

MO102

LUNG ULTRASOUND-GUIDED DRY-WEIGHT REDUCTION DECREASES AMBULATORY BLOOD PRESSURE LEVELS IN HYPERTENSIVE HEMODIALYSIS PATIENTS: LONG-TERM ANALYSIS OF A LUST SUB-STUDY*

Charalampos Loutradis¹, Pantelis Sarafidis¹, Robert Ekart², Ioannis Tsouchnikas¹, Christodoulos Papadopoulos³, Vasileios Kamperidis⁴, Maria Eleni Alexandrou¹, Charles Ferro⁵, Aikaterini Papagianni¹, Gérard London⁶, Francesca Mallamaci⁷, Carmine Zoccali⁷

¹Hippokraton Hospital, Aristotle University of Thessaloniki, Department of Nephrology, Thessaloniki, Greece, ²University Clinical Centre Maribor, Clinic for Internal Medicine, Department of Nephrology, Maribor, Slovenia, ³Hippokraton Hospital, Aristotle University of Thessaloniki, 3rd Department of Cardiology, Thessaloniki, Greece, ⁴AHEPA Hospital, Aristotle University of Thessaloniki, 1st Department of Cardiology, Thessaloniki, Greece, ⁵University Hospitals Birmingham NHS Foundation Trust, Department of Renal Medicine, Birmingham, United Kingdom, ⁶Manhes Hospital and FCRIN INI-CRCTC, Manhes, France and ⁷CNR-IFC Clinical Epidemiology of Renal Diseases and Hypertension, Reggio Calabria, Italy

BACKGROUND AND AIMS: Hypertension is highly prevalent and independently associated with adverse outcomes in patients undergoing hemodialysis. The main mechanism leading to BP elevation in these individuals is their inability to maintain water homeostasis. This study examines the long-term effects of dry-weight reduction with a standardized lung-ultrasound-guided strategy on ambulatory BP in hypertensive hemodialysis patients.

METHOD: This is the report of the 12-month trial phase of a randomized controlled trial in 71 clinically euvolemic, hemodialysis patients with hypertension. Patients were randomized (1:1 ratio) in the active group (23 male and 12 female), following dry-weight reduction guided by the total number of US-B lines prior to a mid-week dialysis session and the control group (24 male and 12 female), following standard-of-care treatment. A 48-hour ABPM was performed in all study participants at baseline and after 12 months.

RESULTS: During follow-up more patients in the active compared to control group had dry weight reduction (71.4% vs 22.2%; $p < 0.001$). US-B lines -4.83 ± 13.73 vs 5.53 ± 16.01 ; $p = 0.005$) and dry-weight (-1.68 ± 2.38 vs 0.54 ± 2.32 ; $p < 0.001$) decreased in the active and slightly increased in the control group. At 12 months, 48-hour SBP (136.19 ± 14.78 vs 130.31 ± 13.57 ; $p = 0.034$) and DBP (80.72 ± 9.83 vs 76.82 ± 8.97 ; $p = 0.008$) were lower compared to baseline in the active but similar in the control group. Changes in 48-hour SBP (-7.78 ± 13.29 vs -0.10 ± 14.75 ; $p = 0.021$) were significantly greater in the active compared to the control group. Comparisons for intradialytic, 44-hour, Day-1, Day-2 and day- and night-time BP were to the same direction. The proportion of patients experiencing at least one episode of intradialytic hypotension was numerically lower in the active group (71.4% vs 88.9%, $p = 0.065$).

CONCLUSION: A lung-ultrasound-guided strategy for dry-weight reduction can effectively and safely decrease ambulatory BP levels during a 12-month follow-up period. This method is a simple treatment approach to improve hypertension management in hemodialysis patients.