

EPO Reduction Using Dual-Stage Ultrafilters (DSU)

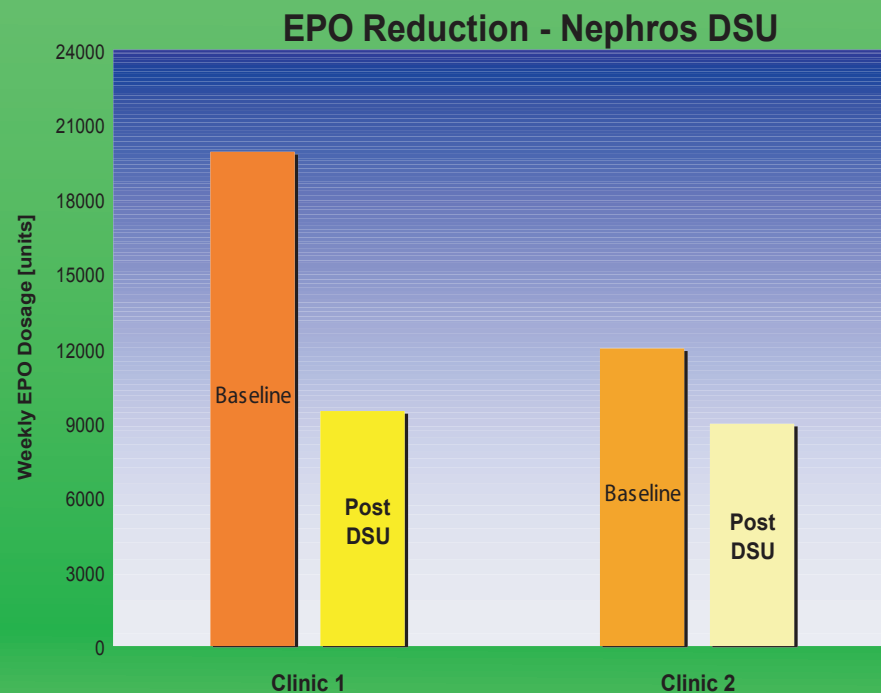
Nephros Dual-Stage Ultrafilters (DSU) were installed in two independent dialysis clinics. In both cases the ultrafilters were installed at the dialysis stations near the wall boxes where the central RO loop feeds the station. In Clinic 1, DSU's were installed on a limited number of stations and only on the RO water line leading to the dialysis machine. In Clinic 2, DSU's were installed at all the dialysis stations on both the incoming RO water and central bicarbonate supply lines. EPO usage for patients treated at these treatment stations using the Nephros DSU ultrafilters was monitored at both clinic sites.



METHOD

At Clinic 1, the study was completed by 20 patients. EPO usage for the 3 months prior to installation of the DSU was examined and the stable weekly maintenance dose that maintained hemoglobin levels between 10 and 12 was recorded as the “Baseline” EPO dose. After the DSU ultrafilters were installed, patients were monitored for 6 months. Hemoglobin levels were maintained between 10 and 12 g/dL. Near the end of the 6 months, stable weekly EPO dosages were recorded as the “Post-DSU” level.

At Clinic 2, the study was completed by 64 patients. The weekly EPO usage required to maintain a hemoglobin level between 10 and 13 g/dL was recorded for 12 weeks prior to DSU installation “Baseline”. After the DSU installation and a 4 week wash-in period the weekly EPO usage required to maintain a hemoglobin level between 10 and 13 mg/dL was recorded for 10 weeks “Post-DSU”. The average weekly EPO dose was calculated from the entire amount of EPO used during each respective time period.



RESULTS

The average weekly EPO usage values (95% confidence interval) dropped significantly following installation of the DSU's. In Clinic 1, the Post-DSU average of 9442 units (11259 to 7625) was 52% lower than the Baseline average of 19863 units (25365 to 14361) which was statistically significant ($p = 0.0013$).

Similarly in Clinic 2, the Post-DSU weekly average EPO of 8923 units (10320 to 7526) was 25% lower than the Baseline average of 11998 units (13542 to 10454). This difference was also statistically significant ($p = 0.0002$).

CONCLUSION

The use of ultrapure water provided by the Nephros DSU can result in a significant EPO reduction: up to 50% after a long term usage period (6 months) and even up to 25% after a short term usage period (1 month).