KSN 2021
FULLY VIRTUAL MEETING
September 02 (Thu) - 05 (Sun)

Abstract Submission No. : 2443

Dialysis SBP is an important BP control marker in hemodialysis; a study of after-dialysis ABPM

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Objectives: Patients on hemodialysis have hypertension and cardiovascular complication. Blood pressure control is essential, but too strict control develops intra-dialytic hypotension.
We investigated the difference of blood pressure during and after the dialysis treatment and compared with cardiovascular risk factors and complication.

Methods: 28 ESRD patients measured blood pressure during dialysis and applied ABPM after the dialysis. We evaluated all monthly routine laboratory parameters from Sep 2019 to Aug 2020, and investigated risk factors via medical record review. Blood pressure was compared during and after dialysis treatment, and laboratory parameters were presented as average of 12 months which compared means by risk factors such as diabetes, coronary disease, and LV mass index via independent t test. Pearson's correlation was used for comparing correlation among blood pressure, cardiovascular risk factors and blood tests.

Results: Among the 28 patients 11 were male and 17 were female, and age was 57.4 years old. 16 (57.1%) were diabetes, 5 (17.9%) had coronary artery disease, only 1 (3.6%) had cerebrovascular disease. Average dialysis SBP and DBP were 142.26 ± 20.64 and 74.59 ±12.93 mmHg, and average after-dialysis blood pressures by ABPM were 156.05 ± 24.05 and 86.82 ± 8.98 mmHg (p<0.001) (figure. 1 A and B). As higher dialysis systolic pressure, during and after dialysis BP, PP, change of SBP were higher, and there was no correlation between blood pressure and laboratory parameters. The patients with diabetes showed higher dialysis and after-dialysis pulse pressure (75.98 ±18.23 vs. 56.58 ± 14.53, p=0.005 and 76.84 ± 19.07 vs. 59.08 ± 17.79, p=0.019, respectively).

Conclusions: Hemodialysis patients showed markedly higher SBP and DBP after dialysis, and SBP is more important predictor of BP and PP monitoring. These results could recommend more intensive BP control during hemodialysis treatment and after-dialysis at the outside of the clinic.

Figure 1A. BP of morning HD

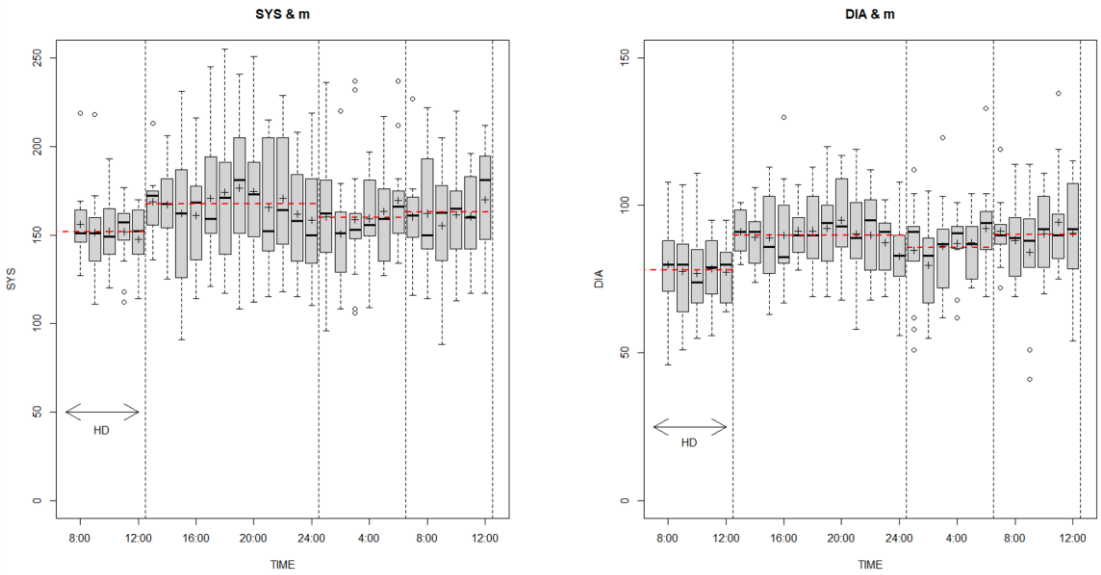

Figure 1B. BP of afternoon HD