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Lung graft function in donation after cardiac death (DCD) donors- an experimental study - The usage of DCD lungs would dramatically increase donor availability

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The limiting factor for lung transplantation is the availability of donor organs, resulting in deaths on the waiting list. The usage of donation after cardiac death (DCD) lungs would dramatically increase donor availability. Our study investigated, in a simulated clinical situation in a DCD setting, whether alteplase administration after death affects donor lung function. Twelve Swedish domestic pigs underwent ventricular fibrillation and were then left untouched for 1 hour after declaration of death. They did not receive heparin. The animals were randomized into two groups DCD and DCD-A. The lungs were then harvested and flush-perfused with Perfadex® solution. In the DCD-A group alteplase was added to the Perfadex® solution. Thereafter the organs were stored at 8°C for 4 hours. Lung function was evaluated, using ex vivo lung perfusion (EVLP), with blood gases at different oxygen levels, pulmonary vascular resistance (PVR), lung weight, and macroscopic appearance. All lungs meet the criteria for lung transplantation. No difference in blood gases, PVR, lung weight, or macroscopic appearance could be detected. It seems as if DCD lungs exposed to 1 hour of warm ischemia before 4 hours of cold storage has satisfying oxygenation capacity, low PVR, normal weight and no signs of thrombosis. According to our study it seems as lungs exposed to 1 hour warm ischemia without heparin and with or without alteplase might be good candidates for transplantation.

Biography

Sandra Lindstedt has been a consultant in cardiothoracic surgery since 2010 and is currently working as a cardiothoracic surgeon at Lund University Hospital in Sweden. Lindstedt completed her PhD (2008) at the age of 34 years at the University of Lund. She has published more than 59 papers in reputed journals and serving as an editorial board member of European Journal of Cardiovascular Medicine. Lindstedt received an honorable research grant from the Swedish government 2011, 2012, 2013, 2014 and 2015 intended for transplantation. In 2015 Lindstedt received an honorable research grant from Swedish royal physiographic Society for DCD lungtransplantation.

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