

THE INCIDENCE OF INTRADIALYTIC HYPOTENSION UNDER DIFFERENT DIAGNOSTIC CRITERIA AND THE ASSOCIATION WITH MORTALITY



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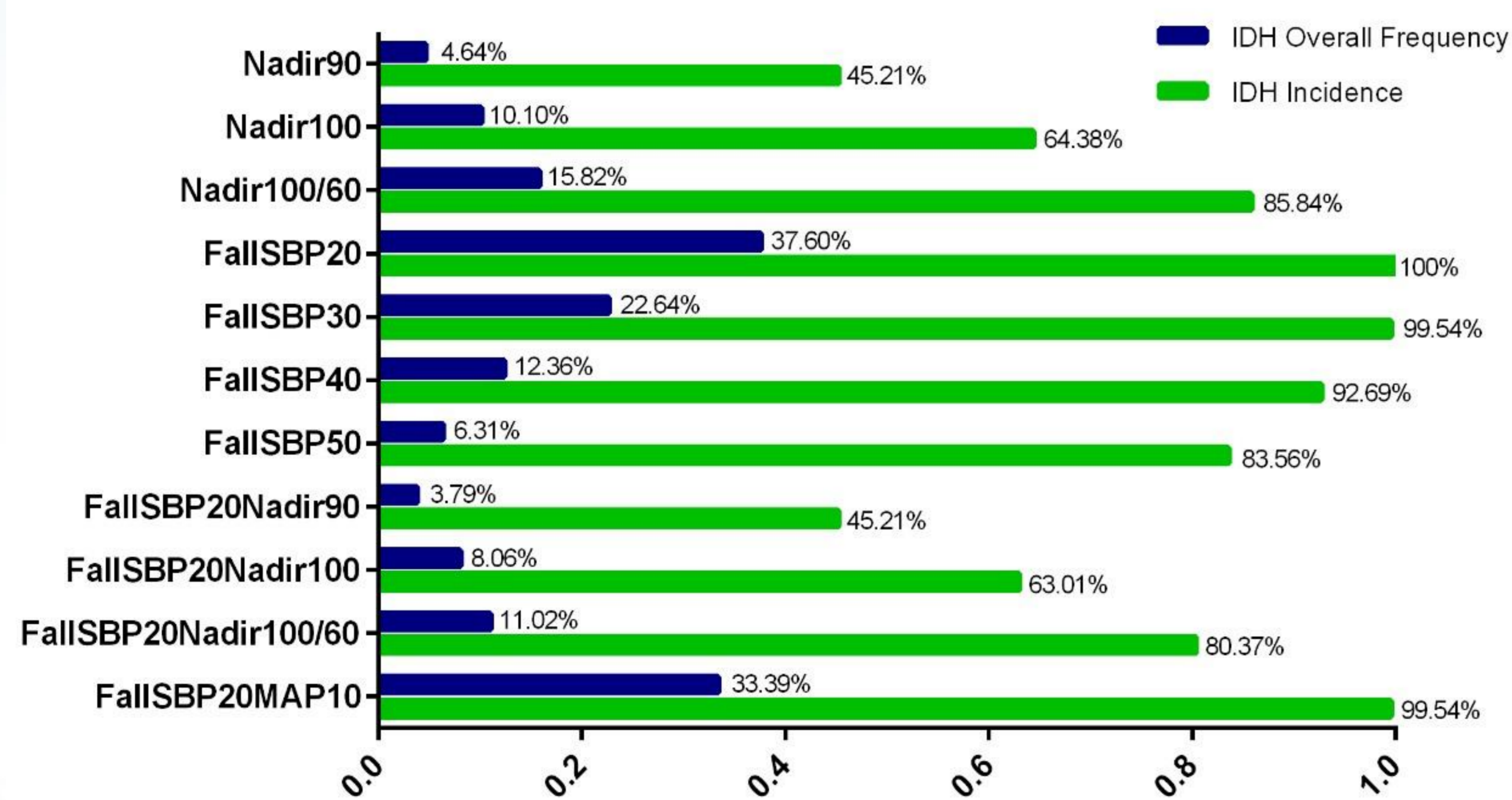
Aim: Intradialytic hypotension (IDH) is one of the common complications during hemodialysis, however its diagnostic criterias are highly controversial at present. In order to fully understand the prevalence of IDH in our center and figure out which diagnostic criteria is better for Chinese maintenance hemodialysis (MHD) patients, we choose several IDH definitions by reviewing published literatures and analyze their association with mortality.

Methods: The patients were recruited from Blood Purification Center of Ruijin Hospital undergoing hemodialysis during July 2012. Pre-, intra- and post-dialysis blood pressure were recorded. Patients' clinical characteristics, laboratory results and cardiac ultrasound results were collected. Based on several IDH definitions, we investigated the prevalence rate of IDH and its frequency among MHD patients. SPSS 23.0 was used to analyze data and conduct survival analysis.

