

#9. Hydrogen-rich preservation solution attenuates lung ischemia-reperfusion injury after prolonged cold ischemia in a canine left lung transplant model

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Background

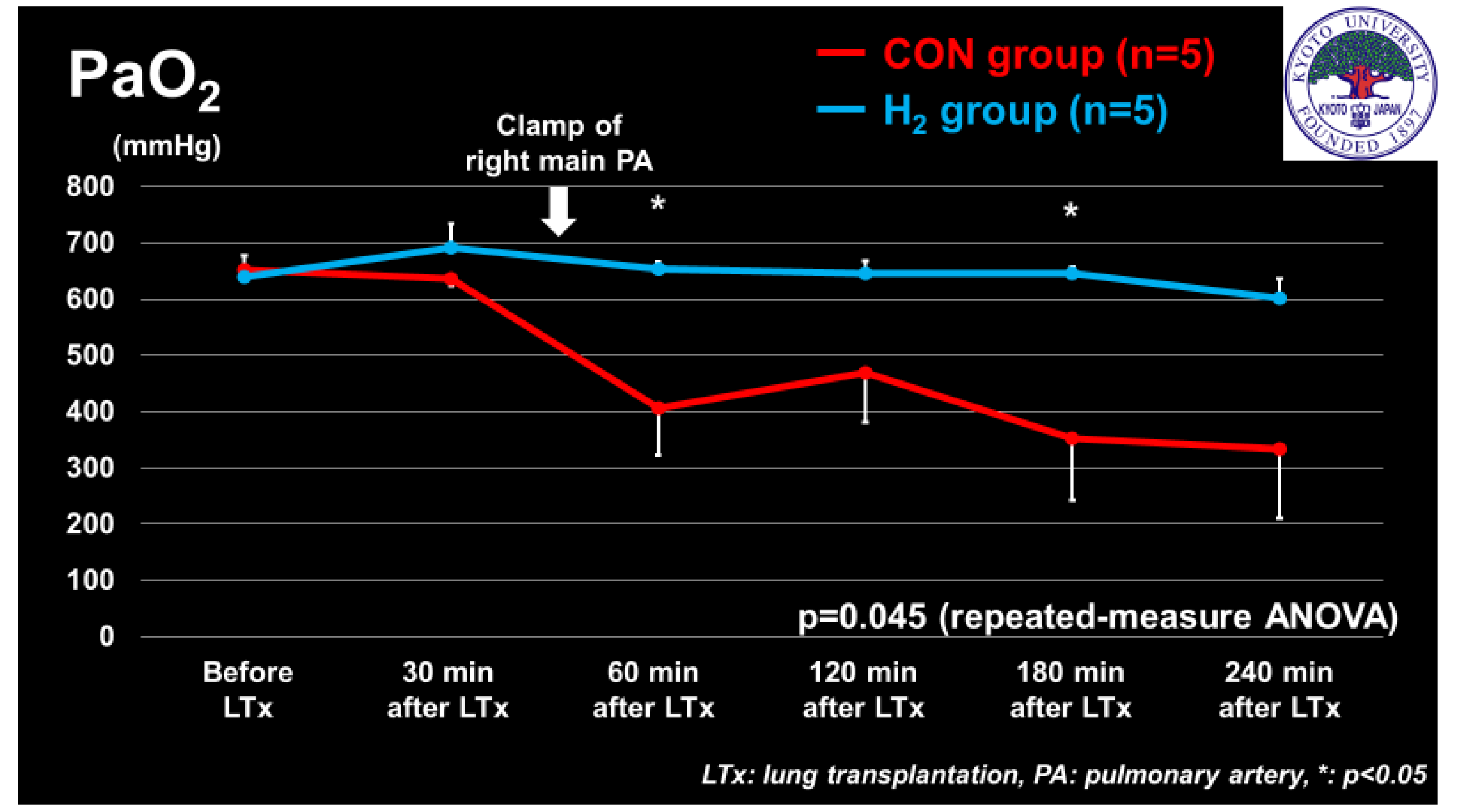
Molecular hydrogen (H₂)

- protective effects on ischemia-reperfusion (I/R) injury in various organs

Antioxidative effect
 Anti-inflammatory effect
 Anti-apoptosis effect

However, most of the reports are on **inhalation** of H₂

Ohsawa I, et al. Nature Med 2007
 Hayashida K, et al. Biochem Biophys Res Commun 2008
 Kawamura T, et al. Surgery 2011
 Haam S, et al. J Heart Lung Transplant 2018



Background

Our group has previously reported ...

