

# The Journal of Heart and Lung Transplantation

A scientific forum for the management of the Failing Heart and Lung, Mechanical Circulatory Support, and Pulmonary Vascular Disease

The Official Publication of the International Society for Heart and Lung Transplantation

Volume 42 • Number 3 • March 2023

## CONTENTS

---

### CONSENSUS STATEMENT

#### e1 **Reproductive health after thoracic transplantation: An ISHLT expert consensus statement**

*Michelle M. Kittleson, MD, PhD (Chair), Ersilia M. DeFilippis, MD (Co-Chair),  
Catriona J. Bhagra, MRCP, MD, Jillian P. Casale, PharmD, Matthew Cauldwell, MD,  
Lisa A. Coscia, RN, BSN, CCTC, Rohan D'Souza, MD, Nicole Gaffney, MD,  
Vicky Gerovasili, MD, Patricia Ging, MSc, Kristin Horsley, PhD, Francesca Macera, MD,  
Joan M. Mastrobattista, MD, Miranda A. Paraskeva, MD, Lynn R. Punnoose, MD,  
Kismet D. Rasmusson, DNP, FNP, Quitterie Reynaud, MD, PhD, Heather J. Ross, MD,  
Mitesh V. Thakrar, MD, and Mary Norine Walsh, MD*

### STATE OF ART

#### 291 **Oral and gut microbiome alterations in heart failure: Epidemiology, pathogenesis and response to advanced heart failure therapies**

*Melana Yuzefpolskaya, MD, Bruno Bohn, MPH, Annamaria Ladanyi, MD,  
Alexander Khoruts, MD, Paolo C. Colombo, MD, and Ryan T. Demmer, MPH, PhD*

### BRIEF COMMUNICATION

#### 301 **Real-time transcription polymerase chain reaction cycle threshold values as criteria for utilization of incidental COVID-19 positive lung donors**

*Josephine Hwang, MD, Alexander Yuen, MD, Joshua Rhoades, RN, Darina Barnes, PharmD,  
Phillip Zakowski, MD, Dominick J. Megna, MD, Pedro Catarino, MD, Lorenzo Zaffiri, MD, PhD,  
and Reinaldo Rampolla MD*

### ORIGINAL PRE-CLINICAL SCIENCE

#### 305 **The human cytomegalovirus-specific and UL40-mediated imprint in the natural killer cell repertoire is associated with antibody-mediated rejection in lung transplant recipients**

*Hannes Vietzen, PhD, Peter Jaksch, MD, and Elisabeth Puchhammer-Stöckl, MD*

#### 315 **EDITORIAL: Natural killer cells, CMV infection, and antibody-mediated rejection**

*P. Riddell and S.C. Juvet*

#### 317 **The mitigating effect of exogenous carbon monoxide on chronic allograft rejection and fibrosis post-lung transplantation**

*Yoshiro Aoki, MD, Natalie M. Walker, BS, Keizo Misumi, MD, PhD, Takeshi Mimura, MD, PhD,  
Ragini Vittal, PhD, Aidan P. McLinden, BS, Linda Fitzgerald, PhD, Michael P. Combs, MD, MS,  
Dennis Lyu, MD, John J. Osterholzer, MD, David J. Pinsky, MD, and Vibha N. Lama, MD, MS*

---

*The Journal of Heart and Lung Transplantation* (ISSN: 1053-2498) copyright © 2023 International Society for Heart and Lung Transplantation, is published monthly by Elsevier, 230 Park Avenue, New York, NY 10169-0901, USA. Periodicals postage paid at New York, NY and additional mailing offices. (For post office use only: Volume 42 issue 3 of 12.)

**POSTMASTER:** Send address changes to Elsevier, Journal Returns, 1799 Highway 50 East, Linn, MO 65051.

## CONTENTS

---

### ORIGINAL TRANSLATIONAL SCIENCE

**327 'My Transplanted Self': Adolescent recipients' experience of post-traumatic growth following thoracic transplantation**

*Samantha J. Anthony, PhD, MSW, David B. Nicholas, PhD, RSW, Cheryl Regehr, PhD, MSW, and Lori J. West, OC, MD, DPhil*

