

New device shows potential to enhance the viability of donor livers

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A new device has demonstrated it has the potential to enhance the viability of donor livers for transplantation. Results revealed today at The International Liver Congress 2015 show that the transportable machine perfusion (MP) Airdrive is able to effectively maintain the quality of livers derived from donation after circulatory death (DCD).

Many centers are reluctant to use DCD livers since they might jeopardize graft function post-transplantation. Contrary to 'classical' heart-beating donors (HBD), livers from DCDs undergo an unavoidable period of warm ischemia from circulatory arrest until the start of preservation, resulting in parenchymal lesions (i.e. hepatocytes) and direct ischemic injury to the cholangiocytes and/or damage to the arterioles of the peribiliary vascular plexus.

The main consequences of such ischemic insult are a higher risk of Primary Non-Function (PNF) - a complication that causes death in the absence of a rapid re-transplantation, and a high incidence of biliary complications - the well-known Achilles' heel of [liver transplantation](#). Overall rate of biliary complications is 29% (range: 11%-53%) for DCD, relative to 17% (9%-22%) for HBD recipients.

However, the present results point to the potential of the MP Airdrive to effectively preserve and improve the quality of these livers, making them viable for [transplant](#) use and therefore potentially expanding the donor pool considerably.

The study aimed to determine whether the MP Airdrive would improve the quality of livers derived from DCD using a large animal model. The study found that the 5-day survival in animals that received a liver via an MP was 100% and demonstrates, for the first time, the efficacy of the transportable MP Airdrive device to enhance donor [liver](#) viability for transplantation in a clinically relevant DCD model.

Provided by European Association for the Study of the Liver

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