ICU
MANAGEMENT & PRACTICE

Fresenius Study Confirms Anaemia Therapy Software Boosts Clinical Outcomes in Haemodialysis Patients

- This randomised controlled study demonstrates that patients achieved a higher percentage of target haemoglobin levels
- Patients receiving anaemia management assistance via the software tools saw a 25% reduction in erythropoiesis-stimulating agent (ESA) usage
- The software's physiology-based model and predictive controller were associated with improved haemoglobin fluctuations and variability, offering a higher likelihood of more stable haemoglobin levels compared to standard care protocols

Fresenius Medical Care (FME), the world's leading provider of products and services for individuals with renal diseases, today announced innovative results from a multicenter, randomised controlled trial in the United States that highlights the potential benefits of personalised anaemia therapy for patients undergoing haemodialysis. The study, "Effects of Individualized Anemia Therapy on Hemoglobin Stability ," published in the *Clinical Journal of the American Society of Nephrology (CJASN)* , demonstrates that the use the anaemia therapy assistance software, attained improved haemoglobin stability and reduced the use of erythropoiesis-stimulating agents (ESAs) among haemodialysis patients participating in the study[1].

This innovative approach, which is part of the company's ongoing commitment to improve patient outcomes, is powered by a physiology-driven mathematical model designed to deliver personalised treatment recommendations. The results showed a 25% improvement in haemoglobin target attainment for patients receiving individualised therapy compared to standard care. The findings are significant because maintaining target haemoglobin levels with less variability in patients can help reduce the risk of developing cardiovascular problems.

"This study exemplifies how data-driven insights can lead to more personalised treatments," said Dr. Frank Maddux, MD, Chief Global Medical Officer of Fresenius Medical Care. "By integrating cuttingedge computational techniques, we are paving the way for more precise, patient-centered care, which not only improves clinical outcomes but also enhances quality of life for people on dialysis. Our commitment is to continue developing innovative solutions that transform kidney care worldwide."

The study, conducted by Dr Doris H. Fuertinger and colleagues, enrolled 96 patients from five Fresenius Kidney Care clinics across the United States. Patients were randomised into two groups: one receiving personalised anaemia treatment recommendations from the software, and the other following standard protocols. Over a 26-week period, patients in the personalised therapy group achieved greater haemoglobin stability, experienced fewer fluctuations, and required significantly less ESA, reducing their dose on average by 25%. Additional key findings suggest haemoglobin variability was significantly lower in the personalised therapy group, contributing to more stable patient outcomes.

"This prospective, randomised controlled study highlights the value of physiological models and computer-aided individualisation of therapy to improve clinical outcomes for people on dialysis," said Dr Fuertinger, Head of Computational Medicine, Fresenius Medical Care. "By harnessing the power of these technologies, we are able to provide clinicians with actionable insights that may enable more precise and efficient therapy management."

The study underscores FME's vision of transforming renal care by designing cloud-based technologies and predictive analytics that can potentially integrate into daily clinical practice. As healthcare moves toward greater personalisation, the company is committed to utilising these advanced tools to optimise patient care and support clinicians in making data-driven decisions.

"We are proud to be at the forefront of this important research by developing novel approaches to treat end-stage renal failure," said

Dr Katarzyna Mazur-Hofsaess, member of the Management Board of Fresenius Medical Care and responsible for the segment Care Enablement. “Our commitment to new technology continues to support the individualisation of care for people living with kidney disease.”

Source & Image Credit: Fresenius Medical Care

[1] Fuertinger, Doris H., et al. "Effects of Individualized Anemia Therapy on Clinical Outcomes in Patients Undergoing Hemodialysis." Clinical Journal of the American Society of Nephrology, vol. 19, no. 9, 2024, pp. 1100-1110.

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