CKG potential. Since each animal acts as its own control, fewer animals are needed to assess CKG with the MRI method. We conclude that serial MRI is superior to KW/BW approaches to assess CKG.

I have no potential conflict of interest to disclose.

I did not use generative AI and AI-assisted technologies in the writing process.

WCN26-8334

EXPLORING CELL-DERIVED MICROPARTICLES IN ANTIBODY-MEDIATED RENAL ALLOGRAFT REJECTION

(Article No. 105549)

SHUBHI KAMTHAN*[1], SNIGDHA PRATAP SINGH[1], NARAYAN PRASAD[2], VIKAS AGARWAL[3], VINITA AGRAWAL[1]
[1]PATHOLOGY, SGPGIMS, LUCKNOW, India; [2]NEPHROLOGY, SGPGIMS, LUCKNOW, India; [3]CLINICAL IMMUNOLOGY, SGPGIMS, LUCKNOW, India

Introduction: Antibody-mediated rejection (ABMR) in renal allografts induces microvascular inflammation and endothelial injury, processes that contribute to the release of circulating microparticles (MPs). These MPs, derived from various cell types, may serve as non-invasive biomarkers reflecting immune activation and vascular damage. This study aimed to assess plasma-derived MPs specifically monocyte-derived MPs (MMPs), platelet-derived MPs (PMPs), endothelial cell-derived MPs (EMPs), T-helper cell-derived MPs (THMPs), and T-cytotoxic cell-derived MPs (TCMPs) as potential biomarkers in ABMR.
Methods: The study included fifty renal allograft recipients diagnosed with ABMR on for-cause biopsies, twenty-five with stable graft function (SGF), and twenty-five age- and sex-matched healthy controls (HC) from January 2021 to January 2024. All biopsies were classified per Banff criteria. Plasma MPs were isolated and quantified using TruCount Tubes (BD), with flow cytometric analysis (gate limit between 0.5 µm and 1.0 µm).MPs were stained and quantified with Annexin V, CD14, CD42a , CD31, CD4, CD8.
Results: All ABMR participants were males with a mean age of 38.2 ± 9 years. Mean serum creatinine was 3.0 ± 2.6 mg/dL in ABMR, 1.2 ± 0.2 mg/dL in SGF, and 0.7 ± 0.1 mg/dL in HC. Total circulating MPs were significantly elevated in ABMR ($1.9 \times 10^4 \pm 9 \times 10^3$ counts/µL) compared to SGF ($1.6 \times 10^4 \pm 9.1 \times 10^3$ counts/µL) and HC ($1.3 \times 10^4 \pm 2.6 \times 10^3$ counts/µL). Among all subsets, MMPs constituted the highest proportion (26.4%). PMP (14%), EMP (11%), THMPs (17%), and TCMPs (11%) levels were significantly increased in ABMR compared with SGF and HC ($p < 0.05$). A negative correlation was observed between total MPs and estimated glomerular filtration rate (eGFR; $p = -0.021$). PMPs, THMPs, and TCMPs were positively associated with tubular atrophy on graft histology.
Conclusion: Renal allograft recipients with ABMR demonstrate a significant elevation of circulating cell-derived MPs, particularly monocyte-derived subtypes, indicating higher cellular activation and injury. MP phenotyping in ABMR may represent mechanistic biomarkers linked to immune-mediated vascular injury and it shows pathophysiological pathways, including endothelial dysfunction, immune activation, and pro-thrombotic states. As a non-invasive biomarker, MPs holds potential for improving ABMR diagnosis, monitoring graft injury progression, and enabling therapeutic strategies in kidney transplantation.

I have no potential conflict of interest to disclose.

I did not use generative AI and AI-assisted technologies in the writing process.

