

인터넷 기반 알고리즘을 통한 신장 교환이식

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Experience of Donor Kidney Exchange with a Web Based Algorithm

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Objective : As a method to overcome incompatibility between intended living donor and recipient, we devised and performed a web based multi-pair donor kidney exchange program (Donor Organ Exchange System, DOES).

Methods : 99 donor recipient pairs (DRP) were enrolled from 6 transplant centers between Sep. 2005 and Aug. 2006. Reasons for enrollment were ABO mismatch (64.7%), HLA mismatch (24.2%), positive crossmatch (10.1%) and other reasons (1.0%).

Results : Out of 54 DRP matched by the algorithm, 18 cases completed exchange transplant (12 DRP by 2 pair combination exchange, 6 DRP by 3 pair combination exchange). Thirty-nine DRP withdrew from DOES, due to transplant by other methods (15.4%), inadequate donor condition (5.1%), dialysis preference (5.1%), and temporary withdrawal from DOES due to various other reasons (74.4%). Currently 42 DRP remains in waiting list. In transplanted cases, median waiting time for transplant was 4.0 months (range 2–14 months). Latest BUN and serum creatinine level were 18.4 mg/dL (range 13.2–25.0) and 1.2 mg/dL (range 1.0–1.6), respectively, with follow up duration of 14 months (range 5–17 months), except one case with humoral rejection episode 3.5 months after transplant. This patient is currently on hemodialysis due to irreversible renal failure. One case developed post transplant diabetes mellitus shortly after surgery. The other recipients and all donors have not experienced any significant complications.

Conclusion : DOES could successfully find optimal exchange combinations from incompatible DRP and the patients outcome is comparable to that of other living transplant cases. Further effort should be made to increase patient pool and minimize the avoidable retraction after the matching by the algorithm.