

## **Sex/gender-dependent differences in the epidemiology and outcome of kidney transplantation in Switzerland**

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Clinical epidemiological data regarding chronic kidney disease (CKD) point towards an increased prevalence of advanced stages of CKD and associated morbidity in men as compared to age-matched women. The available data also suggest that the protection in females diminishes after menopause, suggesting a role for sex hormones. On the other hand, it appears that women are less targeted by CKD prevention strategies and may therefore have less access to standardized care including being waitlisted for kidney transplantation (KTx). Regarding KTx, in the large United Network for Organ Sharing (UNOS) registry, there was a greater association with delayed graft function (DGF, that is the need for dialysis during the first week after KTx) and worse graft outcome in male recipients as compared to females. Sex/gender-dependent epidemiology and therapeutic management in CKD and KTx have however rarely been systematically studied in Switzerland, across the different regions and within populations with different cultural and socio-economic backgrounds. Acquiring detailed epidemiological data is essential for optimal healthcare planning and to ensure the best outcome for women and men suffering from CKD and undergoing KTx. For this, we will:

- 1. Analyze the sex-dependent epidemiology and outcome of KTx in Switzerland** by using the Swiss Transplant Cohort Study national kidney database (STCS, 2008-2023, approximately 2500 patients). Our primary endpoint will focus on a multivariate analysis of graft function (estimated glomerular filtration rate according to CKD-EPI) during follow-up (at 1, 5, 10 years). Our secondary endpoints will consist of the incidence of DGF, biopsy-proven acute rejection episodes during the first year, death-censored graft loss, major adverse cardiovascular events (MACE) or death during follow-up.
- 2. Analyze sex/gender-dependent access to KTx across regions in Switzerland** by comparing the Swiss renal registry and quality assessment program (srrqap, 2006-2023, all dialyzed patients in Switzerland) to the patients who get transplanted (STCS). Our primary endpoint will compare KTx rates in female and male adult patients, in a setting in which equal access to medical treatment is assumed. We will also perform a survey regarding information and access to KTx.

We expect robust epidemiological data on ESKD and outcome of KTx in Switzerland, considering possible sex/gender-based disparities. This research will allow to combine, for the first time, available Swiss registry/cohort data and the use of patient-orientated questionnaires to analyze the trajectory of women and men with ESKD in Switzerland, their access to KTx, as well as their outcome considering their comorbidities and social backgrounds. Overall, the project will lead to a better understanding of the epidemiology, quality of care and outcome of these patients according to sex/gender. We will also gain insight on patients' and nephrologists' perspective and knowledge on risks/benefits of KTx. Thus, besides a benchmarking of clinical practices in Switzerland, we may identify some sex-specific determinants that could be modified to improve preventive and therapeutic strategies in KTx.