WCN26-8370

EVALUATION OF CORTICAL MICROCIRCULATION IN KIDNEY TRANSPLANTS USING LINEAR TRANSDUCER DOPPLER ULTRASOUND: DELAYED VS. IMMEDIATE GRAFT FUNCTION

(Article No. 105550)

Karmen Romozi*[1], Miha Arnol[1], Jernej Pajek[1], Jakob Gubenšek[1], Andreja Aleš-Rigler[1], Jadranka Buturović-Ponikvar[1]
[1]Department of Nephrology, University Medical Centre Ljubljana, Ljubljana, Slovenia

Introduction: Due to its non-invasiveness and accessibility, Doppler ultrasound (US) is the first-line imaging modality for morphological assessment and evaluation of hemodynamic parameters in transplanted kidneys. Typically, curved transducers are used; however, because transplanted kidneys are located close to the skin surface, they are uniquely accessible for Doppler examination using a linear transducer. This allows for more precise evaluation of cortical blood flow parameters. The early postoperative period following kidney transplantation is characterized by significant macrovascular and microvascular changes in the graft. This prospective observational study aimed to compare daily Doppler US parameters of kidney grafts between recipients with immediate graft function (IGF) and those with delayed graft function (DGF).
Methods: Consecutive patients who received a kidney transplant between August 2015 and September 2018 were enrolled in this prospective observational study. Patients with primary non-function, early graft loss, or early post-transplant death were excluded. In addition to daily laboratory testing, Doppler ultrasound examinations were performed using a linear transducer on weekdays during the first 14 postoperative days or until discharge, and again at one month post-transplantation, targeting the region of the graft closest to the skin surface. Examinations were conducted by nephrologists with expertise in renal ultrasonography using a Siemens ACUSON Sequoia ultrasound system in the majority of cases. Serum creatinine (sCr), cortical perfusion (CP) (see Image 1), resistive index (RI), and end-diastolic velocity (EDV) (see Image 2) were compared between the IGF and DGF groups.

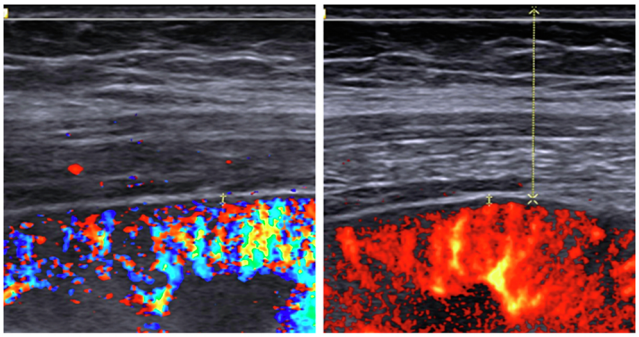


Image 1. Cortical perfusion quantified as the distance from the renal capsule to the most peripheral detectable Doppler signal, using a linear transducer with color and power Doppler.

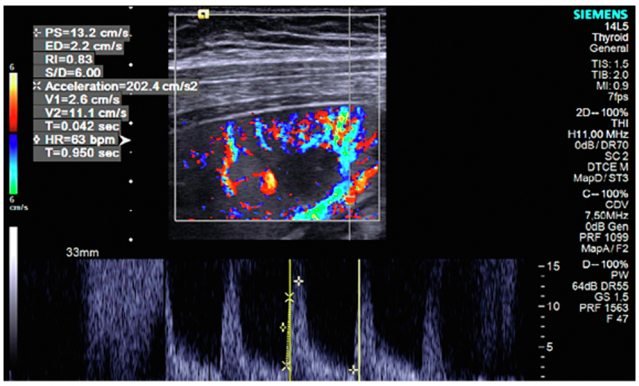


Image 2. Doppler assessment of resistive index and end-diastolic velocity using a linear transducer.

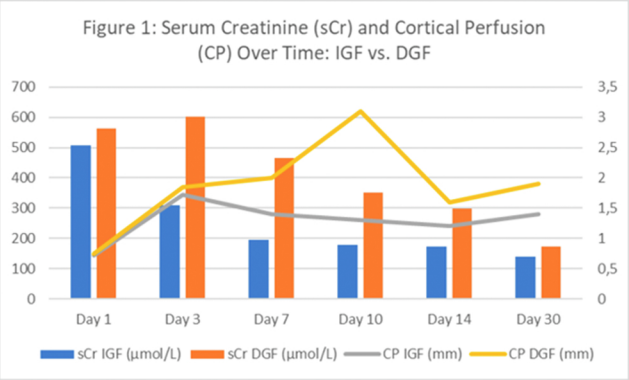
Results: A total of 123 patients were included, of whom 84 (68%) were male, with a median age of 53 years (range: 18–81). Most patients (119; 97%) received a kidney from a deceased donor, while 4 (3%) received a graft from a living-related donor. Ninety-nine patients (80%) exhibited immediate graft function, while 24 (20%) developed DGF. Doppler US parameters and serum creatinine levels for the IGF and DGF groups are presented in Table 1 and Figures 1–3. Across all time points during the observation period, patients with DGF consistently showed poorer CP, higher RI, lower EDV, and worse graft function compared to those with IGF. However, these differences did not reach statistical significance, likely due to the limited sample size and technical challenges in performing early postoperative Doppler assessments with a linear probe (e.g., due to bowel gas or edema). Notably, the decline in serum

