Correlation between CT scan and nuclear medicine scan in addressing renal asymmetry.

Conclusions:
Nuclear medicine seems to offer no advantage over CT volumetrics in addressing renal asymmetry.

Correlation between CT scan and nuclear medicine scan for right kidney

Correlation between CT scan and nuclear medicine scan for left kidney

PO2101

When Is a Second Kidney Transplant Lifesaving? Effect of Waiting Time on Mortality in a Retrospective Cohort Study Using Target Trial Emulation

Alexander Kainz,1 Michael Kammer,1,2 Roman Reindl-Schwaighofer,1 Susanne Strohmayer,1 Vojtech Petr,1 Ondrej Viklicky,1 Daniel S. Abramowicz,3 Marcel Naik,6,9 Gert J. Mayer,5,14 Rainer Oberbauer,1 1Medical University of Vienna, Department of Nephrology, Vienna, Austria; 2Medical University of Vienna, Department of Biometrics, Vienna, Austria; 3Medical University of Vienna, Department of Epidemiology, Vienna, Austria; 4Institut klinische experimentalmiednicy, Praha, Czechia; 5Antwerp University Hospital, Department of Nephrology, Antwerp, Belgium; 6Charité Universitätsmedizin Berlin, Department of Nephrology and Medical Intensive Care, Berlin, Germany; 7Medizinische Universität Innsbruck Universitatsklinik für Innere Medizin IV Nephrologie und Hypertensiologie, Innsbruck, Austria; 8Austrian Dialysis and Transplant Registry, Innsbruck, Austria; 9Berlin Institute of Health, Berlin, Germany.

Background: The median kidney transplant half-life is 10 to 15 years, and because of the scarcity of donor organs and immunological sensitization of candidates for retransplantation, there is a need for quantitative information if, and when a second transplantation is no longer associated with a reduced risk of mortality compared to waitlisted patients treated by dialysis. Therefore we investigated the association of time on waitlist with patient survival in patients who received a second transplantation versus remaining on waitlist with continued dialysis treatment.

Methods: In this retrospective study we used data of 2346 patients from the Austrian dialysis and transplant registry merged with data from Eurotransplant who were waitlisted for second kidney transplantation during the years 1980 to 2019. The analysis was based on target trial emulation via a sequential Cox approach, in which each observed transplant allocation started a virtual trial mimicking a randomized trial via inverse probability weighting. The analysis was adjusted for recipient age and sex, year and duration of first transplantation, duration of dialysis, and time between first graft loss and initial joining date of the waiting list for the second transplantation.

Results: Second kidney transplantation showed an increased restricted mean survival time (RMST) at 10 years of follow-up compared to remaining on the waiting list (5.8 life-months gained, 95% CI 0.9 to 11.1). However, this survival benefit was diminished in patients with longer waiting time after first graft loss: RMST differences at 10 years of follow-up were 8.0 (95% CI 1.3 to 14.0) and 0.1 life-months gained (95% CI -14.3 to 15.2) for patients with a waiting time after first graft loss of less than one year, and eight years, respectively.

Conclusions: Based on these data we conclude that a second kidney transplant leads to prolonged patient survival compared to remaining waitlisted by treatment by dialysis, but that the survival benefit diminishes with longer waiting time. Nevertheless, the higher quality of life after transplantation could be an argument to favour retransplantation if a suitable donor organ is available.

Funding: Government Support - Non-U.S.

PO2102

Correlation Between CT Volumetric and Nuclear Renal Scans in Donors with Renal Asymmetry

Nisar Gandhi, Hassan N. Ibrahim, Duc T. Nguyen, Edward A. Graviss, Hana Nguyen. Houston Methodist Hospital, Houston, TX.

Background: The Organ Procurement and Transplant Network (OPTN) lists renal asymmetry as a relative contraindication to donation. Clinicians resort to nuclear medicine scans to address discrepancies in kidney size observed by commuted tomography (CT) volumetric. Our study looked at the correlation between CT volumetrics and nuclear medicine scan in addressing renal asymmetry.

Methods: At a large US transplant center, 62 potential donors with discrepancies in kidney size underwent both CT volumetric and nuclear medicine renal scans. The concordance correlation between the CT scan and nuclear medicine scan results was determined separately for the right and left kidney.

Results: The donors were 52.2 years of age (median IQR: 38.5, 61.7), 29.0% male, and 59.7% white. By CT, the right kidney was 45.5% and left kidney was 54.5% of the overall volume. On nuclear medicine scan, right kidney was 46.8% and left kidney was 53.3% (Table 1). The Pearson correlation coefficient was 0.59 for the right kidney and was 0.58 for the left kidney (Figure 1, 2).

Conclusions: Nuclear medicine seems to offer no advantage over CT volumetrics and it adds to the overall time (30-60 minutes) and cost (~$1,587) of the donor evaluation process.

| Right | CT Volumetric (%) | nuclear IQR |
|-------|------------------|-------------|
| 45.5  | 40.3, 49.3       | 54.3 (45.3, 57.4) |

| Left  | CT Volumetric (%) | nuclear IQR |
|-------|------------------|-------------|
| 54.5  | 49.3, 59.5       | 53.3 (50.5, 56.4) |

Key: TH - Thursday; FR - Friday; SA - Saturday; OR - Oral; PO - Poster; PUB - Publication Only

Underline represents presenting author.

643