

# EARLY ALLOGRAFT DYSFUNCTION DECREASES PATIENT SURVIVAL AFTER LIVER TRANSPLANTATION

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## INTRODUCTION

Early Allograft Dysfunction (EAD), the clinical manifestation of Ischemia Reperfusion Injury (IRI), is characterized by a poor graft function immediately after Liver Transplantation (LTx). Because of concerns regarding EAD after LTx, we assessed incidence, risk factors and consequences of EAD on outcomes post-LTx in our center.

## PATIENTS AND METHODS

### Retrospective review:

- January 2000 to December 2010
- 552 LTx were performed with complete follow-up (12 to 132 months). (end of follow-up 31/12/2010)
- Exclusion criteria:
  - < 18 yo
  - Combined transplantations
  - Split and living donation

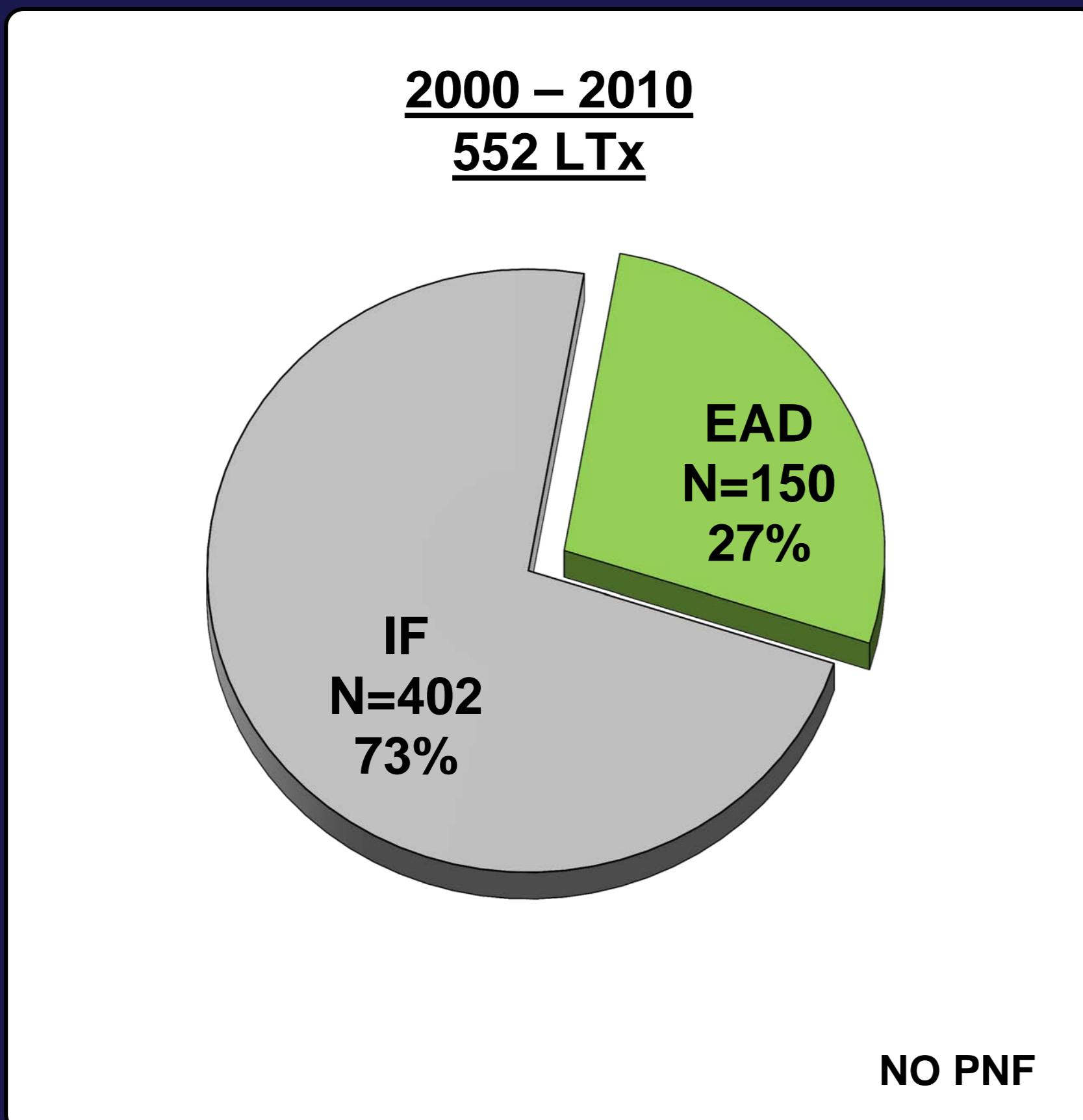
### Definition of EAD post-LTx (Olthoff) (1):

- Bilirubine > 10 mg/dL on day 7 and/or
- International normalized ratio (INR) > 1.6 on day 7 and/or
- AST or ALT > 2000 U/L within the first 7 days after LTx.

LTx recipients who don't full fill EAD criteria are defined as immediate functioning (IF) LTx. Primary non function (PNF) is defined as the need for retransplantation within one week post LTx due to a non-life-sustaining liver graft function.

