

## 아이코덱스트린 투석액이 복막투석 환자의 잔여신기능 보존에 미치는 영향

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### Effect of Icodextrin Solution on Preservation of Residual Renal Function in Peritoneal Dialysis Patients

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**Background:** Preservation of residual renal function (RRF) is important to improve clinical outcomes in patients undergoing peritoneal dialysis (PD). Although icodextrin solution has been highlighted in many aspects compared to glucose-based solution, proof of a beneficial effect of icodextrin solution on RRF is lacking.

**Methods:** We conducted a multicenter prospective randomized controlled open-label trial to investigate whether icodextrin solution can preserve RRF. One hundred patients who met inclusion criteria at 8 centers in Korea were randomly assigned to receive one exchange of icodextrin solution for  $\geq 8$  hour-dwell and two exchanges of 1.5% glucose-based biocompatible neutral pH solution or one exchange of  $\geq 2.5\%$  and two exchanges of 1.5% glucose-based biocompatible solutions. These patients had daily urine output  $\geq 750$  ml at enrolment. The primary outcome was changes in RRF including residual GFR and daily urine output at 1 year. These were analyzed using mixed-effects general linear models.

**Results:** Among eligible patients, 49 were assigned to icodextrin group and 51 to glucose solution group. The mean age was 53.6 years and 57% had diabetes. Overall, there were no differences in baseline characteristics between the two groups. During follow-up, the slope of decline in residual GFR was  $-0.51$  ml/min/month/ $1.73\text{m}^2$  in icodextrin group, while it was  $-0.47$  ml/min/month/ $1.73\text{m}^2$  in glucose solution group (95% CI,  $-0.19$  to  $0.27$ ;  $p=0.728$ ). Of note, daily urine output declined faster in glucose solution group than in icodextrin group ( $-90.01$  vs.  $-38.66$  ml/month; 95% CI,  $-97.34$  to  $-5.36$ ;  $p=0.029$ ). The results remained the same when we analyzed these using intention-to-treat and per protocol principles. Volume status assessed by echocardiography and bioelectrical impedance analysis, peritoneal ultrafiltration, and peritoneal membrane transport did not differ between the two groups during follow-up.

**Conclusion:** Icodextrin solution attenuated the rate of decline in daily urine output compared to glucose solution, but did not affect residual GFR. Further long-term studies are required to examine whether icodextrin solution may provide a beneficial clinical outcomes via better preservation of urine volume in patients undergoing PD.

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**Key Words:** 아이코덱스트린 투석액, 잔여신기능, 복막투석  
Icodextrin, Residual renal function, Peritoneal dialysis