

University of Groningen

Transplantation of Suboptimal Donor Livers: Exploring the Boundaries

van Leeuwen, Otto

DOI:
[10.33612/diss.132816502](https://doi.org/10.33612/diss.132816502)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2020

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):
van Leeuwen, O. (2020). *Transplantation of Suboptimal Donor Livers: Exploring the Boundaries*. University of Groningen. <https://doi.org/10.33612/diss.132816502>

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Transplantation of Suboptimal Donor Livers: Exploring the Boundaries

Otto Boudewijn van Leeuwen

For the printing of this thesis, financial support of the following institutions and companies is gratefully acknowledged:

University of Groningen
Research Institute GUIDE
Nederlandse Transplantatie Vereniging
OrganAssist
Bridge to Life

© Copyright 2020 O.B. van Leeuwen, Groningen.

All rights reserved. No part of this thesis may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, without prior permission of the author.

Layout and cover: Evelien Jagtman – evelienjagtman.com

Printing: Ridderprint – www.ridderprint.nl

ISBN: 978-94-034-2539-9 (Book)

ISBN: 978-94-034-2538-2 (Epub)



rijksuniversiteit
 groningen

Transplantation of Suboptimal Donor Livers: Exploring the Boundaries

Proefschrift

ter verkrijging van de graad van doctor aan de
 Rijksuniversiteit Groningen
 op gezag van de
 rector magnificus prof. dr. C. Wijmenga
 en volgens besluit van het College voor Promoties.

De openbare verdediging zal plaatsvinden op
 woensdag 04 november 2020 om 14.30 uur

door

Otto Boudewijn van Leeuwen

geboren op 15 november 1995
 te Apeldoorn

Promotores

Prof. dr. R.J. Porte

Prof. dr. J.A. Lisman

Copromotor

Dr. V.E. de Meijer

Beoordelingscommissie

Prof. dr. H.G.D. Leuvenink

Prof. dr. D. Monbaliu

Prof. dr. J.K.G. Wietasch

Paranimfen

Drs. C.A.T. van Leeuwen

Dhr. W. Wierbos

Table of contents

Chapter 1	General introduction and outline of this thesis	11
Part I: Transplantation of suboptimal donor livers: determining the boundaries		
Chapter 2	Biliary complications following liver transplantation <i>In: Clavien PA, Trotter JF, editors. Medical and Surgical Care of Liver Transplantation Patients. Wiley-Blackwell; 2020</i>	19
Chapter 3:	Donor hepatectomy time influences ischemia-reperfusion injury of the biliary tree in donation after circulatory death liver transplantation <i>Surgery. 2020 (in press)</i>	45
Chapter 4:	Donor blood composition is a risk factor for biliary injury in donation after circulatory death liver transplantation <i>Submitted for publication</i>	65
Chapter 5:	Selected liver grafts from donation after circulatory death can be safely used for retransplantation <i>Transpl Int. 2020 (in press)</i>	85
Part II: Transplantation of suboptimal donor livers: expanding the boundaries		
Chapter 6:	Hypothermic oxygenated machine perfusion reduces bile duct reperfusion injury after transplantation of donation after circulatory death livers <i>Liver Transpl. 2018;24:655-664</i>	105
Chapter 7:	Extended hypothermic oxygenated machine perfusion enables ex situ preservation of porcine and human livers for up to 24 hours <i>JHEP Rep. 2020 (in press)</i>	125
Chapter 8:	Transplantation of high-risk donor livers after ex situ resuscitation and assessment using combined hypo- and normothermic machine perfusion: a prospective clinical trial. <i>Ann Surg. 2019;270:906-914</i>	149
Chapter 9:	Ex situ machine perfusion of human donor livers via the surgically reopened umbilical vein: a proof of concept. <i>Transplantation. 2019;103:2130-2135.</i>	171

Chapter 10:	Summary, Discussion and Future Perspectives	185
Appendix I:	Case report related to Chapter 6:	
	The first report of successful transplantation of a pediatric donor liver graft after hypothermic machine perfusion <i>Pediatr Transplant. 2019;23:e13362</i>	199
Appendix II:	Communication related to Chapter 8:	
	Viability criteria for functional assessment of donor livers during normothermic machine preservation <i>Liver Transpl. 2018;24:1333-1335</i>	211
	Nederlandse samenvatting	217
	List of publications	225
	Dankwoord	229
	Curriculum vitae	236