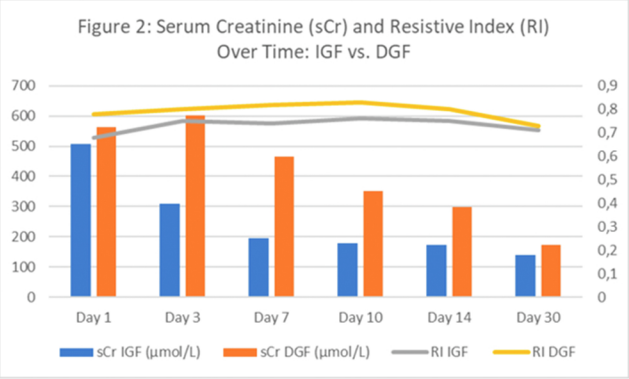
creatinine preceded the improvement in Doppler parameters. By the end of the 30-day observation period, all patients were dialysis-independent.

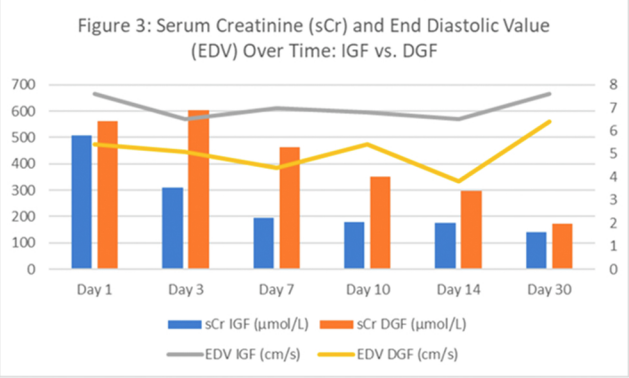
Table 1. Doppler Indices and Serum Creatinine in Immediate (IGF) and Delayed Graft function (DGF) Groups

Parameter/Post-op. Day	Day 1	Day 3	Day 7	Day 10	Day 14	Day 30
CP IGF (mm)	0.72±0,3	1.72±1.6	1.4±1.4	1.3±1.1	1.2±1.2	1.4±1.6
CP DGF (mm)	0.75±0.47	1.85±1.6	2.0±0.5	3.1±1.1	1.6±1.2	1.9±2
P-value	0.43	0.19	0.09	<0.001	0.21	0.23
RI IGF	0.68±0.14	0.75±0.1	0.74±0.1	0.76±0.1	0.75±0.1	0.71±0.1
RI DGF	0.78±0.12	0.80±0.1	0.82±0.1	0.83±0.1	0.8±0.1	0.73±0.1
P-value	0.09	0.14	0.01	0.05	0.33	0.44
EDV IGF (cm/s)	7.6±5	6.5±3.7	7.0±3.7	6.8±4.1	6.5±3.6	7.6±2.3
EDV DGF (cm/s)	5.4±2.4	5.1±2,3	4.4±3.4	5.5±4.1	3.8±1	6.4±2
P-value	0.18	0.17	0.02	0.16	0.02	0.07
sCr IGF (µmol/L)	506±205	309±216	194±118	179±95	174±98	139±69
sCr DGF (µmol/L)	563±163	603±153	464±213	351±188	298±180	173±118
P-value	0.3	<0.001	<0.001	<0.001	<0.001	0.06

Abbreviations: CP – cortical perfusion, RI – resistive index, EDV – end diastolic value, sCr – serum creatinine
All values are presented as mean ± standard deviation.







