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The short term outcome of deceased donor kidney transplantation with short cold ischemic time is comparable to that of living donor kidney transplantation

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Objectives: Graft function in deceased donor kidney transplantation (DDKT) is known to be inferior to that of living donor kidney transplantation (LDKT). The purpose of this study is to compare the outcome of deceased donor kidney transplant, especially focusing on expanded criteria donor (ECD).

Methods: This study was performed as a single center retrospective study. All kidney transplant recipients in Pusan national university hospital from January 2009 to June 2017 were included in this analysis.

Results: Total 137 kidney transplant were performed and 84(61.3%) was DDKT. The recipients of DDKT were older (52.2 ± 10.3 vs 44.7 ± 12.2 , $P < 0.001$) and had more diabetes (47% vs 25%, $P = 0.012$) compared to LDKT recipients. 31(36.9%) of deceased donors was ECD donors. ECD donors were older (64.2 ± 5.0 vs 39.5 ± 12.4 , $P < 0.001$) and had more hypertension (3.8% vs 35.5%, $P < 0.001$) than standard criteria donors. The leading cause of death was trauma (54.4%), followed by underlying disease progression (27.9%), hypoxic brain damage (5.9%) and others (11.8%). Cold ischemic time was relatively short, 275.5 ± 137.8 minutes in DDKT.

Only one case of graft failure which was performed as LDKT occurred during mean follow up period of 1089.1 ± 707.8 days. The one-year estimated glomerular filtration rate had no difference between LDKT and DDKT (70.5 ± 25.8 ml/min/1.73m² vs 77.1 ± 27.8 ml/min/1.73m², $P = 0.216$). The one-year graft function of ECD was significantly lower than SCD (60.4 ± 18.4 ml/min/1.73m² vs 87.4 ± 27.7 ml/min/1.73m², $P < 0.001$), however, short term graft survival was excellent; no graft failure occurred in ECD KT with mean follow up period of 1069.4 ± 631.8 days.

Conclusions: The short term outcome of DDKT with short cold ischemic time could be excellent. Long term follow up with larger study population is needed.