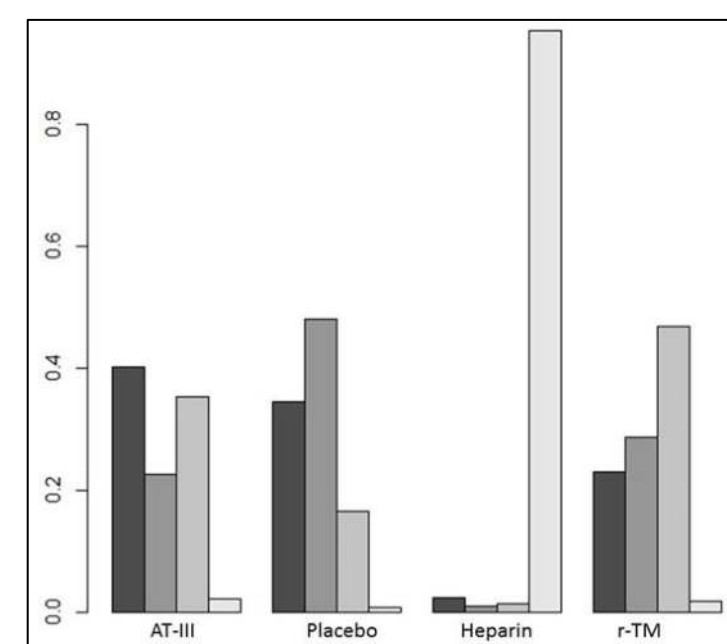
(Bleeding complication)



(DIC resolution)

Conclusion

- ✓ The present study revealed no significant difference in the risks of mortality and bleeding complications for all comparisons of the four anticoagulant treatments and the placebo treatment
- ✓ However, antithrombin treatment might be superior to placebo treatment in resolving sepsis- or infection-induced DIC
- ✓ We think that benefits of anticoagulant for septic DIC remain unclear.
- ✓ Nevertheless, only 9 randomized controlled trials were eligible for the present study, which indicates that further studies are needed to validate our findings



(Rank probability of Bleeding complication)