

# Evaluation of the Mitra microsampling device for Torque-Teno-Virus measurement after lung transplantation

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61. Österreichischer Chirurgenkongress

# Torque-Teno-Virus (TTV)

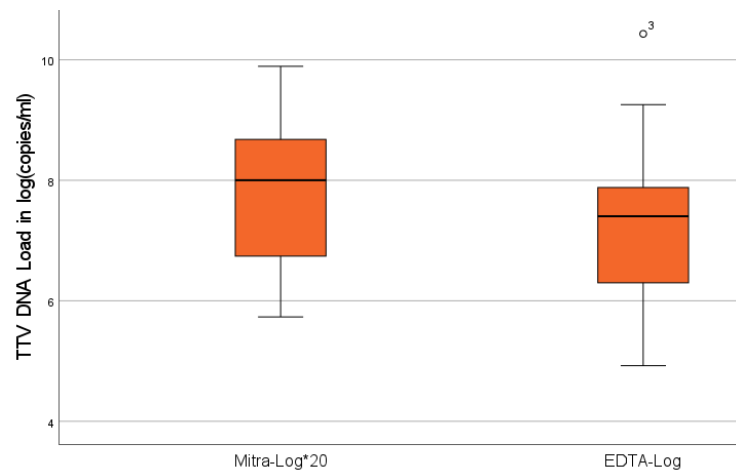
- TTV is an apathogenic virus within the family of Anelloviridae
- It is found in healthy adults in over 90% and in organ transplant recipients in almost 100%
- TTV mirrors the immunocompetence of patients after transplantation
- qPCR-based measurement of TTV levels in peripheral blood is a promising tool to monitor immunosuppression

# Methods

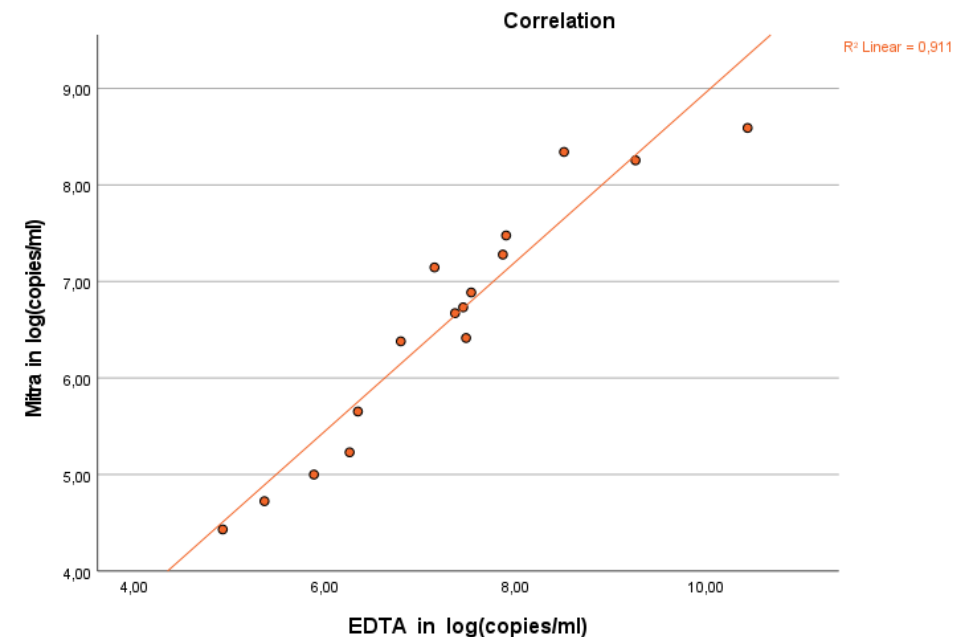
- In stable lung transplantation recipients blood samples were collected from fingertip capillaries using a micro-sampling device (Mitra®<sup>®</sup>, Neoteryx, California, US; 10µl) and simultaneously from standard venous access (EDTA-plasma; 200µl)
- TTV levels were analyzed using rt-PCR in whole blood samples and in plasma extracted from EDTA tubes
- Question: Are levels of TTV comparable in compartments?

# Results

- Blood samples of 11 stable lung transplant recipients (median time after transplantation: 39 months) showed comparable TTV levels in capillary blood (8.0 log copies/ml) compared to plasma samples (7.4 log copies/ml)



- Comparison revealed a linear relationship between capillary and plasma levels (Pearson correlation coefficient:  $r=0.96$ ,  $p<0.001$ )



# Conclusion

- Results of this pilot study revealed a strong correlation between levels of TTV in capillary blood and plasma in long-term stable lung transplant recipients' patients
- Capillary blood sample collection using a micro-sampling device could be used to mirror immunocompetence for remote patient monitoring
- Further studies are needed to confirm our preliminary data