



ANNUAL CONGRESS 2022
 ISTANBUL, TURKEY & ONLINE
 MAY 4-7, 2022



**PROMOTING EXCELLENCE IN
 LIVER TRANSPLANTATION**

Concurrent Oral Abstract Session
 Session Room 5/ Track 5

Friday, May 6, 11:45 - 13:00

Concurrent Oral Abstract Session: Donation After Circulatory Death and Machine Perfusion

Anesthesia/Critical Care, Hepatology, Surgery

Renato Romagnoli (Italy)

Christopher Watson (United Kingdom)

Welcome/Introduction

11:45 – 11:50
 5 min

O-052 Ease score outperforms classic olthoff early allograft dysfunction (EAD) score as a predictor of 90-days graft survival after donation after circulatory death (DCD) liver transplantation

11:50 – 12:00
 10 min

Femke Hendrika Christina de Goeij (Netherlands)

O-053 Outcome of livers from donation after circulatory death with prolonged warm ischemia time treated with normothermic regional perfusion and hypothermic oxygenated machine perfusion

12:00 – 12:10
 10 min

Damiano Patrono (Italy)

O-054 One hundred normothermic machine perfused DBD livers grafts with intention to transplant: donor risk scores do not predict transplantable grafts

12:10 – 12:20
 10 min

Angus Hann (United Kingdom)

O-055 Damage associated molecular pattern (DAMP) removal during liver normothermic machine perfusion facilitates organ rescue and reconditioning during preservation

12:20 – 12:30
 10 min

Fungai Dengu (United Kingdom)

O-056 Benchmarking liver transplantation outcomes of normothermic regional perfusion: our experience

12:30 – 12:40
 10 min

Rohit Gaurav (United Kingdom)

O-057 Vascular and functional assessment with indocyanine green fluorescence imaging and efficacy of thrombolytic therapy in livers from donor after circulatory death during normothermic perfusion

12:40 – 12:50
 10 min

Toru Goto (Canada)

O-058 Evaluation of the efficacy of end-ischemic hypothermic oxygenated machine perfusion preservation using an originally developed machine perfusion device for split-liver transplantation in a porcine model

12:50 – 13:00
 10 min

Daisuke Ishii (Japan)

O-058 Evaluation of the efficacy of end-ischemic hypothermic oxygenated machine perfusion preservation using an originally developed machine perfusion device for split-liver transplantation in a porcine model

Daisuke Ishii (Japan)

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Topic: 5: Donation after Circulatory Death and Machine Perfusion

Background: With the increasing number of patients waiting for liver transplantation, donor shortage has become a serious problem. Split-liver transplantation can help increase the available donor pool but can create two extended-criteria grafts and increase the risk of transplant failure. Hence, split-liver grafts may be considered marginal because of their small size and the degree of incurred injury due to liver splitting.

Methods: This study examined the efficacy of end-ischemic hypothermic oxygenated machine perfusion preservation (HOPE) using an originally developed machine perfusion system for split-liver transplantation. Porcine split-liver grafts were created via 75% liver resection after 10 min of warm ischemia. In Group 1, grafts were preserved by simple cold storage (CS) for 8 h (CS group; n=4). In Group 2, grafts were preserved by simple CS for 6 h and end-ischemic HOPE for 2 h (HOPE group; n=5). All grafts were evaluated using an isolated ex vivo reperfusion model with autologous blood for 2 h.

Results: Biochemical markers (aspartate aminotransferase and lactate dehydrogenase levels) were significantly better immediately after reperfusion in the HOPE group than in the CS group. Furthermore, the HOPE group had a better histological score. The levels of inflammatory cytokines (tumor necrosis factor- α , interferon- γ , interleukin-1 β , and interleukin-10) were significantly lower after reperfusion in the HOPE group.

Conclusions: We concluded that end-ischemic HOPE for split-liver transplantation can aid in recovering the graft function and reducing ischemia-reperfusion injury. HOPE, using our originally developed machine perfusion system, is safe and can improve graft function while attenuating liver injury due to preservation.

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