

INTRODUCTION & AIMS

Curcumin is a pleiothrophic polyphenol with antioxidant and anti-inflammatory activity. We aimed to investigate whether adding curcumin – as a water soluble Cyclo-Dextrin Curcumin Complex [CDC, Novobion (Espoo, Finland)] – to the flush solution of liver grafts reduces ischemia reperfusion injury (IRI) and improves liver functions in a well validated preclinical model of liver transplantation (LTx) donated after circulatory death (DCD) in pigs.

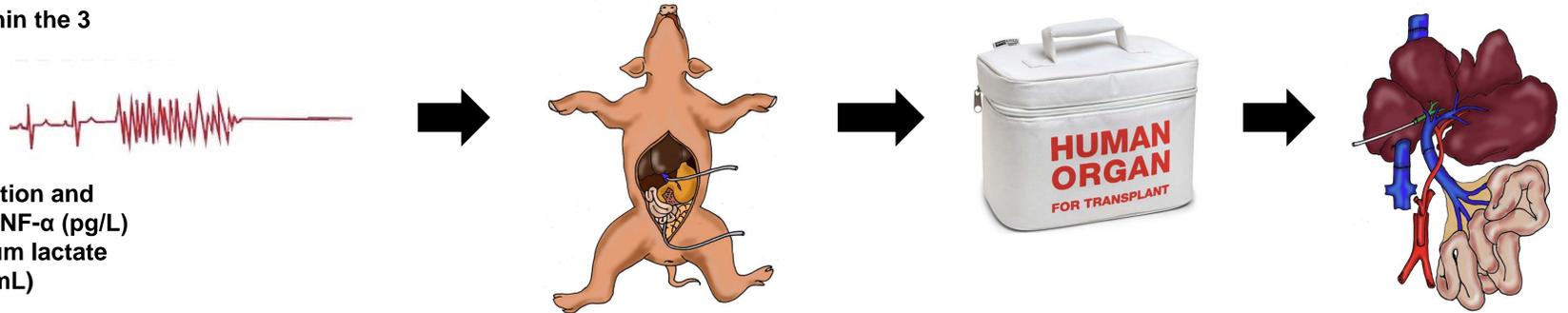
METHODS



Endpoints:
Primary:
Marker of IRI: AUC log AST within the 3 first hrs post reperfusion.

Secondary:
• Marker of Kupffer cells activation and inflammatory cytokine: serum TNF- α (pg/L)
• Markers of liver function: serum lactate (mmol/L) and bile production (mL)
• Recipient survival

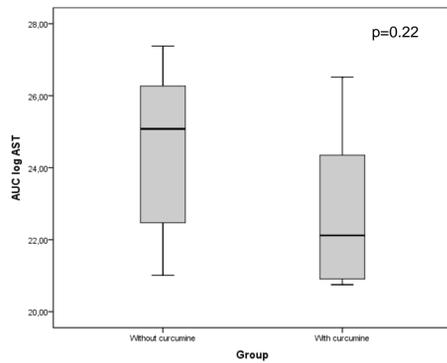
Sacrifice at day 4



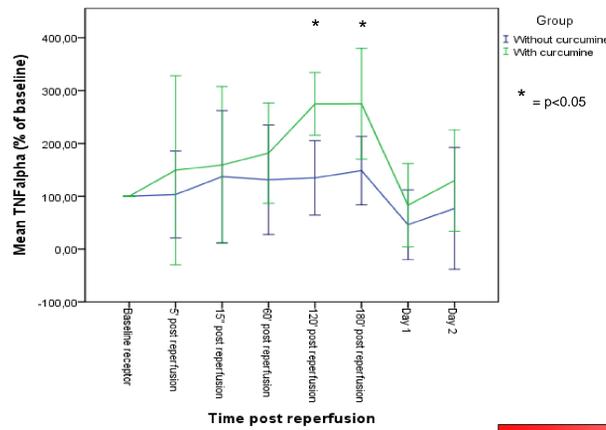
(Comparisons of the outcomes will include Fisher's exact test and chi-squared test for non-continuous variables and analysis of variance (ANOVA) for continuous variables. Other analyses will include data summaries, and other statistical tests as appropriate. Sample size calculation is based on AUC of AST values within the 4 days following the liver transplantation obtained from a series of previous experiments using the same DCD LTx model in the University Hospitals Leuven. These values followed a lognormal distribution. It is assumed that the treatment will lead to a 20% reduction of the mean AUC of AST. Based on a two-sided two-sample pooled t-test of a mean ratio with lognormal data, 6 animals are needed in total to have 80% power (with alpha set at 5%).

RESULTS

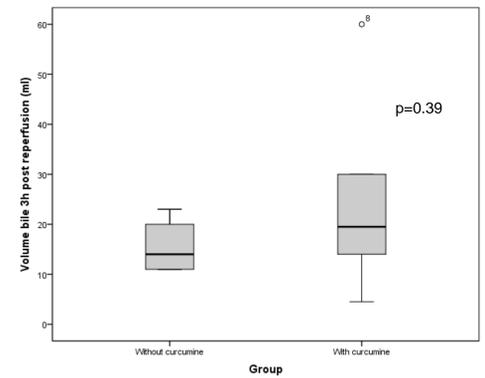
AUC log AST within the 3 first hrs post reperfusion



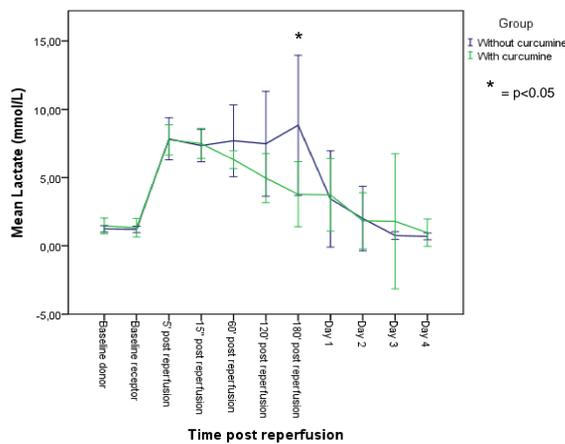
Serum TNF- α



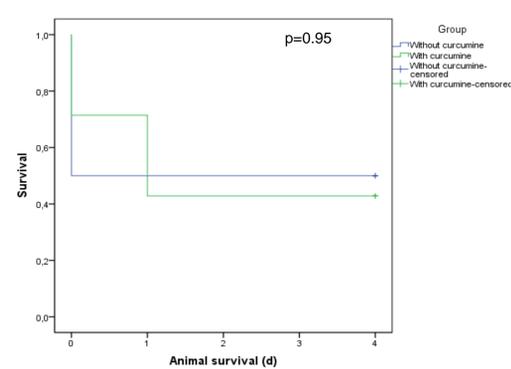
Bile production



Serum lactate



Recipient survival



CONCLUSION & DISCUSSION

Hepatic IRI, liver function and recipient survival was not improved by adding 60µM CDC to the flush solution in a well validated pig DCD LTx model.

The increase of TNF- α by adding an anti-inflammatory compound was not expected.

These findings deserve further investigation, especially in light of encouraging results in kidney IRI.