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Dialysis

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A MODIFIED PERCUTANEOUS PERITONEAL DIALYSIS CATHETER IMPLANTATION: VIABLE OPTION FOR PATIENTS REQUIRING UNPLANNED URGENT-START PERITONEAL DIALYSIS

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Background: Urgent-start peritoneal dialysis (UPD) is applied to patients who need PD in less than 2 weeks, but able to wait for more than 48 hours before starting the PD. A modified percutaneous PD catheter implantation method with no break-in time performed by nephrologists has been used for more than 10 years in our institution. To evaluate the usefulness of this method and automated PD (APD) in patients undergoing urgent PD, we reviewed the clinical outcomes of the two - percutaneous and surgical - PD catheter implantation methods in 2 university hospitals.

Methods: This study included 204 patients underwent urgent-start PD during 2002~2015. Based on the PD catheter implantation method, the patients were grouped into a percutaneous group (n = 121) and a surgical group (n = 83). PD catheters for percutaneous group were placed using a modified (Seldinger's) percutaneous implantation method with tapered dilators.

Results: The percutaneous group showed lower hemoglobin (9.34 ± 1.56 vs. 9.84 ± 1.27 , $p < 0.013$), lower albumin (3.38 ± 0.59 vs. 3.57 ± 0.6 , $p < 0.027$), higher BUN (93.08 ± 37.11 vs. 64.6 ± 29.18 , $p < 0.001$), higher creatinine (9.99 ± 3.75 vs. 7.78 ± 2.08 , $p < 0.001$). The percutaneous group showed shorter hospitalization after catheter implantation (15.1 ± 3.2 vs. 19.6 ± 9.5 days, $p < 0.001$) compared with the surgical group. The percutaneous group showed significantly shorter break-in time after catheter implantation (1.02 ± 2.62 vs. 8.8 ± 5.14 , $p < 0.001$) and shorter admission days (15.31 ± 3.2 vs. 19.6 ± 9.5 , $p < 0.001$). There were no significant differences in infectious complications (peritonitis, exit site infection, and tunnel infection), and mechanical complications (pericatheter leak, catheter migration, diminished outflow, hemorrhage, bowel perforation, and hernia) between the two groups. APD seemed to be more useful than CAPD in the setting of UPD in the Percutaneous group ($p = \text{NS}$).

Conclusion: The percutaneous group has less residual renal function, shorter admission days and shorter break-in time. Compared to conventional surgical method, no significant infectious and mechanical complications were noted. Moreover, APD would be a better option for initiation and maintenance of UPD than CAPD.

Keywords: percutaneous catheter insertion, urgent peritoneal dialysis