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The Effect of Ouabain On Peritoneal Transport Characteristics. *MS Park[1], O Heimburger[2], J Waniewski[3], A Werynski[3], H B Lee[1], B Lindholm[2]. Hyonam Kidney Lab., Seoul, Korea[1], Karolinska Institute[2], Stockholm, Sweden[2], Polish Academy of Sciences, Warsaw, Poland[3]*

Fluid and solute transport during peritoneal dialysis PD is believed to be passive, mainly diffusive and partially convective transports. Other transport mechanisms than passive transport may, however, also be involved. Intracellular tranport of potassium in cultured mesothelial cells is reported to be regulated by a channel that is blocked by Ouabain. High glucose and therefore high insulin in the peritoneal cavity may promote extra to intracellular shift of potassium during peritoneal dialysis. To investigate the role of Ouabain-blocked K channel in peritoneal transport. A 4-hour single peritoneal dialysis was performed in 16 normal Sprague-Dawley rats. Conventional dialysis solution (Dianeal 3.86 % ,pH 5.7) containing sufficient K (5.0±0.3 mmol/l) to minimize diffusive transport of K with (PD-O)and without (PD-C) Ouabain (10^{-5}M) was used in 8 rats each. Infusion volume was 30 ml. Intraperitoneal dialysate volume (V_D) was estimated from the dilution of of volume marker, ^{131}I human serum albumin (RISA), with corrections for the elimination of RISA from the peritoneal cavity (K_E, ml/min) and sample volume. The diffusive transport coefficient (K_{BD}) and the sieving coefficient (S) were estimated using modified Babb-Randerson-Farrell model. D/P K at the beginning of dialysis was 1.2±0.1. V_D was significantly higher ($p<0.05$) in PD-O than in PD-C from 120 min of dialysis. K_E (0.058±0.003 vs 0.027±0.018, $p<0.05$) and fractional amount of glucose absorption were significantly lower in PD-O than in PD-C from 90 min of dialysis. K_{BD} and S values for urea, glucose, sodium and K did not differ between the two solutions.

Ouabain decreased the peritoneal fluid reabsorption and decreased peritoneal glucose absorption, and therefore increased V_D. Peritoneal transport of small solutes including K was not influenced by Ouabain during peritoneal dialysis with an acidic dialysis solution in rat.

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Effect of prolonged subcutaneous implantation of peritoneal catheter on peritonitis rate during CAPD. *MS Park, EY Lee, MK Cha, JH Kim, KI Song, DC Han, SD Hwang, C Moon, HB Lee, Hyonam Kydney Lab., Soon Chun Hyang Univ.* We have previously reported in an uncontrolled study that peritonitis (P) incidence was reduced with the introduction of a new access technique as described by Moncrief in which the external segment of peritoneal catheter was left implanted for 6 weeks before exteriorization and bag exchanges. We, therefore, conducted a prospective randomized controlled study to confirm the earlier observation. Patients who started CAPD between October 1992 and December 1994 and who remained on CAPD for more than 3 mos were included in this analysis. A total of 59 CAPD patients were randomized into 2 groups: 27 patients had catheters inserted by conventional technique (C) and had 6 weeks of break-in period and 32 patients had catheters left implanted subcutaneously for 6 weeks (I). 13 patients (48.1%) from group C and 18 (56.3%) from group I used Y connector (CY and IY) and remaining patients from each group used straight connector (CS and IS). Age, sex and proportion of diabetics were not different between the two groups. The observation period was 264mos for C and 438 mos for I, for a total of 703 mos. The incidence of P was significantly lower in group I compared with group C regardless of connectors (14.8 vs 8.8 mos, $p<0.05$). The incidence of P was lowest in group IY while this was the highest in group CS (18.1 vs 7.5 mos, $p<0.05$).

Conclusion: Prolonged subcutaneous implantation of peritoneal catheter significantly reduced the P rate and the use of Y connector further reduced P rate.