Abstract citation ID: gfae069.076

#2502

The CONVINCE randomized trial found positive effects of hemodiafiltration on quality of life in patients with kidney disease on dialysis

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Background and Aims: Health-related quality of life of ESKD patients is negatively affected by disease-specific symptoms and can additionally be impaired by renal replacement therapy. Previous studies indicate that hemodiafiltration (HDF) may have a positive impact on the patients' perceived health status compared to hemodialysis (HD), but overall evidence has been inconclusive. We investigated whether HDF is beneficial with respect to the patients' perceived health status in the CONVINCE Trial.

Method: The CONVINCE Trial is an international multi-center, prospective, randomized, open label, controlled trial, comparing benefits and safety high-dose HDF versus high-flux HD. All-cause mortality was the primary outcome of the trial and a broad range of Patient-Reported Outcomes (PROs) were investigated as secondary outcomes. Eight generic health domains (Physical Function, Pain Intensity, Pain Interference, Fatigue, Sleep Disturbance, Depression, Anxiety, Ability to Participate in Social Roles and Activities) were assessed using the Patient-Reported Outcome Measurement Information System, PROMIS®-29 v2.0 profile, and an additional PROMIS short-form assessing Cognitive Function. PROs were collected every three months over the course of the study. As the perceived health status is likely related to mortality, we estimated the effect of HDF on PROs using a joint modelling approach to account for potential bias by selective dropout due to death.

Results: A total of n = 1 360 patients have been randomized to HD (n = 677) and HDF (n = 683). Both groups were comparable at baseline, with physical function (44.0 on the PROMIS T-score metric) considerably lower than the general population. Median follow-up was 30 months. We could obtain 84% of the planned PRO follow-up assessments on average. Overall, we found a steady decline in Health-Related Quality of Life (HRQoL) over the observation period; with statistically significant group differences for Physical Function ($P = .047$), Cognitive Function ($P = .049$), Pain Interference ($P = .027$) and the Ability to Participate in Social Roles and Activities ($P = .023$), all favouring HDF over HD.

Conclusion: Within the CONVINCE trial we have applied a comprehensive assessment of PROs comparing HDF with HD. Along with a beneficial effect on survival rates, we observed a slower decline in patients perceived health status when treated with HDF compared to HD. CONVINCE provides further evidence that HDF is beneficial in terms of quality of life.