

## Minutes from the NLTG meeting in Helsinki, 8th – 9th April 2024

Venue: Meilahti Bridge Hospital, Seminar Hall no3., 10.00 – 15.00

Arno Nordin opened and welcomed 23 participants to the meeting.

### 1. Minutes from the NLTG/NPLTG

minutes from the last meeting in Stockholm October 10th 2023, were accepted.

### 2. NLTR annual report

Katrine Engesæter presented the annual report of NLTR 2023. Last year was a record year with 448 transplanted patients. The most common indication for listing was HCC, followed by alcoholic cirrhosis and PSC. Median waiting time for all blood types combined was 60 days, with a marked increase in waiting time for blood type B. The two last 5-year periods (2014-18 and 2019-23) have similar survival but we see an increase in survival after retransplantation.

### 3. Centerwise update:

Stockholm: In 2023: 97 liver transplantations in 2023, 9 of them pediatric and 22% due to malignancy. 18 DCD livers were used. 45% of DCD's resulted in liver transplantation. Four deaths on the waiting list. 20 livers done in 2024, of which 2 pediatric and 4 DCD; waiting list now very short, only 15 patients.

Oslo: 92 livers transplanted in 2023, 10-15% from DCD donors. It has become more difficult to get optimal split grafts for the smallest children. Therefore, Oslo has started to do more living donation for small children's transplantations, when recipient weights 5-6 kg. In 2024 so far 13 liver tx done, of which 1 DCD-NRP and one living donation.

Copenhagen: 63 Liver transplantations in 2023, 2 re-Tx, 6 pediatric (2 splits). In 2024: 14 LTx, 1 ped, DCDD with NRP.

Gothenburg: 99 liver tx in 94 patients in 2023, of which 12 reTx, 8 pediatrics, 13 DCDDs, in waiting list only O's and B's. In 2024: 18 LTx, 2 multiviscerals last year and one in 2024, starting ABOi also in elective transplantations.

Tartto: 30 donors in 2023, of which 20 multidonors. 17 liver transplantations; imported 4 and exported 8. Two surgeons doing Liver tx now. waiting list increased from 2 to 7.

Riga: 26 donors, half of them for liver tx, 6 possible, two done. 8 pts in waiting list. Cooperation with Karolinska, STO.

Helsinki: 78 liver transplantations in 2023, 5 pediatric, 9 reTx, waiting list approximately 20 patients, 6<sup>th</sup> coordinator, death on waiting list 3 in 2023. In 2024 23 LTx, 2 pediatrics, DCD coming end of the year.

#### 4. Update from the Scandiatransplant Office – Anne Ørskov Boserup

##### Payback and balance

As of 1<sup>st</sup> of April there were 10 livers that have not been paid back with an average waiting time of 410 days. 7 livers have been waiting for payback for more than 6 months, 5 of these have been waiting for more than a year. It was highlighted that some of the livers have been offered more than 20 times. It was also emphasized that despite the long waiting times, the rules for payback are being followed by all centers. There was a short discussion on what to do about these long waiting times. Nothing was decided.

##### Liver exchange and urgent call

Graphs illustrating the import and export of livers were presented. All graphs were similar to the previous years.

*The following numbers for urgent were skipped at the meeting as they had already been presented under point 2.* There were altogether 31 urgent calls in 2023. 22 recipients were transplanted, 2 died and 7 changed priority.

##### Classification of permanent withdrawals from waiting list

The classification proposal (below) was accepted, and a proposal of definitions for subcategories was done by Andreas Schult. These were agreed upon by the working group responsible for creating the proposal. Changes have been implemented in YASWA as of May 13<sup>th</sup> 2024.