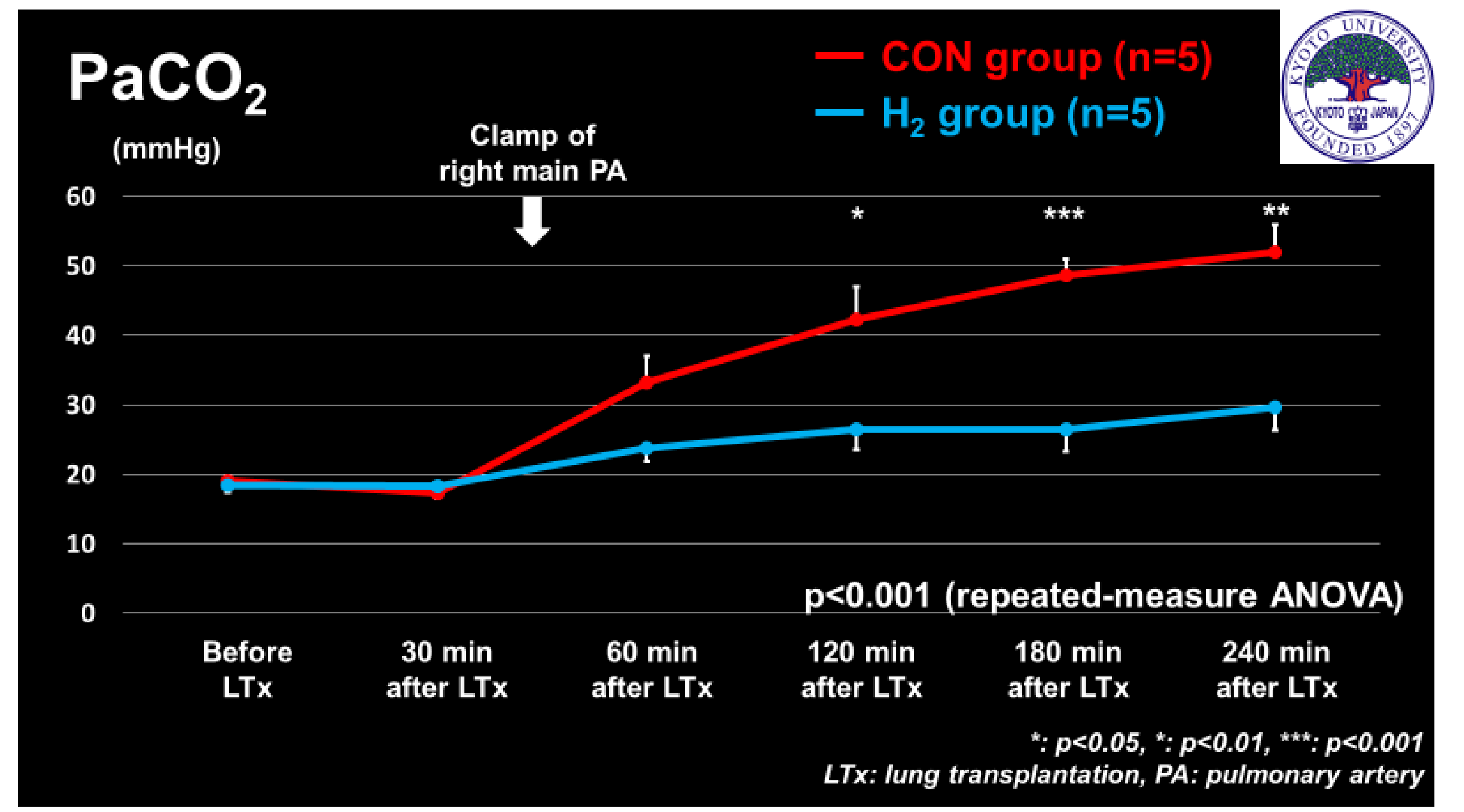
the protective effects of **H₂-rich solution** on lung I/R injury in a rat left hilar clamp model

