

## SHORT TERM SCIENTIFIC MISSION (STSM) – SCIENTIFIC REPORT

The STSM applicant submits this report for approval to the STSM coordinator

**Action number:** CA15210 (European Network for Collaboration on Kidney Exchange Programmes)

**STSM title:** Hungarian-Czech collaboration on optimisation and practice of KEPs

**STSM start and end date:** 03/06/2018 to 08/06/2018

**Grantee name:** Gergely Zádori

### PURPOSE OF THE STSM/

As described in the research plan, from the Hungarian side the visit involved myself. Professor Jiri Froněk and his group were the hosts. The main goal of the visit was knowledge exchange, including HLA-matching and the daily routine with hyperimmunised patients in the KEP system that will be useful in the establishment of the Hungarian KEP and possibly also in a regional co-operation based on the Austrian-Czech programme. Besides, I also had the opportunity of studying their surgical technique.

### DESCRIPTION OF WORK CARRIED OUT DURING THE STSMs

We had very useful discussions on the implementation of kidney exchange programmes, including the HLA-lab testing protocols, and optimisation techniques. We describe the main topics for discussions below with regard to the national KEP and international programmes. These two topics are highly relevant for the goals of WG2 and WG3, respectively.

**National application:** The hosts explained the details of the Czech KEP, the medical, organisational, and optimisation aspects, including the already started international collaboration with Austria. We discussed the details of optimisation during the allocation process. The Czech KEP programme only counts HLA-matching and virtual crossmatch in order to maximise the expected number of transplants. Any other parameters are only taken into consideration after the optimisation process and desensitisation protocols are also used before the kidney transplants.

**International exchanges:** We discussed the model and protocol used by the Austrian-Czech KEP in details. In particular, the hosts also presented the results of two previous kidney transplants supported by the collaboration between the two kidney exchange programmes (published by Böhmig GA, Froněk J, Slavcev A, Fischer GF, Berlakovich G, Viklický O - Czech-

Austrian kidney paired donation: first European cross-border living donor kidney exchange. Transpl Int. 2017 Jun;30(6):638-639.)

#### DESCRIPTION OF THE MAIN RESULTS OBTAINED

**National application:** The details of the Czech KEP indeed gave a good example for the establishment of the Hungarian KEP, which is under progress currently. We identified some new approaches to be considered for testing in the ongoing HKEP, especially regarding the HLA-testing protocols, desensitisation treatments and optimisation techniques used for selecting the exchange cycles and chains.

**International exchanges:** Standardised KEP programmes, laboratory methods and therapy protocols (including desensitisation in case of ABO incompatibility or elevated DSA levels) are also necessary to establish the regional co-operation between the national KEPs. The ongoing Austrian-Czech collaboration is based on the Czech KEP and their protocols are synchronised, but they also allow differences between the two countries. This knowledge is important for establishing the co-operation between the Hungarian KEP and other regional programmes.

#### FUTURE COLLABORATIONS (if applicable)

**National application:** We will build the knowledge gained into the Hungarian KEP, and we will consult with the Czech colleagues about the implementation of the HKEP, especially about the HLA-testing protocols, software development, data structure used, and the optimisation techniques. After the establishment of the HKEP, the results are expected to be published in scientific papers (acknowledging the support of ENCKEP for this STSM as well). We will also provide information for the first handbook of WG2 about the key elements of a standardised framework of national KEPs that we identified in the Czech KEP.

**International exchanges:** In practice, we aim to design the Hungarian KEP to be compatible with the Austrian-Czech joint programme, especially with regard to the HLA-testing protocols and desensitisation treatments, as permitted by the Hungarian national health care system. We also start to develop optimisation models and protocols with our Hungarian experts in optimisation for our future international collaboration that is based on a common framework, but allow some differences as required by the national authorities. We will provide information about our findings for the first handbook of WG3.