



## Minutes from Nordic Liver Transplant Group Meeting (NLTG)

Gothenburg, October 10, 2022 (on site meeting)

### 1. Minutes

The minutes from NLTG March 2022 (virtual meeting Copenhagen) were presented and accepted. The minutes are available on the Scandiatransplant webpage,

<http://www.scandiatransplant.org/members/nltr/minutes>

### 2. Center-wise update on transplant activity to date, 2022-10-10:

**Gothenburg:** In total 69 liver transplantations. Of these 63 adult LTX (2 DCD NRP LTx) and 6 pediatric Ltx (3 split and 3 full size); and 1 multivisceral transplant.

**Stockholm:** In total 60 liver transplantations. Of these 54 adult LTX (6 DCD NRP LTx) and 6 pediatric Ltx; (4 split and 2 LD).

**Tartu:** In total 6 adult liver transplantations. An increasing waiting list with 9 recipients

**Helsinki:** In total 45 liver transplantations. Of these 39 adult LTX and 6 pediatric. Helsinki has since the summer introduced steroid free maintenance immunosuppression based on the protocol from Gothenburg.

**Oslo:** In total 71 liver transplantations. Of these 64 adult LTX and 7 pediatric Ltx (1 using LD). They have resumed the DCD NRP program and since then pursued 4 DCD NRP donors of which 3 have resulted in LTX.

**Copenhagen:** In total 35 liver transplantations. Of these 31 adult LTX and 4 pediatric Ltx; (1 split, 1 reduced and 2 full size).

### 3. Update from Scandiatransplant

Ilse Duus Weinreich presented:

**A. Payback and balance:** 5 paybacks have been waiting for payback for > 6 months. Offers are made according to the rules but and the decline is almost exclusively due to lack of recipient on the WL. It was suggested (A. Nordin) that we could consider after 5 declined offers to payback with a donor liver of another blood group. We agreed that the centers involved should try to come to agreement by settling the payback by using another blood group.

**To Do:** It was decided to add the possibility in YASWA to register what additional blood groups that are accepted as payback

#### **B. Exchange and urgent call**

The import and export balance were presented along with the number of urgent calls, around 70% of the patients listed for urgent call are transplanted. The presentation lead to a discussion about definition, usage and follow up on patients permanent withdrawn from the waiting list. More specifically, we should try and distinguish and categorize between usage of the causes 'Condition worsened', 'Not transplantable' and 'Other'.

**To Do:** The office will collect information on reasons for permanent withdrawal of liver recipients with the reason Other (OT) and Not Transplantable (NT) from all relevant centers from the last two years. Based on this we will have a dialogue on e-mail trying to define categories, this will be followed up / presented at the next meeting.

#### **C. Pediatric exchange statistics presented at the NPLTG meeting (October 11, 2022).**

Since the last meeting split organ offers are now offered to all potential centers simultaneously. All centers receiving an offer need to reply/respond and it was decided that the reason for declining the offer is obligatory to register in YASWA.

**To Do:** It was decided to continue the evaluation of split-liver offers and present the data at the next meeting.

### 4. The Sahlgrenska Intestinal Failure Center

The Sahlgrenska intestinal failure and transplantation Unit (SIFT) has by the health authorities been declared as "High specialist Care" in Sweden and is nominated to become one of two national units for highly specialized care of patients with intestinal failure. Also, The Intestinal Rehabilitation and Transplantation Association (IRTA), a subsection of the Transplantation Society, has appointed SIFT as a "local chapter" within the association. This will be recognized at the 25<sup>th</sup> anniversary of the Visceral transplant program when a symposium with state-of-the-art lectures focusing on visceral transplantation and intestinal failure will be held. The event will take place on May 22-23, 2023 at Sahlgrenska University Hospital.

## **5. National project on DCD liver transplantation using NRP**

Carl Jorns presented the results of the Swedish national project of DCD liver transplantation using NRP. In summary 16 DCD liver transplantations were performed with 100% graft survival and 0% ischemic cholangiopathy. Median follow up of 10 month.

