

## APPENDIX A. Definitions

### ALLOGRAFT FAILURE

The failure of the liver graft at 90 days or 365 days for any cause which lead to retransplant or death.<sup>1-2</sup>

### DBD

donor after brain death

### DCD

donor after cardiac death

### SPLIT<sup>3</sup>

In the common approach of the split liver procedure, liver is divided into a left lateral segment graft (LLS, segments 1, 2 and 3) to be transplanted to a child and a right extended liver lobe graft for an adult recipient (4, 5, 6, 7, 8). In conventional techniques, usually the middle hepatic vein is retained with the left graft and the vena cava with the right graft. The indispensable division of the caudate lobe veins lead to uncertain variability of the segment 1, and resection might be necessary. Segment 1 could be included or not into the left lateral graft.

In a technically more challenging variant of this procedure, the principle is to split the liver into 2 hemigrafts and use the left side (segments 2, 3, 4) for a small adult or a teenager and the right (segments 5, 6, 7, 8) for a medium-sized adult patient.

### PERFUSION MACHINES TYPES

- hypothermic machine perfusion (with or without active oxygenation)<sup>4</sup>
- dual hypothermic machine perfusion<sup>5</sup>
- normothermic machine perfusion<sup>6</sup>
- ischemia free organ transplant<sup>7</sup>

### ISCHEMIA-FREE ORGAN TRANSPLANT (IFOT)<sup>7</sup>

In this novel procedure, the graft is procured, preserved, and implanted under continuous normothermic machine perfusion. The recipient will not suffer post-reperfusion syndrome or vasoplegia after revascularization of the allograft.

### COLD ISCHEMIA TIME (minutes)

Cold ischemia time was defined as “the time between the cold perfusion of the liver is commenced at the cross-clamping and the time the organ is taken out from the cold storage for implantation.

### WARM ISCHEMIA TIME (minutes)

Warm ischemia time was defined as “the time a tissue, organ, or body part remains at body temperature after its blood supply has been reduced or cut off”.

### DONOR WARM ISCHEMIA TIME (minutes)

Donor WIT was defined as “time elapsed since the onset of hypotension (when systolic blood pressure falls <50 mm Hg) or hypoxemia (desaturation with SpO<sub>2</sub> < 80% measured by pulse oximetry)—whichever comes first—until the cold arterial flush is started in the donor.<sup>8</sup>

### DONOR ASYSTOLIC WARM ISCHEMIA TIME (minutes)

Donor Asystolic Warm Ischemia Time was defined as time from circulatory death to cold in-situ flush<sup>9</sup>

### RECIPIENT WARM ISCHEMIA TIME

Recipient WIT was defined as “time elapsed since placing the graft in the abdomen of the recipient until the warm portal flow is started in the recipient”

### SARCOPENIA

-Sarcopenia is the degenerative loss of muscle mass, strength, and function. It has been associated with worse short-term and long-term outcomes after liver transplantation and after surgery across a wide range of cancers, such as colorectal, gastric, esophageal, pancreatic, and liver.

-Sarcopenia was defined by reduced muscle mass and strength as recommended recently by the European Working Group on Sarcopenia in Older People (EWGSOP)<sup>10</sup>

### FRAILITY

Aging-related syndrome of physiological decline, characterized by marked vulnerability to adverse health outcomes.<sup>11</sup>

### RESPIRATORY FAILURE

Pts could present weaning failure (WF) if they not fulfill weaning criteria at 48 h after transplant or extubation failure (EF) patients if they were extubated within 48 hours but requires the reinstitution of mechanical ventilation (reintubation or non-invasive ventilation).<sup>12</sup>

#### HEART FAILURE/DYSFUNCTION

HF is a clinical syndrome with symptoms and or signs caused by a structural and/or functional cardiac abnormality and corroborated by elevated natriuretic peptide levels and or objective evidence of pulmonary or systemic congestion (European Society of Cardiology)

#### RENAL DYSFUNCTION

Renal dysfunction is defined as a glomerular filtration rate <60 mL/min and/or the presence of albuminuria >30 mg/d

#### RENAL FAILURE

Also known as end-stage kidney disease, is a medical condition in which the glomerular filtration rate is less than 15% of normal levels. (

#### POST REPERFUSION SYNDROME (PRP)

After unclamping the inflow (portal vein and or hepatic artery) we classified mild Post Reperfusion Syndrome as <30% decline of MAP or heart rate lasting <5 minutes that is responsive to an intravenous bolus dose of calcium chloride (1 g) or epinephrine ( 100 mg) without the need to start a continuous infusion of vasopressors. We also classified significant PRS as a >30% drop in MAP or heart rate, asystole, or hemodynamically significant arrhythmias or the need for continuous infusion of vasopressors during the intraoperative period.<sup>14</sup>

#### SEPSIS<sup>15</sup>

Sepsis should be defined as life-threatening organ dysfunction caused by a dysregulated host response to infection. For clinical operationalization, organ dysfunction can be represented by an increase in the Sequential [Sepsis-related] Organ Failure Assessment (SOFA) score of 2 points or more, which is associated with an in-hospital mortality greater than 10%.

#### SEPTIC SHOCK<sup>15</sup>

Septic shock should be defined as a subset of sepsis in which particularly profound circulatory, cellular, and metabolic abnormalities are associated with a greater risk of mortality than with sepsis alone. Patients with septic shock can be clinically identified by a vasopressor requirement to maintain a mean arterial pressure of 65mmHg or greater and serum lactate level greater than 2 mmol/L (>18 mg/dL) in the absence of hypovolemia.<sup>14</sup>

#### PATIENT SURVIVAL

Patient survival is defined as time from transplant to patient death, censoring for death at time of analysis.

#### GRAFT SURVIVAL

Graft survival is defined as time from transplant to graft failure or patient death, censoring for retransplant or death at time of analysis. The death of a patient for any reason will include by definition the failure of the graft and the end of both patient survival and graft survival.

#### eCRF

Electronic case report form.

#### POD

Post-operative day

#### NIV

Non invasive ventilation

#### CPAP

Continuous positive airway pressure therapy

#### CAV

Continuous arterial-venous hemodialysis

#### LENGTH OF STAY IN HOSPITAL<sup>16</sup>

Number of days in hospital considering either patients who are discharged and patients how die in the hospital.

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