

FIGURE 1: ROC curve for CT chest total severity score sensitivity and specificity to predict mortality in patients with renal impairment with COVID-19 infection.

MO149 EFFECT OF PLASMA EXCHANGE ON COVID-19 ASSOCIATED EXCESS OF VON WILLEBRAND FACTOR AND INFLAMMATION IN CRITICALLY ILL PATIENTS

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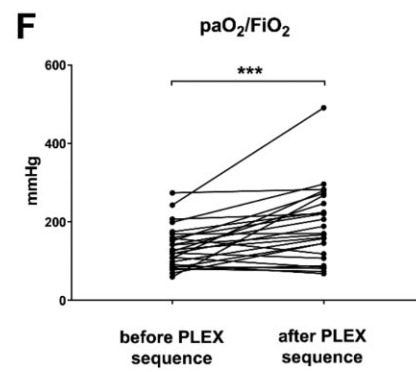
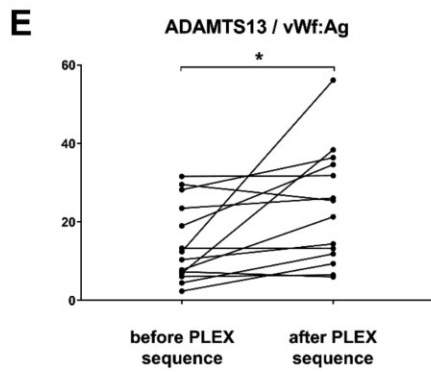
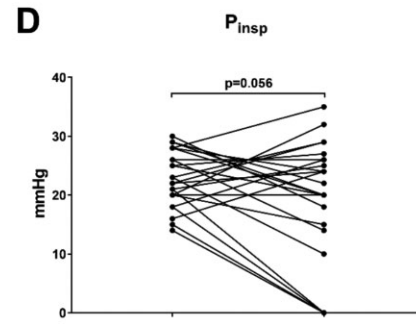
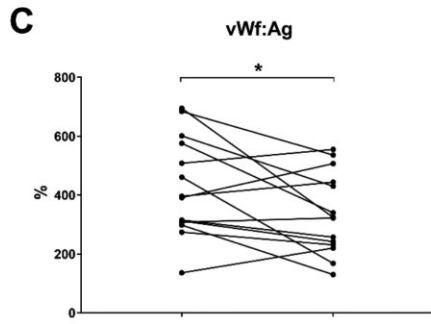
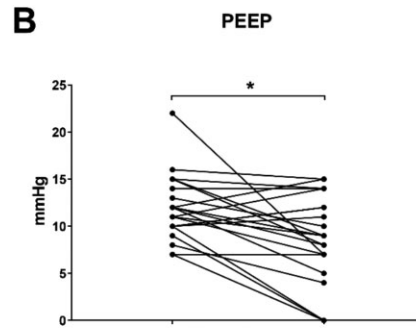
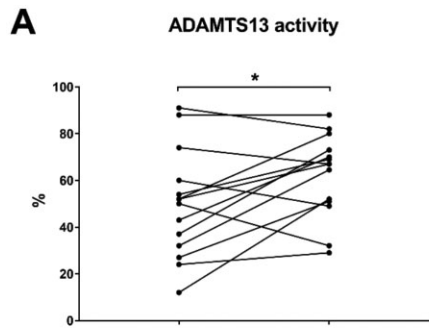
BACKGROUND AND AIMS: Ubiquitous microthromboses in the pulmonary vasculature play a crucial role in the pathogenesis of COVID-19 associated acute respiratory distress syndrome (ARDS). Excess of von Willebrand factor (vWf) with intravascular multimer formation was identified as a key driver of this finding. Plasma exchange (PLEX) might be a therapeutic option to restore the imbalance between vWf and ADAMTS13. We report the effects of PLEX on vWf, ADAMTS13, inflammatory cytokines and parameters of ventilation.

