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Viability assessment using life confocal microscopy visualizes acute graft damage and predicts early graft dysfunction in liver transplantation

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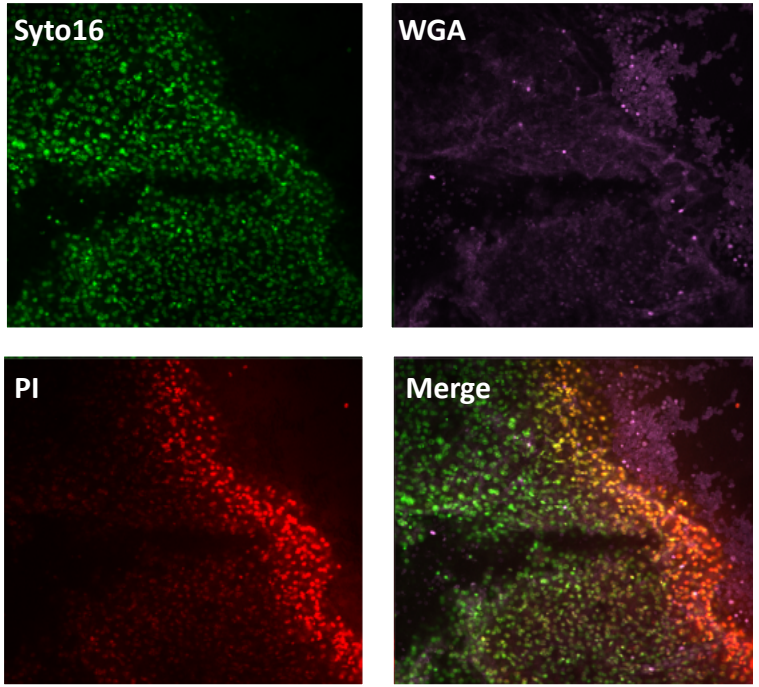
BACKGROUND

- **Organs for transplantation are notoriously scarce – worldwide**
- **More organs from extended criteria donors (ECD) have to be accepted**
- **Methods to assess the status of a graft are needed to:**
  - **predict function of the graft**
  - **enhance patient experience**

AIM: establishment of a rapid assessment tool of donor liver quality and investigation of its predictive value

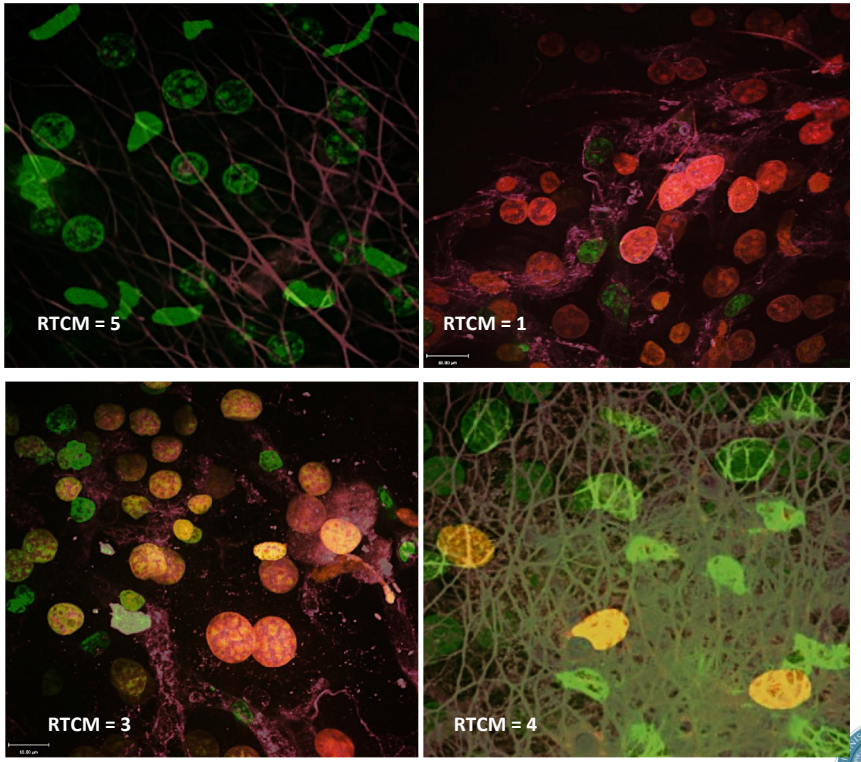
METHODS

- Prospective clinical trial
- Predictive value of real-time confocal microscopy (RTCM) as an assessment tool for organ quality in liver transplantation
- Fluorescence dyes: Syto16 (viable cells), PI (non-viable cells) and WGA (tissue morphology)
- Semi-quantitative score (1-5) based on number of viable and non-viable cells per examined area
- Endpoints: early graft dysfunction (EAD), biopsy results (confocal score), recipient, donor and transplant risk factors



RESULTS

- 39 liver transplantations (27 male, 69,2%), 2 DCD donors (5.13%), 29 ECD donors (74,4%)
- Median donor age was 54 years, median recipient age was 59 years, cold ischemia time was 7.1±2.1 hours
- 18 (46.1%) recipients showed EAD
- Mean RTCM score was 3.3±1.5, significantly lower in livers developing EAD (2.7±1.7 vs. 3.8±1.2, p=0.039)
- RTCM score significantly correlated with the occurrence of EAD (p=0.035)



CONCLUSION

- **RTCM of Syto 16/PI und WGA has a predictive value in respect to EAD in clinical liver transplantation**

- **The technique is feasible in the daily routine**