Ex vivo treatment of donors with nebulized N-acetylcysteine partially improved post-transplant lung function
Yoshito Yamada, Ilker Iskender, Stephan Arni, Sven Hillinger, Tugba Cosgun, Wolfgang Jungraithmayr, Walter Weder, Ilhan Inci
Division of Thoracic Surgery, University Hospital Zurich, Zurich, Switzerland

Background
Primary graft dysfunction (PGD) is the leading mortality in the early post-transplant (Tx) period and also a risk factor for chronic lung allograft dysfunction (CLAD).

Aim
To investigate the role of donor treatment with inhaled NAC during EVLP followed by porcine lung Tx

Method

Study Protocol

Donor Preparation
Cold storage 24hrs

EVLP (2hrs) with NAC (n=6)/ Saline (n=5)
Inhalation

Left lung Tx
Observation 6hrs

End of Experiment

Results – Donor preconditioning by EVLP

EVLP with NAC suppressed an oxidant protein

Results – Recipient

NAC in EVLP partially improved oxygenation of recipients

No differences in oxidant markers and inflammatory cytokine

Conclusion
Ex vivo treatment of donor lungs with nebulized NAC partially improved post-transplant lung function possibly via reducing oxidative stress. However, the limited observable effects indicate that treatment of donor lungs only might not sufficient in this setting.

Reference