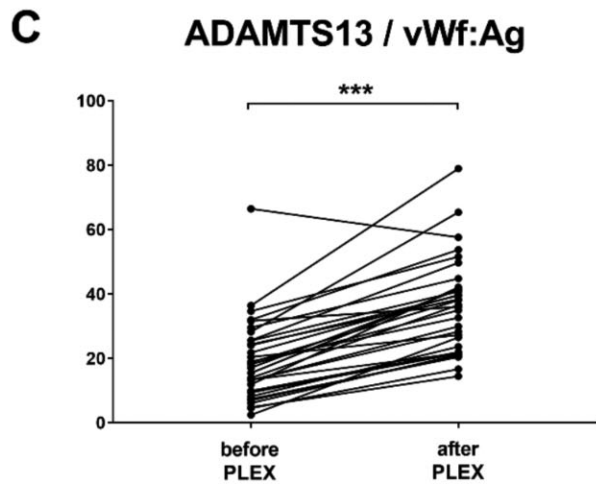
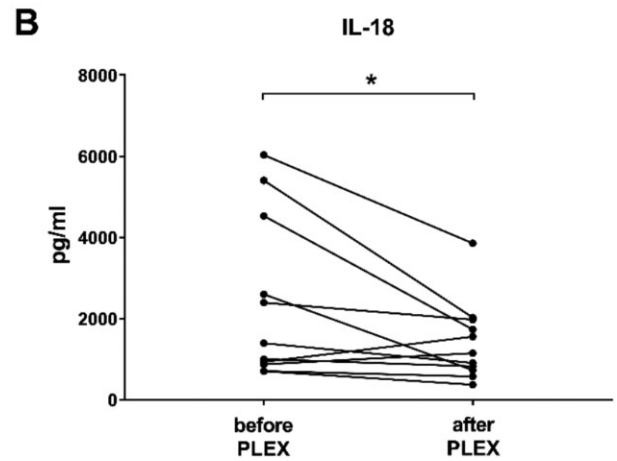
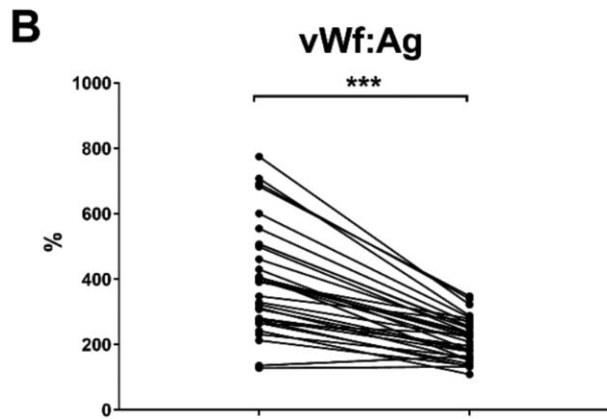
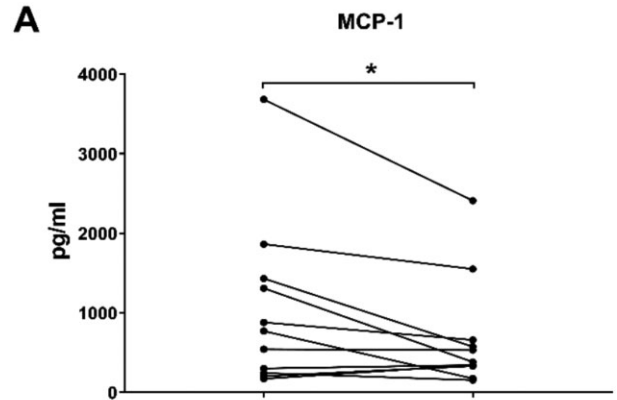
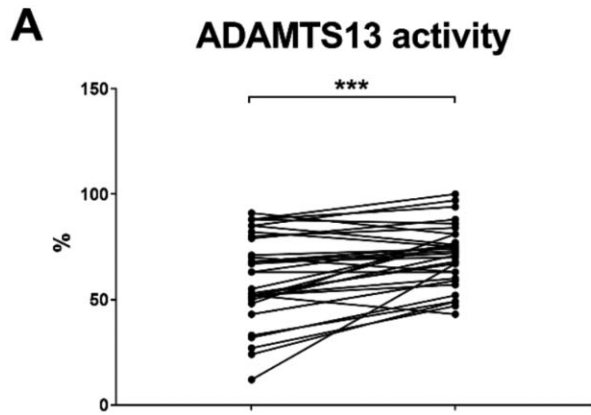
METHOD: We investigated 25 patients, who were on mechanical ventilation for COVID-19 pneumonia with ARDS at two German university hospitals. All patients

received PLEX as an ultima ratio measure for refractory ARDS. Vwf antigen (vWf: Ag), ADAMTS13 activity, a cytokine panel mirroring the inflammatory situation and clinical parameters were assessed before and after three to six PLEX therapies with fresh frozen plasma.

RESULTS: Before the PLEX sequence, there was an excessive release of vWf: Ag ($425.4 \pm 167.5\%$) and mildly reduced ADAMTS13 activity ($49.7 \pm 23.3\%$). After the PLEX series, there was a significant increase of ADAMTS13 activity to $62.4 \pm 17.7\%$ ($P = .029$) and a significant decrease of vWf: Ag to $336.1 \pm 138.2\%$ ($P = .041$) resulting in a 63% improvement of the ADAMT13/vWf: Ag ratio from 14.5 ± 10.0 to 23.7 ± 14.6 ($P = .024$). Comparison of parameters before and after individual PLEX sessions ($n = 35$) revealed a mean reduction of vWf from $387.8 \pm 165.1\%$ to $213.2 \pm 62.3\%$ ($P = .001$) and an increase of ADAMTS13 activity from $60.4 \pm 20.1\%$ to $70.5 \pm 14.0\%$ ($P = .001$). Parallely, monocyte chemotactic protein-1 and interleukin-18 decreased significantly ($P = .034$ each). Along the PLEX sequence lactate dehydrogenase ($P = .001$), C-reactive protein ($P = .001$), and positive end expiratory pressure ($P = .01$) significantly decreased accompanied by an improvement of Horovitz index ($P = .001$).

CONCLUSION: PLEX restores the disbalance between ADAMTS13 and vWf: Ag, a driver of immunothrombosis. Moreover, it reduces the inflammatory state and is associated with a benefit of ventilation parameters. These findings render a further rationale to regard PLEX as a therapeutic option in severe COVID-19.





MO150 **SERUM ANGIOPOIETIN-LIKE PROTEIN 3 LEVEL IS NEGATIVELY ASSOCIATED WITH VASCULAR REACTIVITY INDEX BY DIGITAL THERMAL MONITORING IN CHRONIC HAEMODIALYSIS PATIENTS**

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BACKGROUND AND AIMS: Angiopoietin-like protein 3 (ANGPTL3) plays important roles in lipid and lipoprotein trafficking and metabolism and has demonstrated a positive correlation with cardiovascular risk assessment parameters of carotid and femoral artery intima-media thickness. We evaluated the association between serum ANGPTL3 levels and endothelial function in chronic haemodialysis (HD) patients.

METHOD: Blood samples were obtained from 116 chronic HD patients. We measured the endothelial function—represented by the vascular reactivity index (VRI)—via non-invasive digital thermal monitoring, and serum ANGPTL3 concentrations by using commercial enzyme-linked immunosorbent assay.