Liver Transplant Central Registry

Background

The Hospital Authority (HA) has considered recommendations from local and international experts to merge two liver transplantation centres into one at Queen Mary Hospital. The objectives of the exercise are to concentrate expertise, improve clinical outcomes, provide fair patient service, and enhance cost-effectiveness of liver transplantation service in the HA, hence benefiting the whole community. As a first step, the two waiting lists were merged into a single one with the formation of the central registry in July 2003.

Objectives

The central registry prioritises allocation of cadaveric livers to patients in accordance with objective clinical parameters. The objectives of the central registry are as follows:

* ensure fairness and consistency in distribution of livers to patients with the most urgent needs
* facilitate efficient management of liver grafts
* enable doctors to make judgment based on consensus and to ensure the benefits of patients

Scoring system (the criteria for cadaveric organ allocation)

Each patient will be assigned the status probability of pre-transplant death derived from a mortality risk score corresponding to the degree of medical urgency. The adopted scoring system is an international recognized mechanism, namely Model for End Stage Liver Disease (MELD) scores for adult patients and paediatric patients aged between 12 and 17, and Paediatric End-Stage Liver Disease (PELD) score for paediatric patients under the age of 12. Both scores are numerical scales representing a patient's risk of dying within three months based on objective and verifiable medical data. Priority will be given to patient with the highest MELD/PELD score.

For adult patients with stage 2 hepatocellular carcinoma (HCC), prioritization with a newly assigned MELD score is adapted. A waiting period of 6 months on the list is necessary before the newly listed HCC patients can be assigned a new MELD score of 18, provided that there is no tumor progression. Two incremental points will be accredited in the subsequent 3-month waiting period. For patients with stage 2 HCC and decompensated liver function (MELD score > 18), the baseline score will be their calculated MELD, and 2 incremental points will be accredited in the subsequent 3-month period.

Objective and verifiable medical data under MELD / PELD include:

MELD	PELD
* Serum Total Bilirubin * Serum Creatinine * International Normalized Ratio (INR) * For adult patients and paediatric patients aged between 12 and 17	* Similar to MELD but uses slightly different criteria to recognize the specific growth and developmental needs of children * For paediatric patients under the age of 12

MELD Score = [0.957 x Log_e(creatinine mg/dL) + 0.378 x Log_e(bilirubin mg/dL) +1.120 x Log_e(INR) + 0.643] x10

PELD score = {0.480 x Log_e(total bilirubin mg/dL) + 1.857 x Log_e(INR) - 0.687 x Log_e(albumin g/dL) + 0.436 (if age is <1 year at time of listing until age 24 months) + 0.667 (if patient has growth failure)} x 10

(As at 1 Dec 2017; Reviewed on 3 Feb 2023)

A built-in audit mechanism is in place to ensure that the donated liver goes to (or is transplanted on) the most urgent patient. Cadaveric liver is assigned to patient of same blood group.

When there is a potential cadaveric liver, the clinical liver transplant co-ordinator will check through the registry to identify the patient with the highest MELD/PELD score of the same blood group. The patient will be informed of the possibility of a transplantation.

Split Liver Transplantation
Depending on the size match of the donor and the recipient, there is a possibility that the donated liver would be split to benefit two recipients. Every liver graft would be fully utilized and more lives can be saved.

There will be a chance that the transplantation operation cannot be carried out due to various reasons :

Conditions on donor's side	Conditions on recipient's side
* If any clinical investigations suggest that the donor is unsuitable * If retrieval of the liver graft fails * If the appearance or pathological examination of the liver is unhealthy, abnormal or in doubt	There is a 10% chance that the operation cannot be accomplished due to infected ascites, severe adhesion or cancer spread, etc., during recipient operation

The transplantation operation for the recipient has a success rate of around 90% and complication rate of 30%.

If transplantation cannot be carried out, the transplant team would immediately explain to the patient or his /her relatives the reason for abortion of the operation. **There is no guarantee that the next graft will be allocated to the patient because the allocation is based on priority status at that time.**

The priority status of patient will change from time to time, because new patient will be added, existing patient may be deleted and all patients' condition are not static all the time. The Liver Transplant Team will be pleased to discuss with patients on their clinical conditions and their assigned scores. If patients wish to make further enquiries, they are welcome to raise with the attending doctor during the consultation session or approach Patient Relation Officer (Telephone no: 22553838).