Introduction:
Supplementation of antithrombin (AT) might decrease heparin requirement to achieve an adequate level of anticoagulation during extracorporeal membrane oxygenation (ECMO). Formal recommendations on target, timing, and rate of AT supplementation are lacking. We conceived this study to evaluate the effect of prolonged AT supplementation in adult patients requiring veno-venous ECMO for respiratory failure on heparin dose, adequacy of anticoagulation and safety

Methods:
Before ECMO start patients were randomized to either receive AT supplementation to maintain a functional AT level between 80 and 120% (AT supplementation group) or not (control group) for the entire ECMO course. Anticoagulation was provided with unfractionated heparin following a standardized protocol [1]. The primary outcome was the dose of heparin required to maintain the ratio of activated partial thromboplastin time between 1.5 and 2. Secondary outcomes were the adequacy of anticoagulation measured with anti-Factor Xa and the incidence of hemorrhagic and thrombotic complications and amount of blood products transfused

Results:
From August 2017 to March 2019, 72 patients were screened and 49 enrolled in the study. Forty-eight patients underwent final analysis (1 patient was excluded for erroneous randomization). Patients did not differ with regards to baseline characteristics. AT (%) was 82.6±23.3 % in the control group and 106.2±22.3 %, p=0.001 in the treatment group. Supplementation of AT did not decrease heparin dose (14.9±6.2 vs 13.8±6.6 IU/Kg/h in the control and treatment group respectively, mean difference: -1.2 (95% CI: -3.7; - 1.2), p=0.33) and anti-Factor Xa levels. Bleeding, blood product transfusions and thrombotic complications and amount of blood products transfused

Conclusion:
AT supplementation did not decrease heparin requirement in patients on veno-venous ECMO for respiratory failure

References: