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# 혈액투석 환자에서 copeptin과 NT-proBNP 사이에 연관성이 있는가?

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# Is There an Association Between Copeptin and NT-proBNP in Hemodialysis Patients?

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**Background:** Copeptin, precursor to vasopressin, is associated with body fluid volume and heart dysfunction. Therefore, this study was intended to investigate the level of copeptin and the relationships with fluid and heart dysfunction markers in hemodialysis patients.

**Mehtods:** This study included forty-one hemodialysis patients. At the time of visit for hemodialysis, laboratory data including NT-proBNP was collected and excessive body fluid (OH, overhydration, liter) was measured by bioimpedance spectrometry (BIS). In addition, E/Ea ratios were obtained by echocardiography for assessing left ventricular dysfunction (LVD).

**Results:** The mean concentration of pre-dialysis copeptin was 224.67±241.91 pg/ml. Pre-dialysis copeptin had positive correlation with pre-dialysis OH (r=0.314, p=0.046), but not with NT-proBNP (r=0.163, p=0.308) and E/Ea ratios (r=-0.023, p=0.888). Body fluid markers other than copeptin, such as NT-proBNP and pre-dialysis OH, E/Ea ratio, all showed significant correlation with each other. Based on previous reports, non-LVD and LVD groups were defined by a cut off value of NT-proBNP 5300 [pg/ml] (specificity 0.8, sensitivity 0.93). When comparing the non-LVD group with the LVD group (non-LVD vs. LVD), the results showed significant differences in pre-dialysis copeptin (141.33± 209.20 vs. 259.9±255.7 pg/ml, p=0.014), NT-proBNP (2294.70±1233.53 vs. 22826.85±11739.56 pg/ml, p=0.000), pre-dialysis OH (1.75±1.03 vs. 3.15±1.90 liters, p=0.023), E/Ea ratio (4.33±1.30 vs. 6.60±2.27, p=0.002), KtV (1.32± 0.13 vs. 1.47±0.25, p=0.014). In addition, the ROC curve for discriminating LVD from non-LVD showed that the AUC of pre-dialysis copeptin was 0.737 (p=0.023), and the cut-off value was 125.48 pg/ml (specificity 0.8, sensitivity 0.7).

**Conclusion:** The level of pre-dialysis copeptins was elevated in hemodialysis patients. In addition, copeptin was correlated with pre-dialysis volume status. However, copeptin did not show a significant relationships with NT-proBNP, E/Ea ratio. Finally, the patients with LVD showed higher level of pre-dialysis copeptins than the patients without LVD.

**Key Words:** 코펩틴, 비엔피, 혈액투석
Copeptin, NT_proBNP, Hemodialysis