Termination cause	Withdrawal Cause	Subcategory
1. DEA: Death		
2. DT: Transplantation deceased donor		
3. LDT: Transplantation Living donor		
4. PW: Permanently withdrawn	1. Tx outside Scandiatransplant	
4. PW: Permanently withdrawn	2. Improved condition	
4. PW: Permanently withdrawn	3. Not Transplantable	1. Progress medical condition
4. PW: Permanently withdrawn	3. Not Transplantable	2. Psychosocial/Addiction
4. PW: Permanently withdrawn	3. Not Transplantable	3. Patient choice
4. PW: Permanently withdrawn	3. Not Transplantable	4. Progress malignancy (indication)
4. PW: Permanently withdrawn	3. Not Transplantable	5. Other

Subcategory	Definition
1. Progress medical condition	Deterioration of the patient's liver disease (not malignancy being indication for liver transplantation), general condition or co-morbidity (including extrahepatic malignancy) precluding liver transplantation.
2. Progress malignancy (indication)	Progress of the patient's malignancy being indication for liver transplantation precluding liver transplantation (e.g., HCC progress beyond transplant criteria).
3. Psychosocial/Addiction	Psychosocial or addiction problems precluding liver transplantation (e.g., relapse in alcohol or drug use, severe psychiatric co-morbidity, etc).
4. Patient choice	The patient is expressing an own will not being transplanted.
5. Other	Other reasons not listed before leading to permanent withdrawal from the waiting list.

#### Status on ELTR data export

In January 2024 the ScandiTransplant Office was notified of the introduction of a new system for data sharing with the ELTR. The office has started implementing the changes, but the workload in relation to this task is substantial and will take some time.

All centers were reminded that it is their responsibility to have a data sharing agreement with ELTR.

#### Status on sharing DICOM files through YASWA

A brief update on the possibility to share DICOM files through YASWA was given. DICOM will be implemented with the next YASWA update in May.

#### 5. Revision of NLTR forms – update - Katrine Engesæter

Revision of forms will be aligned with the revision of ELTR forms, which has been a work in progress for some time. An outline is now ready in ELTR but updated forms will not be integrated before an ongoing transition to a new platform is completed. We keep following the work in ELTR and will come back to the revision in NLTR.

#### 6. Decision of donor variables –

These are mandatory inputs into yaswa which have not been formally defined before and the Board noticed this in the last meeting and proposed every organ group to correct this missing formality. Carl has prepared a list of parameters that would be put immediately.

Regarding parameters that were not classified as immediate, it was decided to confer with the coordinators at their meeting to hear how many days they need to enter the data in YASWA.

#### 7. Fontan associated liver disease – Fredrik Åberg and Johanna Savikko

Fredrik and Johanna presented the clinical challenges with selecting patients with FALD for heart transplantation alone versus combined heart-liver transplantation. While HCC and severe liver dysfunction are considered established indications for combined transplantation, it is less clear how to proceed in non-severe/non-HCC FALD with cirrhosis/portal hypertension. Small series point to good outcome after heart Tx alone even in advanced FALD-cirrhosis. Therefore, one option, to avoid futile use of liver grafts, could be to plan for isolated heart Tx but simultaneously prepare for LT, so that if severe liver failure develops after heart Tx, the patient is prioritized for LT.

We started a discussion of a Nordic collaboration on how to prioritize LT in such patients within ScandiTransplant in order to secure timely availability of liver grafts.

There is an increasing number of FALD patients with cirrhosis reaching adulthood. However, less than 5 combined heart-liver Tx has been performed so far for this indication within ScandiTransplant.

8.

