

## KSN 2017 Abstract

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**B-type natriuretic peptide is a good biomarker for the treatment of hypertension in children with end-stage renal disease on peritoneal dialysis.**

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**Objectives :** To evaluate the usefulness of serum B-type natriuretic peptide (BNP) level as a clinical biomarker of fluid retention and a target to control body weight for the treatment of hypertension in children on peritoneal dialysis.

**Methods :** We included 59 hypertensive patients with end-stage renal disease on peritoneal dialysis who were below 19 years old and have visited Asan Medical Center between February 2005 and February 2016 in this study. We reviewed the changes of body weight (BWt), blood pressure (BP) and serum BNP level between before and after the treatment of hypertension. Data were presented as mean±standard deviation (median, minimum ~ maximum). Paired t-test was used to evaluate the changes in BWt, BP and BNP. Linear regression analysis was applied for the correlation between the changes of BNP and BP.

**Results :** We evaluated 56 hypertensive events in 30 patients. Initial findings were as follows: BWt 30.5±22.4 (26.5, 3.0 ~ 93.5) kg, systolic BP (SBP) 153.3±21.5 (150, 110~241) mmHg, diastolic BP (DBP) 100.1±22.3, (99.5, 49 ~ 181) mmHg, BNP 3579.3±6328.9 (1198.5, 305.0 ~ 22028.0) pg/mL. Follow-up results were as follows: BWt 29.1±21.3 (25.0, 3.12 ~ 86) kg, SBP 116.4±17.8 (117.5, 82 ~ 150) mmHg, DBP 73.3±14.2 (75.0, 42.0 ~ 101.0) mmHg, BNP 63.5±49.2 (60.5, 2.0 ~ 261.) pg/mL. SBP (-23.1±13.8, -22.8, -46.9 ~ 22.5%, P<0.001), DBP (-24.1±19.2, -24.7, -55.6 ~ 23.2%, P<0.001) and BNP (-93.5±8.1, -96.7, -99.9 ~ -61.0%, P<0.001) dropped significantly after reduction of BWt (-4.8±4.7, -4.8, -18.7 ~ 5.6%, P<0.001). The amount of changes in BNP were significantly correlated with changes in SBP (adjusted R square = 0.221, P<0.001) and DBP (adjusted R square = 0.203, P < 0.001).

**Conclusions :** We should measure serum BNP in hypertensive patients on peritoneal dialysis and reduce body weight until serum BNP level becomes less than 200 pg/mL if possible.

**Keywords :** Dialysis, Hypertension, Children