Takahashi M, et al. Eur J Cardiothorac Surg 2017

the protective effects of **H₂-rich preservation solution** on lung preservation in a rat left LTx model

Saito M, et al. ISHLT 2018 Annual Meeting

H₂: molecular hydrogen, I/R: ischemia-reperfusion, LTx: lung transplantation

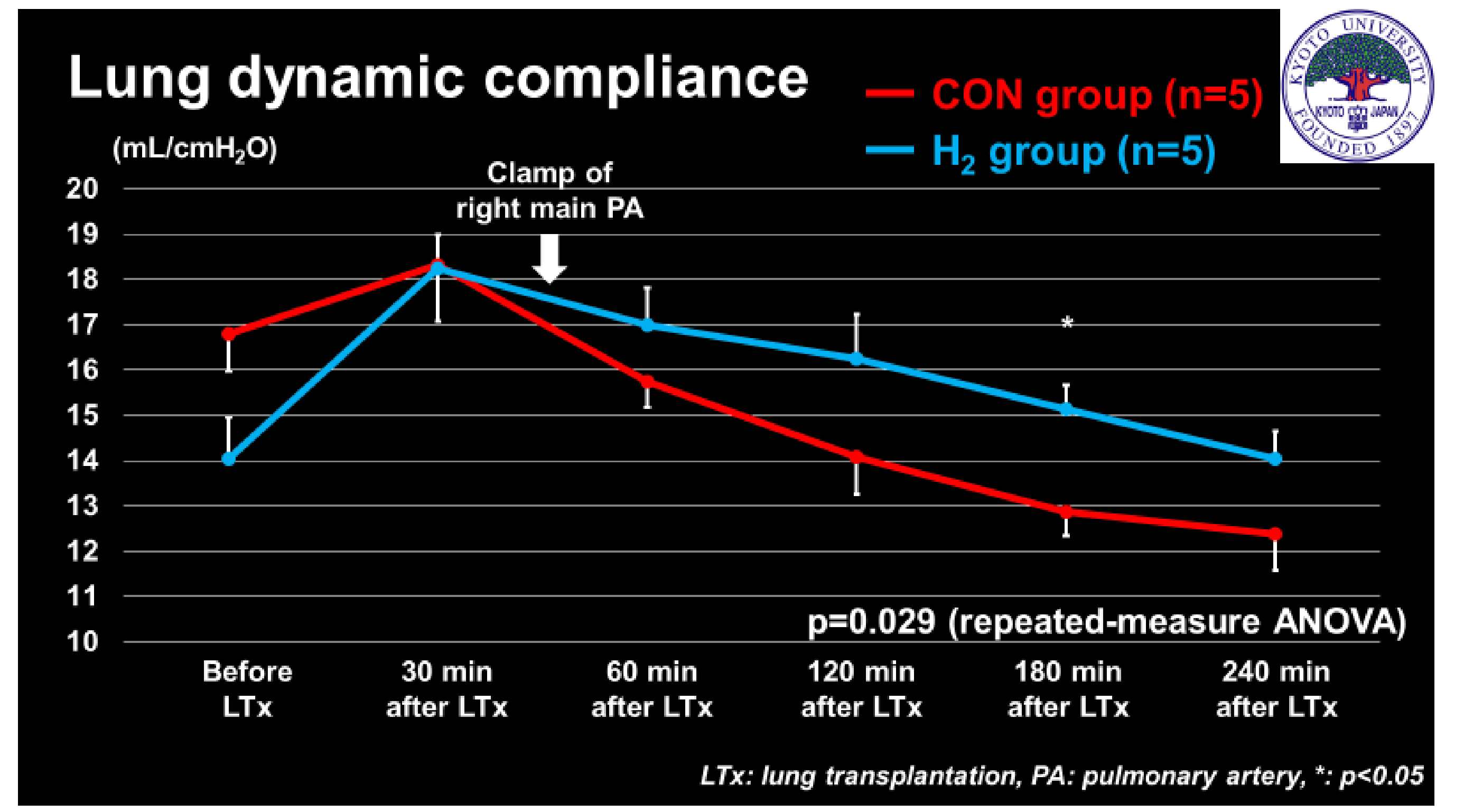


Background

Advantages of H₂-rich preservation solution

- **Easy to transport**
possible to use both for flushing and immersing
- **Safe to use**
since H₂ gas has flammable and explosive properties
- **Efficient to deliver**