Conclusion: Within the first 30 days post-transplantation, patients with delayed graft function exhibited persistently higher RI, lower EDV, and reduced cortical perfusion compared to those with immediate graft function. However, improvement in Doppler indices did not precede the recovery of kidney function in either group.

I have no potential conflict of interest to disclose.

I used generative AI and AI-assisted technologies in the writing process.

ChatGPT was used to assist with grammar improvement. All content was subsequently reviewed and edited by the author, who takes full responsibility for the publication.

WCN26-8389

"IMPACT OF DIALYSIS DURATION ON POST-TRANSPLANT OUTCOMES: A COMPARATIVE STUDY OF KIDNEY TRANSPLANT RECIPIENTS WITH DIALYSIS VINTAGE LESS THAN AND GREATER THAN ONE MONTH"

(Article No. 105551)

KATHAN CHUDGAR*[1], ASHAY SHINGARE[1], MADAN M. BAHADUR[1]
[1]NEPHROLOGY, JASLOK HOSPITAL AND RESEARCH CENTRE, MUMBAI, India

Introduction: Kidney transplantation is the preferred treatment for ESRD(End Stage Renal Disease), offering better survival and quality of life than dialysis. Dialysis duration prior to transplantation influences outcomes, as prolonged dialysis can cause inflammation, vascular calcification, malnutrition, and HLA sensitization, adversely affecting graft and patient survival. Pre-emptive transplantation improves graft function, reduces delayed graft function, and enhances long-term outcomes. The effects of very short dialysis (<1 month) remain underexplored. This study compares post-transplant outcomes in recipients with dialysis ≤1 month versus >1 month, focusing on graft function, patient survival, and complications. **Objectives:** *To compare post-transplant outcomes in kidney transplant recipients based on pre-transplant dialysis duration (≤1 month vs. >1 month), focusing on graft function, patient survival, graft failure, rejection and infection.*
Methods: This retrospective comparative study was conducted at tertiary care hospital to evaluate the impact of dialysis duration on post-transplant outcomes. Kidney transplant recipients, including both living and deceased donor transplants, were included. Patients were categorized into two groups: Group A (≤1-month dialysis) and Group B (>1-month dialysis). Demographic data, cause of ESRD, donor type, comorbidities, and dialysis duration were collected. Post-transplant outcomes assessed included graft function, patient survival, graft failure, rejection and infective complications. A p-value <0.05 was considered statistically significant.

BASELINE CHARECTERISTICS				
Characteristic	Overall N = 59	Early N = 7	Late N = 52	p-value
Age	36 (30, 45)	31 (18, 45)	37 (31, 46)	0.2
Gender				0.6
Male	46 (78%)	5 (71%)	41 (79%)	
Hypertension	54 (92%)	6 (86%)	48 (92%)	0.5
Diabetes mellitus	11 (19%)	1 (14%)	10 (19%)	>0.9
Donor relationship				0.2
Parent	28 (47%)	4 (57%)	24 (46%)	
Others	14 (24%)	1 (14%)	13 (25%)	
Spouse	13 (22%)	1 (14%)	12 (23%)	
Native kidney disease				0.046
Unknown	21 (36%)	1 (14%)	20 (38%)	
CGN	16 (27%)	1 (14%)	15 (29%)	
ABO compatible transplant				>0.9
Compatible	43 (73%)	5 (71%)	38 (73%)	
Donor type				>0.9
LDKT	56 (95%)	7 (100%)	49 (94%)	
Dialysis vintage(Days)	300 (90, 720)	14 (7, 21)	360 (165, 791)	<0.001
Induction				0.13
ATG	51 (86%)	5 (71%)	46 (88%)	
Preoperative Rituximab	20 (34%)	3 (43%)	17 (33%)	0.7

Results: A total of 59 kidney transplant recipients were analyzed (7 with dialysis ≤1 month, 52 with >1 month). Overall, median age was 36 years, and 78% were male, with no significant intergroup differences. Parents (47%) and spouses (22%) were the most common donors. Hypertension (92%) and diabetes (19%) prevalence was similar.