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**EVALUATION OF DAY ZERO COLOR DUPLEX ULTRASOUND IN PREDICTION OF RENAL ALLOGRAFT EARLY POSTOPERATIVE COMPLICATIONS**Moataz Fatthy<sup>1</sup><sup>1</sup>*Nephrology and Internal Medicine, Medical College Cairo University, Cairo, Egypt*

**INTRODUCTION AND AIMS:** Renal transplantation is a precious module of renal replacement therapy. The prediction of renal allo-graft dysfunction is one of the major concerns in patients' early follow-up regarding any surgical or non-surgical complications thus raising the demand of a non-invasive, affordable, non-toxic and accurate method of screening. This study is aiming to start using a protocol of day-zero grey scale and Color Duplex Ultrasound (CDUS) of renal allo-graft recipients with a smooth day-zero post-operative period regarding their hemodynamics and urine output. Day-zero CDUS is then to be correlated and compared with the patients' early post-operative first week hospital stay in the two groups either those with a smooth eventless course or

those with any unusual events that may occur as the rise in renal chemistry, oliguria, severe hypertension, disturbed patient's hemodynamics or a need for surgical re-intervention. This study will estimate the feasibility to accept day-zero CDUS protocol as a possible predictor of post-operative surgical or non-surgical complications for renal allo-graft salvage.

**METHODS:** A total of 200 living recipient patients recruited from Al Kasr Al Ainy nephrology centre and other transplantation centres are going to be enrolled in this interventional perspective self-control study, performing a grey scale ultrasound examination of the graft and ureteric stent, Color duplex ultrasound (CDUS) to evaluate arterial anastomosis, ilio-renal ratio and venous anastomosis, as well as acceleration and resistivity indices and power doppler to estimate perfusion defects. Patients are going to be divided into two groups: Group A: recipients with a normal day-zero kidney transplant duplex Group B: recipients with an abnormal day-zero kidney transplant duplex. Results are then going to be evaluated using statistical methods. Inclusion criteria Renal transplant recipients with a smooth eventless course regarding their hemodynamics and urine output at their post-operative day-zero. Exclusion criteria Patients with hyper-acute rejection, day zero oliguria or severe hypertension will be excluded from this study.

**RESULTS:** 1. A high day-zero R.I. value is not related to graft dysfunction. 2. Renal transplant patients discharged with a high R.I. value should be followed-up as 29.4% out of them experienced oliguria and were indicated for a renal biopsy. 3. A day-zero cut-off R.I. value of 0.755 is a predictor for renal biopsy taking with a sensitivity of 83.3% and a specificity of 73.5%. 4. A 7th post-operative day cut-off R.I. value of 0.745 is a predictor for renal biopsy taking with a sensitivity of 73.3% and a specificity of 66.7%. 5. Day-zero CDUS helps in medical treatments / modifications in stopping anti-coagulation in patients experiencing post-transplantation collections. 6. Day-zero CDUS diagnose surgical and vascular complications. 7. Early diagnosis of vascular complications by day-zero CDUS help in graft salvage. 8. The early detection and management of renal graft complications through performing a day-zero CDUS may help in graft salvage thus minimizing the need for a renal biopsy later on.

**CONCLUSIONS:** Renal graft CDUS should be enrolled as a protocol procedure on day-zero post-transplantation even to patients with a day zero smooth and eventless course