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STUDY EXAMINES VOLUME OVERLOAD IN PATIENTS INITIATING PERITONEAL DIALYSIS

Highlights

- Volume overload, or too much fluid in the body, is a frequent problem in patients with kidney failure initiating peritoneal dialysis.
- Volume overload tends to improve over time after starting peritoneal dialysis, but is consistently higher in males vs. females and in patients with diabetes vs. those without.
- Volume overload is associated with a higher risk of premature death.

Washington, DC (May 23, 2019) — A new study published in *CJASN* found substantial volume overload, or too much fluid in the body, in patients with kidney failure who initiated peritoneal dialysis. Volume overload tended to improve over time after starting dialysis, but was at all times was higher in males vs. females and in patients with diabetes vs. those without. The study also revealed variations in practice of care across different geographic regions. This variation was associated with differences in degree of volume overload.

Individuals with kidney failure who are undergoing hemodialysis or peritoneal dialysis often experience fluid overload. To examine the implications of this condition, Wim Van Biesen, MD, PhD (University Hospital Ghent, in Belgium) and his colleagues designed a study to assess patients' health and fluid volume over time after initiating peritoneal dialysis. It's thought that actively managing volume overload may reduce the risk of technique failure (transfer from peritoneal dialysis to hemodialysis) and prolong patient survival.

In the study of 1,054 patients from 28 countries who were examined every 3 months, volume overload before the start of dialysis amounted to an average of 1.9 L and decreased to 1.2 L during the first year. After 3 years of follow-up, the average relative volume overload in patients was lower than at the start in participants from all regions except those of Latin American, where it increased. The investigators concluded that volume overload is already present before the start of dialysis, and it tends to improve over the first 6 months and stabilize afterwards.

At all time points, males and participants with diabetes were at a higher risk of experiencing volume overload. Also, volume overload was associated with a higher risk

of premature death. The study revealed different treatment practices to address volume overload across dialysis centres and regions.

“We intended to associate practices of peritoneal dialysis—use of hypertonic exchanges, use of automated peritoneal dialysis vs. continuous ambulatory peritoneal dialysis, use of icodextrin, and use of diuretics—with technique failure. Our main finding is that the association between technique failure and fluid overload is dependent upon centre size and thus presumably experience within the treating centre,” said Dr. Van Biesen.

In an accompanying Patient Voice editorial, Shari Gilford shared her experience of peritoneal dialysis, both ambulatory and automated, for 7 years. She also questioned why patients in Latin America had a different outcome than those from other regions.

“If there are factors other than dialysate type, dialysate concentrate, or diet which make it more difficult for patients to control their volume overload, patients need to be made aware of this,” she wrote. “Based on my own experience [in hot vs. cold seasons], I wonder if the year-round hotter climate of Latin America, as opposed to most other regions in the study which have cold seasons, could have been a factor for fluid overload leading to increased mortality. Continued study of this variable might improve outcomes for peritoneal dialysis patients who live in warmer climes.”

Study co-authors include Christian Verger, MD, James Heaf, MD, PhD, François Vrtovnik, MD, PhD, Zita Leme Britto, MD, Jun-Young Do, MD, PhD, Mario Prieto Velasco, MD, PHD, Juan Pérez Martínez, MD, PhD, Carlo Crepaldi, MD, PhD, Tatiana De los Ríos, Adelheid Gauly, PhD, Katharina Ihle, and Claudio Ronco, MD, PhD, for the IPOD-PD Study Group.

Disclosures: The study was sponsored by Fresenius Medical Care, the producer of the BCM® device that was used to assess fluid status and nutritional status. Tatiana De los Ríos, Adelheid Gauly, and Katharina Ihle are employees of Fresenius Medical Care. The other authors did not report any financial conflict of interest.

The article, entitled “Evolution Over Time of Hydration Status and PD Related Practice Patterns in an Incident Peritoneal Dialysis Patient Cohort,” will appear online at <http://cjasn.asnjournals.org/> on May 23, 2019, doi: 10.2215/CJN.11590918.

The editorial, entitled “Managing Fluid Control in the Peritoneal Dialysis Population,” will appear online at <http://cjasn.asnjournals.org/> on May 23, 2019.

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