## RESULTS

### INCIDENCE OF EAD



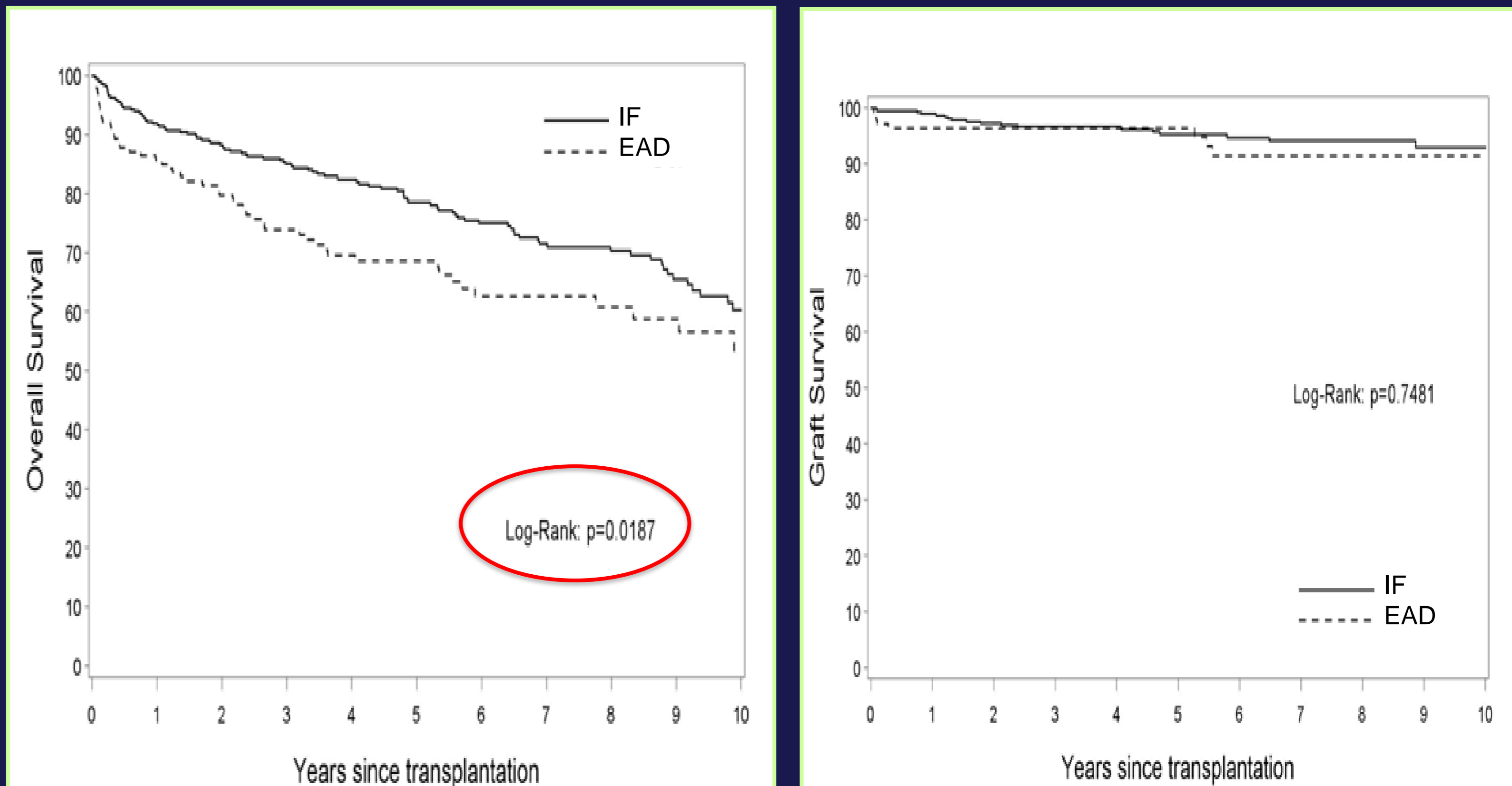
### VARIABLES IDENTIFIED AS INDEPENDENT PREDICTORS TO DEVELOP EAD MULTIVARIABLE LOGISTIC REGRESSION MODEL

	OR (95% CI)	p Value
<b>Procurement team:</b> locally procured vs. imported	0,51 (0,31 – 0,84)	<0,01
<b>Preservation solution type:</b> UW vs. HTK	0,53 (0,31 – 0,91)	0,02
<b>Cold ischemic time (hrs)</b>	1,17 (1,04 – 1,32)	0,01
<b>Lab MELD score</b>	1,06 (1,01 – 1,12)	0,02
<b>Length of surgery (hrs)</b>	1,23 (1,06 – 1,42)	0,01

### OUTCOMES

	IF N=402 (73%)	EAD N=150 (27%)	p Value
<b>ICU stay (days)</b>	3 (2 – 6)	6 (3 – 19)	<0,01
<b>Hospital stay (days)</b>	18 (14 – 27)	25 (18 – 44)	<0,01

### PATIENT AND GRAFT SURVIVAL



Note that death of the receptor is a competing risk for retransplantation. As such, this Kaplan-Meier curve represents the expected percentage of patients with a retransplantation in a hypothetical population of patients who are not at risk of dying.

## CONCLUSION & DISCUSSION

In our series, EAD incidence is 27%

Independent risk factors of EAD post-LTx in our series are:

- Imported livers
- Cold ischemic time
- Length of surgery
- HTK
- Lab MELD score

Surprisingly, Extended Criteria Donor (ECD) & Donation after Circulatory Death (DCD) were not associated with EAD post-LTx.

EAD is associated with a significant:

- Longer ICU and hospital stays
- Higher risk of patient death

**EAD is not an innocent temporary phase. This study highlights the importance of immediate function post LTx and its impact on LTx recipient survival.**

**Strategies to reduce EAD are therefore urgently needed. They should primarily focus on: improving procurement strategies, re-questioning HTK preservation, reducing cold ischemia time. In addition, optimizing preservation techniques (e.g. machine perfusion) and pharmacological modulation of IRI in recipient need to be studied.**