DIALYSIS, CARDIOVASCULAR COMPLICATIONS - 1

SP492 IMPACT OF INTRADIALYTIC HYPOTENSION (IDH) DEFINITIONS ON THE FACTORS RELATED TO IDH

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Introduction and Aims: Intradialytic hypotension (IDH) is a serious complication in hemodialysis (HD) patients. Though the impact of IDH on patient prognosis was shown in past reports, its definition has not been established. In past reports that tried to identify factors related to IDH, various IDH definitions were used. Whether different definitions result in different factors related to IDH in one data set has not been well investigated. We aimed to determine factors related to IDH according to multiple definitions and differences among IDH definitions in one data set.

Methods: We analyzed 1,391 HD treatments of 107 patients (average age: 68.5 years, male: 61.7%, diabetes: 42.0%) who received at least 13 HD treatments in our hospital from January 2014 to December 2015 in the present study. Only 13 treatments for each patient were selected randomly to be analyzed. We adopted three definitions of IDH from past reports: 1) an absolute nadir sBP <90mmHg, 2) a decrease in mean arterial pressure (MAP) by 10 mmHg associated with clinical events or nursing interventions, 3) a decrease in sBP more than 30 mmHg. Evaluated candidates as factors related to IDH are age, number of depressors or vasopressors, ejection fraction, Cardio-Ankle Vascular Index (CAVI), ankle brachial index (ABI), cardio thoracic ratio (CTR), plasma human atrial natriuretic peptide level, intradialytic decrease in plasma volume (⊿BV), flow blood volume for hemodialysis, duration of one treatment, dry weight (DW), degree of dehydration, degree of dehydration per DW, predialytic sBP, predialytic MAP, and the presence or absence of diabetes. We analyzed the relation between each factor and IDH based on each definition by univariate analysis, and then performed multivariate logistic regression analysis using factors proved to be significantly associated by univariate analysis.

Results: By the first definition, IDH was independently related to CAVI [odds ratio (OR); 1.24, p=0.0206], CTR (OR; 1.18, p<0.0001), and predialytic sBP (OR; 0.95, p<0.0001). By the second, it was related to age (OR; 0.96, p=0.0006), CAVI (OR; 1.45, p<0.0001), CTR (OR; 1.11, p<0.0001), predialytic sBP (OR; 0.97, p<0.0001), ⊿BV (OR; 1.05, p=0.0289), degree of dehydration (OR; 1.50, p=0.0304), and diabetes (OR; 2.49, p<0.0006). By the third, it was related to age (OR; 1.02, p=0.0216), ABI (OR; 0.18, p=0.0013), number of depressors (OR; 0.60, p<0.0001), and predialytic sBP (OR; 1.03, p<0.0001).

Conclusions: Our study suggests that factors related to IDH are quite different according to its definition. A recent study also suggested that the associations of IDH definitions and mortality vary according to its definition (Flythe JE et al. J Am Soc Nephrol. 2015;26:724-34). To improve patient prognosis, we should adopt the IDH definition that most significantly affects it, and intervene in factors related to IDH based on it.