- a) Allan Rasmussen presented some preliminary results from the DSA-study (Preformed donor specific antibodies on liver transplantation recipients: a prospective observational multicenter study). Preformed class II DSA DQ had the highest hazard ratio of 2.7! causing 26% rate of graft loss vs 11% in those without.
- b) Pål Dag presented the study of Tesla 1 and Tesla 2: liver transplantation for intrahepatic cholangiocancer and tx for perihilar CCA, respectively. Tesla 1: 4 patients transplanted and one waiting, Tesla 2: 2 pts transplanted one waiting. Another project is the SURE-LT in which patients are liver transplanted after removing liver, duodenum, pancreas, spleen and number of lymph nodes with retrohepatic vena cava and coeliac trunc en bloc. Liver graft arterial flow is reconstructed using separately prepared splenic artery; two patients transplanted, 4 and 3 yrs survival tumor free. Both had recurrent CCA
- c) Delal Agdag presented the first publication of the DETECT study investigating Torque Teno Virus (TTV) association with long-term outcomes in liver transplant recipients, including de novo cancer. From the DSA biobank, 649 LTX has been included, and TTV has been quantified. Data on de novo cancer is completed in majority of the centers and expected to be completed during May 2024. Database management and data cleaning has been initiated and the final manuscript is expected in June 2024
- e) Carl Jorns presented the status of the study "Outcome of extended right lobe liver transplantations in the Nordic countries" - This project is part of Vera Nilséns PhD project. Main supervisor is Carl Jorns. Co-supervisor: Christina Villard, Marcus Buggert. The aim of the project is to evaluate extended right liver grafts compared with whole graft transplantation in a Nordic population between 2007 to 2022. Control groups consists of 4046 whole liver transplantations and 583 whole liver transplantations with donors fulfilling split criteria. The study group consists of 141 extended right grafts. Primary outcome is patient and graft survival. Secondary outcome is surgical complications and factors associated with survival and surgical complications. The project is proceeding well. The project was awarded the ScandiTransplant research grant 2024 with 100 630 DKK; principal investigator: Vera Nilsén. Data collection for Gothenburg and Stockholm is complete and 74% (140/188) of Oslo data has been collected. The remaining data collection should be

performed before summer 2024. Data analysis and manuscript writing is planned for fall 2024.

- f) Katrine Engesaeter presented the final data on the study "Outcome of liver retransplantation in patients with PSC" – the conclusion is that retransplant for PSC compared to other etiologies has better outcomes and must be considered not futile. Retransplant for recurrent PSC compared to other etiologies has equal outcomes.
- g) Lasse Gronningsaeter presented the starting of the studyt: "Oxidized albumin in liver transplantation. The study group includes Karolinska and Oslo. The timeline inclusion start at Jan 2024, ending at Q4 2024 and data handling Q1 2025 and poublication 2025.
- h) Gabriel Oniscu presented the study: The impact of out of hours liver transplantation on patient outcomes and health economics of liver transplantation; a retrospective multicenter study. This will be a Scandinavian study and all centers agreed to participate. In the first work package, a retrospective analysis will be undertaken of all liver transplants and outcomes will be compared between daytime and nightttime activity. In the second part, the impact on the well-being of the team will be assessed using a combination of self-reported outcomes, fatigue testing and physiological monitoring during surgery using a wearable device. Outcomes will be compared between nightttime and daytime surgery.

#### 9. Any other businesses.

- It was suggested and decided that all units (HEL, STO, GOT, OSL, CPH, REY, TARTU, VILNA) collect a mailing list of those persons to be contacted in organizing meetings or any other happenings in the name of NLTG and/or NPLTG. This was also accepted by the Scandiatransplant office. So, every unit are asked to send and to keep updated a mailing list of all those personnel involved in these working groups to Scandiatransplant office.

10. Next meeting was according to schedule planned to be in Tartu, but since this meeting would be 2 days long for covering both pediatric and adult NLTG it was proposed to be changed to Copenhagen and Tartu would be next spring. This was unanimously accepted, and the next meeting, combined NLTG/NPLTG, will be in Copenhagen 21-22.10.2024.

#### 11. End of the meeting

Participants:

Scandiatransplant: Anne Boserup

Stockholm: Gabriel Oniscu, Carl Jorns

Oslo: Pål-Dag Line, Espen Melum, Lise Katrine Engesæter, Lasse Grønningaeter, Monica Olofsson Storö

Copenhagen: Allan Rasmussen, Delal Agdag, Ulla Brink Plagborg, Jesper Kjaergaard, Jens Hillingsö

Gothenburg: Andreas Schult, Markus Gäbel, William Bennet

Riga: Janis Vilmanis

Tartu: Andres Tein, Andrei Uksov

Helsinki: Fredrik Åberg, Arno Nordin, Ville Sallinen, Johanna Savikko