**335 Technique for xenogeneic cross-circulation to support human donor lungs ex vivo**

*W. Kelly Wu, MD, Brandon A. Guenthart, MD, John D. O'Neill, PhD, Ahmed E. Hozain, MD, Yuliya Tipograf, MD, Rei Ukita, PhD, John W. Stokes, MD, Yatrik J. Patel, MD, Meghan Pinezich, PhD, Jennifer R. Talackine, MS, Nancy L. Cardwell, BS, Kenmond Fung, MS, CCP, Gordana Vunjak-Novakovic, PhD, and Matthew Bacchetta, MD, MBA*

### ORIGINAL CLINICAL SCIENCE

**345 Heart transplant offers are less likely to be accepted on weekends, holidays, and conferences**

*Jason W. Greenberg, MD, Stephen H. Fatuzzo, Aadhyasri Ramineni, Clifford Chin, MD, Samuel G. Wittekind, MD, MSc, Angela Lorts, MD, MBA, David G. Lehenbauer, MD, Louis B. Louis, IV, MD, FACS, Farhan Zafar, MD, MS, and David L.S. Morales, MD*

**354 EDITORIAL: Implications of and potential solutions for the weekend effect in heart transplantation**

*Shin Lin, MD, PhD and Richard K. Cheng, MD, MSc*

**356 Determining the impact of ex-vivo lung perfusion on hospital costs for lung transplantation: A retrospective cohort study**

*John Kenneth Peel, BHSc, MD, Shaf Keshavjee, MD, MSc, David Naimark, MD, MSc, Mingyao Liu, MD, MSc, Lorenzo Del Sorbo, MD, Marcelo Cypel, MD, MSc, Kali Barrett, MD, MSc, Eleanor M Pullenayegum, PhD, and Beate Sander, RN, MBA, MEcDev, PhD*

**368 Heart waitlist survival in adults with an intra-aortic balloon pump relative to other Status 2, Status 1, and inotrope Status 3 patients**

*Thomas C. Hanff, MD, MSCE, Adeline Browne, MD, Jacqueline Dickey, MD, MPH, Holly Gaines, MD, Michael O. Harhay, PhD, MPH, Matt Goodwin, MD, Craig H. Selzman, MD, James C. Fang, MD, Stavros G. Drakos, MD, PhD, and Josef Stehlik, MD, MPH*

**377 Smoking history and pulmonary arterial hypertension: Demographics, onset, and outcomes**

*Adaani E. Frost, MD, Carol Zhao, MS, Harrison W. Farber, MD, Raymond Benza, MD, Joseph Yen, PhD, Mona Selej, MD, and C. Gregory Elliott, MD*

## CONTENTS

---

**390 Cost-effectiveness of bivalirudin in pediatric ventricular assist devices**

*Danielle Burstein, MD, MSCE, Stephen Kimmel, MD, MSCE, Mary Putt, PhD, Joseph Rossano, MD, MS, Christina VanderPluym, MD, Ashish Ankola, MD, Angela Lorts, MD, MBA, Katsuhide Maeda, MD, PhD, Matthew O'Connor, MD, Jonathan Edelson, MD, Kimberly Lin, MD, Holger Buchholz, MD, and Jennifer Conway, MD MS*

**398 Angiotensin 2 and hsCRP are associated with pulmonary hemodynamics and long-term mortality respectively in CTEPH—Results from a prospective discovery and validation biomarker study**

*Charaka M. Hadinnapola, MA, MB, BChir, Mark Southwood, PhD, Jules Hernández – Sánchez, PhD, Katherine Bunclark, MB, ChB, Michael Newnham, MB, ChB, Emilia M. Swietlik, MD, John Cannon, MRCP, PhD, Stephen D. Preston, BM, FRCPath, Karen Sheares, MD, PhD, Dolores Taboada, MD, MPhil, Nicholas Screatton, BM, BCh, FRCR, FRCP, David P. Jenkins, MS, FRCS (CTh), Nicholas W. Morrell, MD, Mark Toshner, MB, ChB, MD, and Joanna Pepke-Zaba, PhD, FRCP*

### CASE ANECDOTES, COMMENTS AND OPINIONS

**406 HIV D+/R+ heart/kidney transplantation: First case report**

*Vagish Hemmige, MD, MS, Omar Saeed, MD, MS, Yoram A. Puius, MD, PhD, Yorg Azzi, MD, Adriana Colovai, PhD, Jamil Borgi, MD, Daniel J. Goldstein, MD, Marjan Rahmanian, MD, Anthony Carlese, DO, Ulrich P. Jorde, MD, and Snehal Patel, MD*