## **6. Blood group exchange in Liver Transplantation (“A<sup>4</sup>BB<sup>4</sup>A”)?**

William presented data on disparities in the blood groups waiting list that are apparent at the different liver transplant centers. Some centers have a much higher proportion B recipients on their waiting list compared to other centers while others have a much higher proportion A recipients on their waiting list. It was therefore proposed to establish a voluntary blood group exchange program (A for B or B for A; “ABBA”) allowing centers to announce that they are willing to accept a liver of certain blood group and if the center agrees be paid back in another defined blood group. In this way two centers with different needs can address this by exchanging livers of one blood group for another. This should also diminish net export of livers on the ROTA list when a suitable liver at the donor center is not available. All centers thought this was a path to explore as long as both centers agree on the exchange.

**To Do:** We will try to implement “ABBA” into YASWA so that centers interested in blood group exchange can make this visible to all the other centers. We will evaluate the exchange program at future NLTG meetings.

## **7. Outcome following re transplantation for PSC**

Antonio Molinar (Oslo) presented a study to in the NLTR analyze the outcome following re-transplantation for PSC. All centers agreed that it was great initiative and are willing to participate. **To Do:** More data to be presented at the next NLTG meetings.

## **8. LTX for ACLD Experience with a national exchange program**

Andreas Schult (Gothenburg) presented an outcome analysis of liver transplantation for urgent CLIF-SOfA category 3 ACLF patients performed in Sweden between 2017-2021 according to a national priority system for these patients. A total of 48 patients with ACLF grade 3 were listed for transplantation and 38 were transplanted, resulting in a 1-year patient survival of 68 % in the intention-to-treat analysis. For the transplanted patients the 1-year patient survival was 88 %. The conclusion of the analysis was that prioritization of these patients for liver transplantation yields favorable patient survival without signs of futility and that organ exchange organizations should consider a separate prioritization system for this patient category.

### **9. Deceased Donor ABO-incompatible Liver Transplantation**

William Bennet (Gothenburg) presented an outcome analysis of the Gothenburg experience transplanting high urgent recipients (ALF and ACLF) with ABO incompatible liver grafts using a Rituximab and immune absorption (IA) protocol. During 2009-2021 28 patients (26 adults and 2 pediatric) received an ABOi LTX. The median MELD-score was 39 (range 18-40). The 1- & 5-yr patient survival was 88% and 83% respectively and the 1-& 5-yr graft survival 84% and 79% respectively. The outcome was equal to/superior to a matched control group of 72 patients receiving ABO compatible transplants for the same indications (published. Dahlgren et al., Scand J of Gastro, 2022). A national pilot study is now planned to offer recipients, with low donor blood group antibody titers, an ABOi liver transplantations for non-high urgency indications while on the liver transplant waiting list.

### **10. Nordic criteria for ECD for hypothermic machine perfusion**

Each center reported on their potential plan to clinically introduce hypothermic oxygenated machine perfusions for extended criteria donor (ECD) livers. Both Gothenburg and Stockholm have since more than a year been doing this. Their common criteria for ECD is today only donor age >70 years. Together they have performed and transplanted close to 60 ECD liver following (HOPE or dHOPE) and have started to analyze the outcome with emphasis on cholangiopathy. Copenhagen have just started and thus far performed one perfusion and are educating staff and co-workers. Copenhagen is interested in establishing common Nordic criteria for ECD to be used for reconditioning perfusion protocols in the future. To be followed up at future NLTG meetings.

## **Updates on ongoing studies**

### **11. De novo malignancies in liver transplant recipients (DETECT)**

Ongoing. Centers seeking ethical approval.

To Do: More info from PI, Hans Christian Pommegard at the next NLTG meeting.

### **12. DSA Study**

Patient Inclusion completed and 1-year follow-up almost reached for every patient. Data analysis is ongoing.

To Do: On behalf of Allan Rasmussen, Nicolai Schultz announced that an investigator meeting in Copenhagen is planned for Q1-Q2 of 2023 to report on the initial data analysis.

