

ERA Long-Term Research Fellowship Project

YNP & DESCARTES

Project's key info

Title of the project	Basics of registries and data collection systems in kidney transplantation. Focus on the role of traditional and non-traditional biomarkers for cardiovascular morbidity and mortality
Working Group and ERA Committee involved in the project	YNP (Young Nephrologist Platform) & DESCARTES Working Group
Principal Investigator(s) of the project	Ziad Massy
Duration	12 months
Fellowship Grant	35.545,00 €
Start of the fellowship	Within 6 months after notification of the grant award to the fellow.

Receiving Institute

Name of receiving institute	1-INSERM UMR 1018 CESP – Centre de Recherche en Epidémiologie et Santé des Populations, Hôpital Paul-Brousse 2- Hôpital Ambroise Paré - APHP (Assistance Publique des Hôpitaux de Paris) Service Néphrologie et Dialyse (FRANCE)
Supervisor's name	Ziad Massy
Supervisor's e-mail address	ziad.massy@aphp.fr

Project's detailed description

Project description
<p>The receiving institute is inviting young nephrologists to gather basic, structural knowledge on the establishment, development, operation and maintenance of clinical information systems in kidney transplantation. The research team provides an opportunity to get acquainted with basic epidemiology, statistics, and operational tools. The fellow will learn how to build an IT system to record patients follow-up from their initial screening before the registration on the waiting list, transplantation and post-transplant outcomes in collaboration with our National Biomedecine Agency.</p> <p>The main purpose of this project is to help the fellows to manage their own clinical database serving as a basis for national kidney transplant databases in the future after their returning to home institution.</p> <p>It is well known that kidney transplantation is the therapy of choice for end-stage renal disease and that the leading cause of death is cardiovascular. However, evidence that reports comparative results on the risk of overall mortality and cardiovascular morbidity between patients with chronic kidney disease (CKD) and kidney transplant patients with the same renal function are</p>

sparse. The team is investigating the role of estimated glomerular filtration rate (eGFR) in cardiovascular risk assessment – with special attention to the hypothesis that eGFR may constitute risk assessment bias in these patient's groups due to differences in applicability to measure functionality. These comparisons might hardly have the specific impact of kidney transplantation on the outcome, without taking into consideration the recovery of function of the transplanted organ or the effects of the immunosuppression. Our research group recently reported an increased risk of all-cause mortality in kidney transplant patients as compared to non-transplanted CKD subjects with comparable eGFR. However, no difference was seen in the occurrence of at least one cardiovascular event during the follow-up. Another study proved that carotid-femoral pulse wave velocity measured 1 year after transplantation was significantly lower in kidney transplant recipients as compared to CKD patients (matched for different CV parameters including eGFR level). The potential role of cardiovascular risk factors might differ between kidney transplant patients and CKD-patients with comparable renal function. Therefore, traditional and non-traditional cardiovascular biomarkers might constitute a bias in hazard prediction and require further studies to find the way of how to interpret the pretransplant and post-transplant risk correctly in these specific clinical scenarios.

There is an unmet need to have centre specific structured clinical information database built up during the clinical practice to reflect real cohort-specific features of hard outcomes in kidney transplant patients all around Europe. Thus, approaching the real population significance of pretransplant risk assessment by serving reliable data from clinical centre-specific information systems to nationwide and integrated European registries could be an ultimate goal for the future generation.

The largest French cohort of non-dialyzed, non-transplanted CKD-patients has been set up and analysed by our team (CKD-Rein). A lot of valuable information about CKD and its management have already been established through the study of this large cohort, leading to multiple scientific publications and future questions. We also work in collaboration with many other French groups having patients registers, including in particular the SPIESSER group, which has a French registry monitoring kidney transplant recipients of several French transplantation units. Those databases are among the largest and oldest kidney transplant databases in Europe. Those datasets collect, analyse, and distribute information about CKD, and kidney transplant patients in France. They provide comprehensive data on the modality of treatments (including both CKD, dialysis and kidney transplantation), causes of death, patient survival, hospitalization and details of clinical follow-up. The main aim of those is the implementation of a consolidated renal disease data system that provides the biostatistical data management and analytical expertise necessary to characterize the transplant and CKD population, describing the distribution of patients by sociodemographic and socioeconomic variables, or clinical characteristics. These data are used to analyse the prevention and progression of transplant morbidity and mortality. All those systems support the analysis of clinical hypotheses to improve our everyday practice. The second goal of this application is that the successful applicant should have access to the established registry and will be able to publish her or his own research with these available datasets.

Overall, for reflecting the real picture and overall improving survival of kidney transplant patients in Europe, it is essential to create national registries and databases. The objective, transparent data-based reasoning should remain the perspective of the young nephrologist generation to establish the background of high-quality clinical research in Europe.

The fellow will become a member of a project group that consists of two members of the DESCARTES WG, two members of the YNP and Prof. Massy as host and supervisor. There will be regular (online) meetings of the project team.

The fellow will also be invited to present the progress of the project and to discuss any questions during meetings of the DESCARTES WG and YNP.

The aim is to write publications authored by the project team and on behalf of the DESCARTES WG and YNP.

Goals of the project

- Gathering knowledge on the concept and theory of establishing centre specific clinical information systems.
- Getting familiar with basics of epidemiology.
- Applying statistical methods on user level by using R and STATA.
- Application of the gathered knowledge as per followings: Assessing the traditional functional biomarkers of CKD, as potential predictors of the survival and graft loss in kidney transplant patients. Performing the analysis of the role of eGFR in kidney transplant and CKD patients to assess its impacts on the hard outcomes.
- Building up an own clinical dataset at the home institution and start collaboration with national and international nephrology and transplant registries.
- First and co-authored publication in internationally well reputation papers.
- Potential future collaboration between host and home institution.
- To build an international network with professionals active in the field of nephrology, and kidney transplantation in particular, thanks to the close contacts with members of the DESCARTES WG.

Qualifications and/or expertise required to the fellow

- Applicants should be interested and involved in general nephrology and transplant medicine.
- Previous experience in cardiovascular risk assessment in kidney transplant patients and in clinical epidemiology is preferred.
- The following programs should be known at a basic user level: R, STATA, SPSS, Statistica.
- English language knowledge on a working proficiency level is required.