H₂: molecular hydrogen

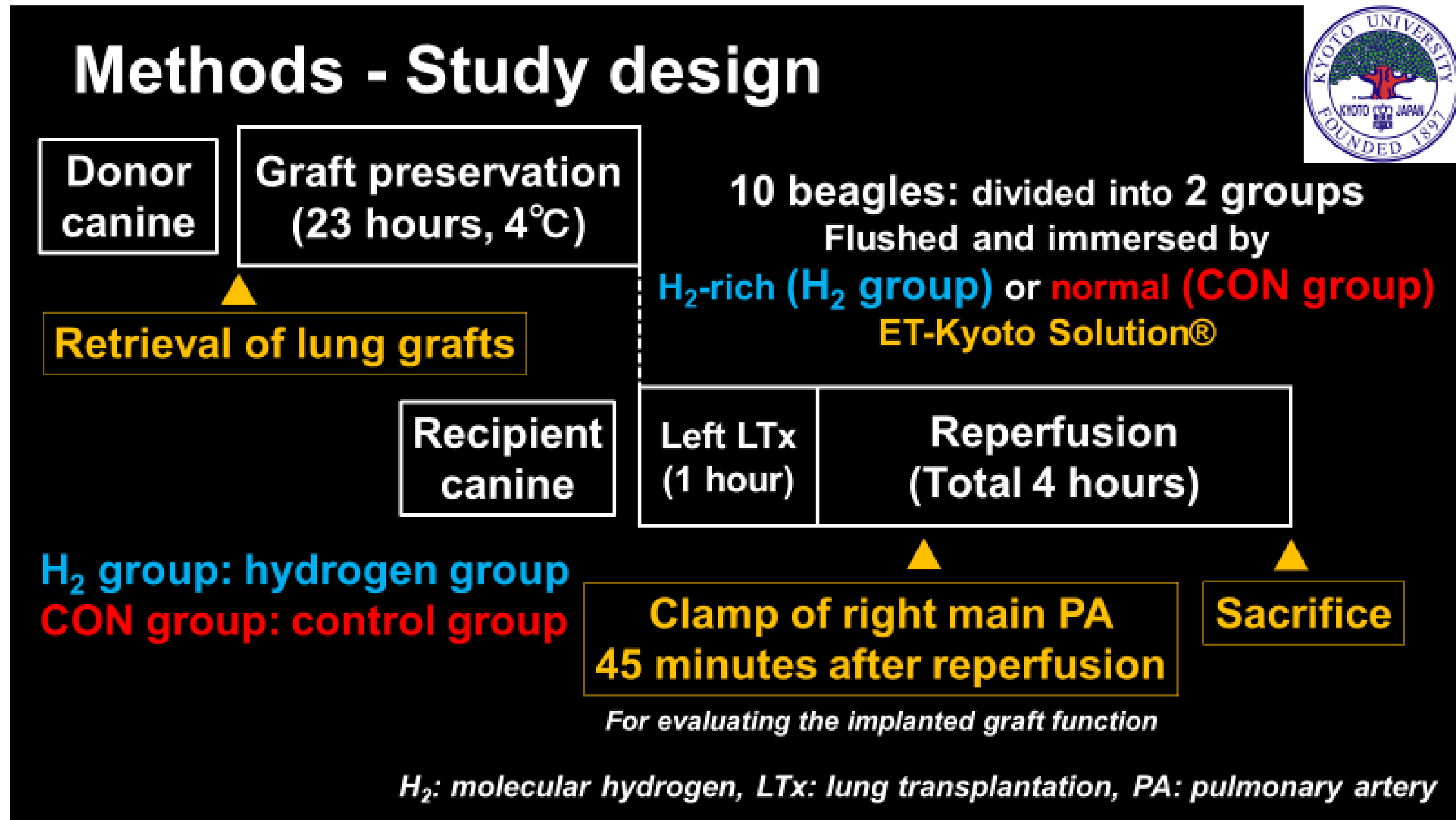
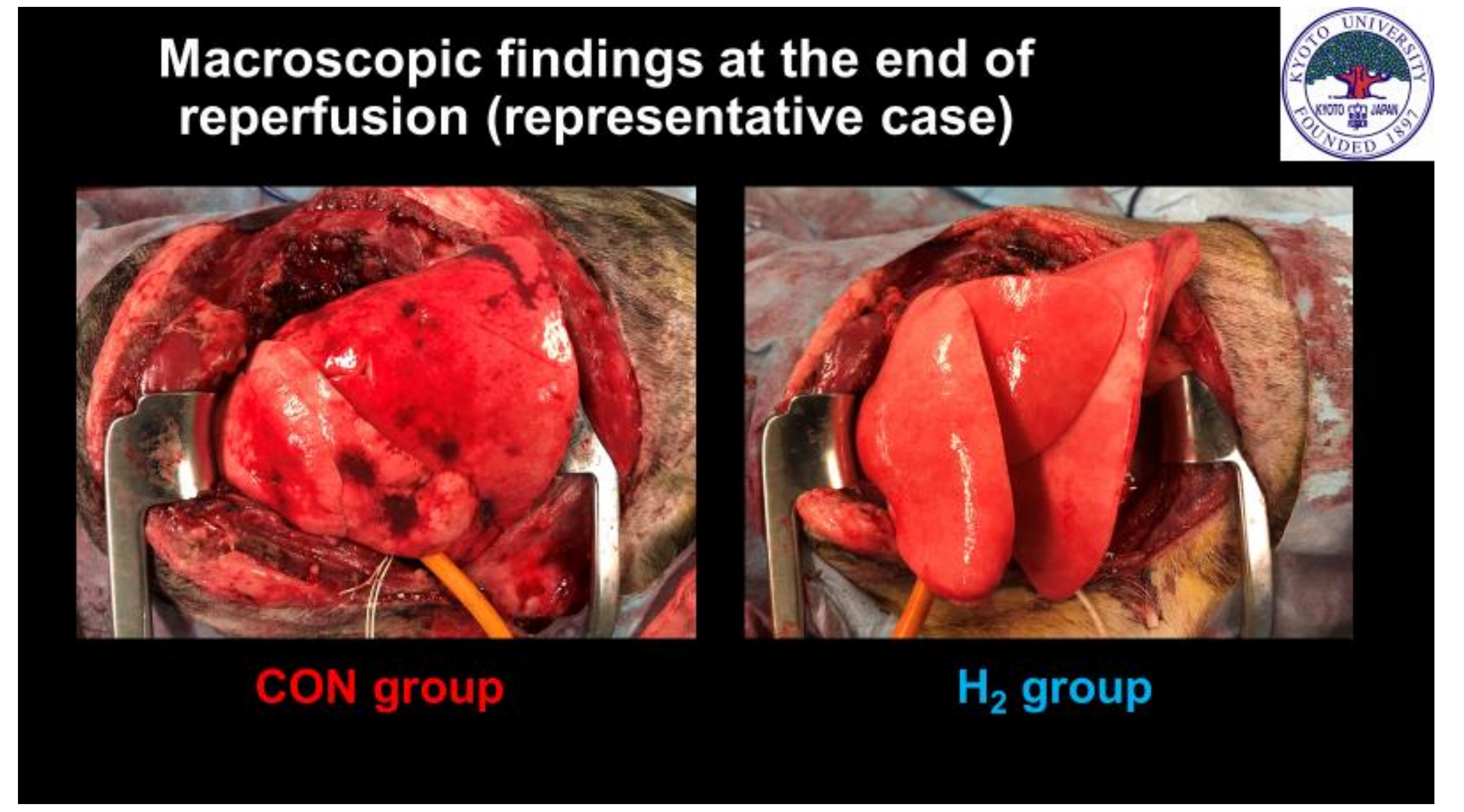


Background

The purpose of this study is ...

- to examine the protective effects of **H₂-rich preservation solution** on lung preservation in a canine left LTx model

H₂: molecular hydrogen, LTx: lung transplantation



Conclusion

Our results indicated that hydrogen-rich preservation solution attenuated I/R injury in a canine left LTx model.

Thank you for your kind attention!

I/R: ischemia-reperfusion, LTx: lung transplantation

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