### **13. Results of hepatico-duodenostomy in Denmark**

Data collection still ongoing. Outcome to be presented as soon as data is available. Oslo also urged to complete their outcome analysis. Together, Copenhagen and Oslo have far over 100 patients reconstructed with hepatico-duodenostomy. To our knowledge this is the world's largest series and very valuable knowledge to be reported.

### **14. De-novo immune-regulatory disease following LTx**

Niklas Johansson (Gothenburg) presented his Ph.D. work on the-novo immune-regulatory disease that arise in adults following liver transplantation. The analysis entails a structured and standardized patient interview along with blood analysis. The outcome is then compared with that seen in the general population in Sweden according to the same interview in a cohort of over 1000 healthy individuals. Preliminary results show that the occurrence of the the-novo immune-regulatory disease, such as airway- and food allergies are more frequent following liver transplantation compared to the general population.

### **15. Evaluation of CT examination in deceased donors - Ulrika Samuelsson**

William Bennet (Gothenburg) presented on behalf of Ulrika Samuelssons work the questioner outcome analysis of 450 CT scans performed in the Nordic countries on potential liver donors. The purpose was to determine the importance and impact that the CT scan had on liver allocation. Briefly, the analysis showed that CT scans are performed in close to 90% of all potential liver donors. In 4 %the donor procurement procedures could be aborted solely on CT findings (mainly malignancies) preventing unnecessary travel to the donor hospital. In another 10 %, the liver could be declined due to CT findings preventing premature allocation of the liver. In 15 % of all the donor cases the CT resulted allocation of the liver to a recipient that would otherwise not have been chosen without the CT. The use of CT scans has now been established as a routine examination in all multi-organ donors and we now hope to be able to establish a compatible routine within Scandiatransplant to facilitate easy accessibility for all the centers to view and download the CT images regardless in which country the donor CT scans have been performed. There are transplant programs within Europe that adopted systems available to achieve just this. The liver transplant group are in strong favor to establish this as the CT scans have become such a valuable and important tool in liver allocation and the fact that a high proportion of livers are actually allocated to a recipient in another country/center.

**To Do:** William will draft a letter to the Scandiatransplant Board seeking acceptance for Scandiatransplant to explore these possibilities.

## **16. Other business**

It was decided that we want the NLTG/NPLTG e-mail list to be handle through Scandiatransplant office and that each center is responsible to keep the list updated with participants from their center. The advantage is that it will be easier to make sure that all relevant colleagues are informed of the meetings, the agendas and the minutes as it is difficult for each host to keep track of this.

It was also decided to continue to plan for on-site meetings in the future.

**To Do:** All centers will supply Ilse with an updated and relevant list of e-mail addresses of the NLTG members to receive information regarding the activities of NLTG.

## **17. Next NLTG date**

The next NLTG meeting is planned for April 18<sup>th</sup>, 2023 in Oslo

William Bennet  
Meeting moderator

Gothenburg 2022-10-12

### List of meeting participants at the NLTG meeting 2022-10-10

Ilse	Duus Weinreich	Scandiatransplant
Anne	Ørskov Boserup	Scandiatransplant
Andres	Tein	Tartu
Fredrik	Åberg	Helsinki
Arno	Nordin	Helsinki
Ines	Beilmann-Lethonen	Helsinki
Pål Dag	Line	Oslo
Jon Magnus	Solheim	Oslo
Espen	Melum	Oslo
Monika	Olofsson	Oslo
Christian	Ross	Copenhagen
Ulla	Plagborg	Copenhagen
Nicolai	Schultz	Copenhagen
Nils	Ekvall	Gothenburg
William	Bennet	Gothenburg
Bengt	Gustafsson	Gothenburg
Andreas	Schult	Gothenburg
Ulrika	Samuelsson	Gothenburg
Christina	Wibeck	Gothenburg
Lisa	Hård af Segerstad	Gothenburg
Bengt	Gustafsson	Gothenburg
Alexandra	Sandrén	Gothenburg
Per	Lindner	Gothenburg
Carl	Jorns	Stockholm
Antonio	Romano	Stockholm