2019 ANNA NATIONAL SYMPOSIUM
APRIL 14-17 ~ HILTON ANATOLE, DALLAS, TX

Continuous Veno-venous Hemodialysis as a Replacement Treatment during Water Emergencies

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On April 23, 2018, the municipal water supply in Danbury, Connecticut, was disrupted when a water main broke. The water main directly fed the hospital that provided inpatient services for dialysis patients. Without potable water, DaVita® Hospital Services Group (HSG) and the hospital facilities team were challenged with implementing a safe hemodialysis alternative that was timely, effective and minimized impact to hospital operations.

HSG and the hospital facilities team considered the following three options and associated challenges:

1. Transfer all hospitalized patients requiring hemodialysis to a chronic dialysis facility, which would strain facility resources, require ambulance transportation and require hospital nurse monitoring.
2. Transferring these patients to a sister hospital an hour away, which would remove the patients from local family and physicians.
3. Provide onsite continuous veno-venous hemodialysis (CVVHD) with the Prismaflex©, which would involve moving equipment and supplies from another location, mobilizing personnel, and training onsite nurses.

The teams decided to pursue the third option and provide CVVHD to their hospitalized patients requiring hemodialysis.

Providing emergency CVVHD required all hands on deck. Stat chemistries were taken pre-treatment to establish a baseline, then repeated halfway through the treatment and again post-treatment to evaluate for any rapid depletion of serum potassium and to identify patient safety concerns. A review of every treatment on the second treatment day indicated that all fluid removal goals had been achieved with no complications over both days. BUN clearances and chemistry improved for every patient. No hypotensive events occurred. Most importantly, patients reported that they felt great more than one time.

With this approach, patients were able to remain at their hospital of choice under the care of familiar physicians. Clinical results were on par with hemodialysis efficacy, no adverse events associated with CVVHD were noted, and even the most critical patients remained stable without hemodynamic changes. The results of this approach indicate that use of the Prismaflex for hemodialysis in a water emergency is safe, cost effective, delivers a complete treatment, and supports patient satisfaction.

Abstract selected for presentation at ANNA National Symposium, Dallas, 2019