P28 Health status in kidney replacement therapy: A subgroup analysis of the CONVINCE randomized controlled trial

Krister Cromm[1,2], Ngoc Pham[1], Giovanni Strippoli[3], Claudia Barth[4], Be Canaud[5], Andrew Davenport[6], Jörgen Hegbrant[7], Mark Woodward[8], Michiel Bots[9], Peter Blankestijn[9], Felix Fischer[2], Matthias Rose[2]

[1]Fresenius Medical Care, Bad Homburg, Germany. [2]Charité, Berlin, Germany. [3]University of Bari, Bari, Italy. [4]B Braun Avitum AG, Melsungen, Germany. [5]Université de Montpellier, Montpellier, France. [6]UCL Department of Renal Medicine, London, United Kingdom. [7]Lund University, Lund, Sweden. [8]The George Institute for Global Health, Sydney, Australia. [9]UMC Utrecht, Utrecht, Netherlands

Objective: The CONVINCE randomized controlled trial, conducted in end-stage kidney disease (ESKD) hemodialysis patients, found a slower decline in patient-reported health status for those receiving hemodiafiltration versus high-flux hemodialysis, particular improvements were observed in physical and cognitive function, pain interference and social participation. There is clinical interest in whether these benefits of hemodiafiltration are modified by age, sex, time on dialysis, diabetes and cardiovascular disease, and type of vascular access.

Methods: The CONVINCE trial data was used to perform prespecified subgroup analyses looking at the comparative effects of hemodiafiltration versus hemodialysis on quality of life domains with PROMIS® short forms (Physical Function, Fatigue, Pain Interference, Sleep Disturbance, Anxiety, Cognitive Function, Depression, Ability to Participate in Social Roles and Activities) by the following subgroups: age (>65, 50-65, <50 years), sex (male/female), time on dialysis (>5, 2-5, <2 years), diabetes (yes/no) and cardiovascular disease (yes/no), and type of vascular access (catheter/graft vs arteriovenous fistula). Patient-reported outcome data were collected every 3 months over the course of the trial. We tested subgroup interactions in a longitudinal linear mixed model.

Results: From 1360 randomized patients, data were available for 1211 patients (89%). The effect of hemodiafiltration on sleep disturbance was significantly better for patients with arteriovenous fistula as compared to those with catheters/grafts (p=0.026). Patients who had been on dialysis for more than 5 years had better physical function with hemodiafiltration (p = 0.028). Treatment with hemodiafiltration had a stronger effect on pain interference for those who were <50 years (p =0.044) and the effects on cognitive function were better in those who had no history of cardiovascular disease (p = 0.048) (see Figure 1).

Conclusions: The CONVINCE trial found significant effects of hemodiafiltration on specific domains of health status in ESKD patients compared to high-flux hemodialysis. While these benefits varied slightly between subgroups, possibly due to multiple statistical comparisons or underpowered sample, they may reflect meaningful differences worthy of further investigation. Integrating PROMIS in future trials and clinical routine care will help clarify and expand these findings.