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Multilevel Regression Analysis about Factors Associated with Chronic Kidney Disease among Patients with Hypertension in Indonesia

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Objectives: Acute kidney disease (AKD) contributes to the burden of world disease as its prevalence continues to rise and occupies the second highest cost of health burden in Indonesia after heart disease. Hypertension is one of the dominant factors that cause chronic kidney disease. This study aimed to determine the prevalence and factors related to AKD in hypertension patients in Indonesia.

Methods: This is an observational analytic research with cross sectional approach. Data were analyzed using chi-square and apply multilevel regression to analyze hierarchical data. Hierarchical data are data where objects are clustered in their groups and for each of groups the variable(s) are set at different levels. It is common to analyze hierarchical data without examining individual's data membership which affects the accuracy of analysis' results. Multilevel regression analysis is a method that can be chosen to overcomes issues regarding hierarchical data.

Results: The prevalence of AKD in hypertension patients in Indonesia is 0.55%. There is a significant association between the variables of age category of 45-54 years and the age category 55-64 years, sex, and diabetes mellitus history and the incidence of AKD in hypertension patients in Indonesia.

Conclusions: Diabetes mellitus is the dominant variable that in the incidence Acute Kidney Disease (AKD) in hypertension patients in Indonesia.