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Different injury of common bile ducts in donation after circulatory vs brain death: histological and immunohistochemical evaluation

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Within the model of donation after circulatory death (DCD), a more severe degree of ischaemia-reperfusion injury occurs, that seems to play a role on the pathogenesis of biliary complications.
Aim of the study was to assess the bile duct injury in two different models of ischaemia, DCD and donation after brain death (DBD), in liver transplantation.
Histological samples of common bile duct retrieved after liver graft reperfusion, before biliary anastomosis, were evaluated.
Severity of donor bile duct injury was assessed on the basis of Biliary epithelial cell loss, Mural stroma necrosis, Inflammation, Peribiliary vascular plexus damage, Arteriolonecrosis, Thrombosis, Periluminal and deep peribiliary glands (PBG) damage.
Cholangiocyte apoptosis and proliferation in periluminal and deep PBG were evaluated by quantitative TUNEL analysis and PCNA immunohistochemical expression.
Sixty-two bile duct sample were available for evaluation (2014-2015). A significantly higher number of DCD patients presented necrosis >50% of the bile duct wall [DCD 14/28 (50%), DBD 9/34 (26.5%) p=0.056], peribiliary vascular plexus damage [DCD 8/28 (29%), DBD 3/34 (9%); p=0.053] and periluminal PBG damage [DCD 20/28 (71%), DBD 14/34 (41%); p=0.016], defining the occurrence of *severe histological injury*, that was significantly more frequent in DCD liver transplant patients [15/28 (53.6%)] compared to DBD [7/34 (20.6%)] (*p=0.007*). A significant increased apoptosis and decreased proliferation was evidenced in both periluminal (Tunel *p=0.*029; PCNA *p=0.029*) and deep PBGs (Tunel *p=0.*002; PCNA *p=0.006*) from bile duct sample with *severe histological injury.*
Bile duct samples from DCD grafts expressed more severe injury at the histological level, defining the new feature of *severe histological injury*. Bile ducts with *severe histological injury* showed increased apoptosis and reduced proliferation both on periluminal and deep PBG. This study raises the hypothesis of a correlation between the occurrence of microscopic damage and the development of ischaemic biliary complications.
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Robotic living donor right hepatectomy: short-term outcomes compared with conventional open donor hepatectomy

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Background: Laparoscopic donor right hepatectomy has been performed in a few centers by expert surgeons. Robotic system is one of the tools for laparoscopic liver resection, however, there has been few studies about surgical outcomes after robotic living donor right hepatectomy.

Method: From Apr. 2016 to Sep 2017, 22 liver donors received robotic right hepatectomy in our institute. Short-term outcomes were compared with 62 liver donors who received conventional open donor hepatectomy.

Results: The median age for robotic donor was 28 years (range, 17 - 50) and twelve donors were male. The median graft volume was 675.5 ml (range, 517-919). As for short-term outcomes, the median operative time was significantly longer in robotic group than open group (555.5 min vs. 409.5min, p< 0.001). But, the median blood loss was significantly lower in robotic group than open group (100ml vs. 250 ml, p< 0.001). Perioperative blood transfusion was required in one patient of open group. There was one conversion to open surgery in robotic group and postoperative complication rate were not different between two groups (robotic group=18.2% vs open group=12.9%). The median length of hospital stay is significantly shorter in robotic group than open group (9 days vs 10 days, P=0.03).

Conclusion: From our experience, robotic living donor right hepatectomy is feasible and safe at expert hands in selected liver donors. Even though operative time is longer in robotic group, robotic living donor hepatectomy showed similar complication rate and shorter hospital stay compared to conventional open donor hepatectomy.

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Can hypothermic oxygenated perfusion rescue futile DCD liver grafts?

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Background: A new prediction score for DCD liver transplants (UK-DCD-Risk-Score) has been recently reported using the largest available Maastricht Type-III DCD cohort from UK (n=1153). Donor and recipient factors, which accumulate to more than 10 score points, reliably predicted futile outcomes of < 40% 1y graft survival due to