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Choice of Drain Systems and Associated Peritonitis Rates in Automated Peritoneal Dialysis Patients

*Michelle Cassin, Brian Steers, Levi Njord, Cory Pyke, Carrie Wood, Mahesh Krishnan, John Moran
DaVita HealthCare Partners, Nashua, NJ*

Background: Patients performing automated peritoneal dialysis have 2 primary options for draining the spent fluid: either into a drain bag connected as a closed system or with an open line draining into a drain basin (typically a toilet). While the 2 are claimed to be clinical equivalent, there has been little research reported regarding peritonitis rates among patients draining via each option. This analysis was undertaken to better understand the peritonitis risk when these options are used.

Methods: Data were compiled from 2 sources, a large dialysis organization (LDO) clinical data and supply ordering company data. The date range was from Jan 2011 to Jun 2013. Patient drain system type was determined from the ordering data, with any patient who was ordering drain bags at least every 2 out of 3 months classified as a drain bag patient, and any patient who was consistently not ordering drain bags classified as a drain line patient. A case of peritonitis was defined as any time any of the following conditions existed: hospitalization with a discharge diagnosis of peritonitis, IP antibiotic order where the justification was peritonitis or a combination of any 2 of the following: abdominal pain, cloudy dialysate with white blood cell count >100 μ L with \geq 50% polymorphs, and positive dialysate culture.

Results: The data were analyzed both at the patient and clinic level. At the patient level those using drain lines had a peritonitis rate (mean, 95% CI) of 1 episode in 55 (54, 57) and those using drain bags 1 in 52 (51, 53) episodes per patient months at risk. At the clinic level, stratifying into quartiles of drain bag use of < 25%, 25-50%, 50-75%, and > 75%, the peritonitis rates were 1 in 60 (54, 69), 1 in 68 (60, 75), 1 in 62 (56, 71), and 1 in 50 (45, 56) episodes per patient months at risk respectively.

Conclusion: Taken together, these results suggest that there is no clinically significant difference in peritonitis rates among patients using drain lines compared to those using drain bags.

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