Results: Totally 219 MHD patients underwent 16084 hemodialysis in 6 months. The prevalence rate, overall and individual frequency of IDH fluctuates between 45.21%-100%, 4.64%-37.60% and 0%-33.00% respectively. For every IDH criteria, the patients was divided into the group IDH(+) if they ever met the corresponding definition, otherwise the group IDH(-). Survival analysis found that IDH (the criteria of an absolute systolic blood pressure (SBP) < 90 mmHg or with a decrease of SBP ≥ 20 mmHg) can decrease the risk of patients' cardiovascular mortality but wasn't relevant to all-cause mortality. Further analysis showed these patients had better cardiac functions mainly reflecting in lower Pro-BNP (2880 vs 6909ng/L), lower prevalence rate of left ventricular hypertrophy (52% vs 83%) and higher left ventricular ejection fraction(65% vs 62.5%) than IDH(-) patients. No correlation was found between other IDH criteria and mortality.

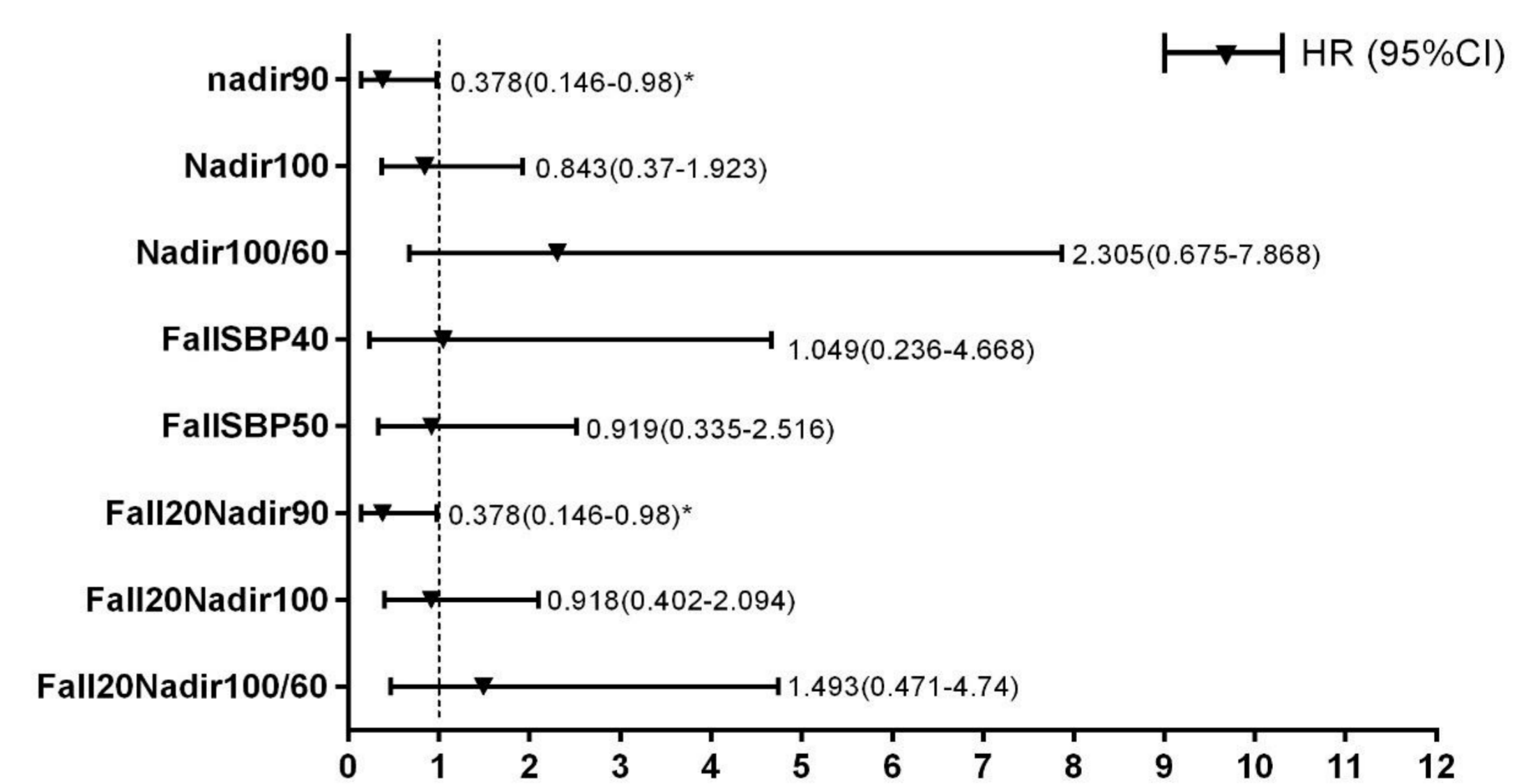
Conclusion: The prevalence rate, overall and individual IDH frequency of IDH are of high variability when diagnosed by different IDH criterias. All IDH episodes defined by our selected definitions are of no association with all-cause mortality. An absolute SBP < 90 mmHg or with a decrease of SBP ≥ 20 mmHg can decrease the risk of cardiovascular mortality due to their better cardiac function. Large scale researches should be conducted to find optimal IDH definition and explore the association of IDH and mortality.

Figure 1. the Prevalence of IDH Under Different IDH Difinitions

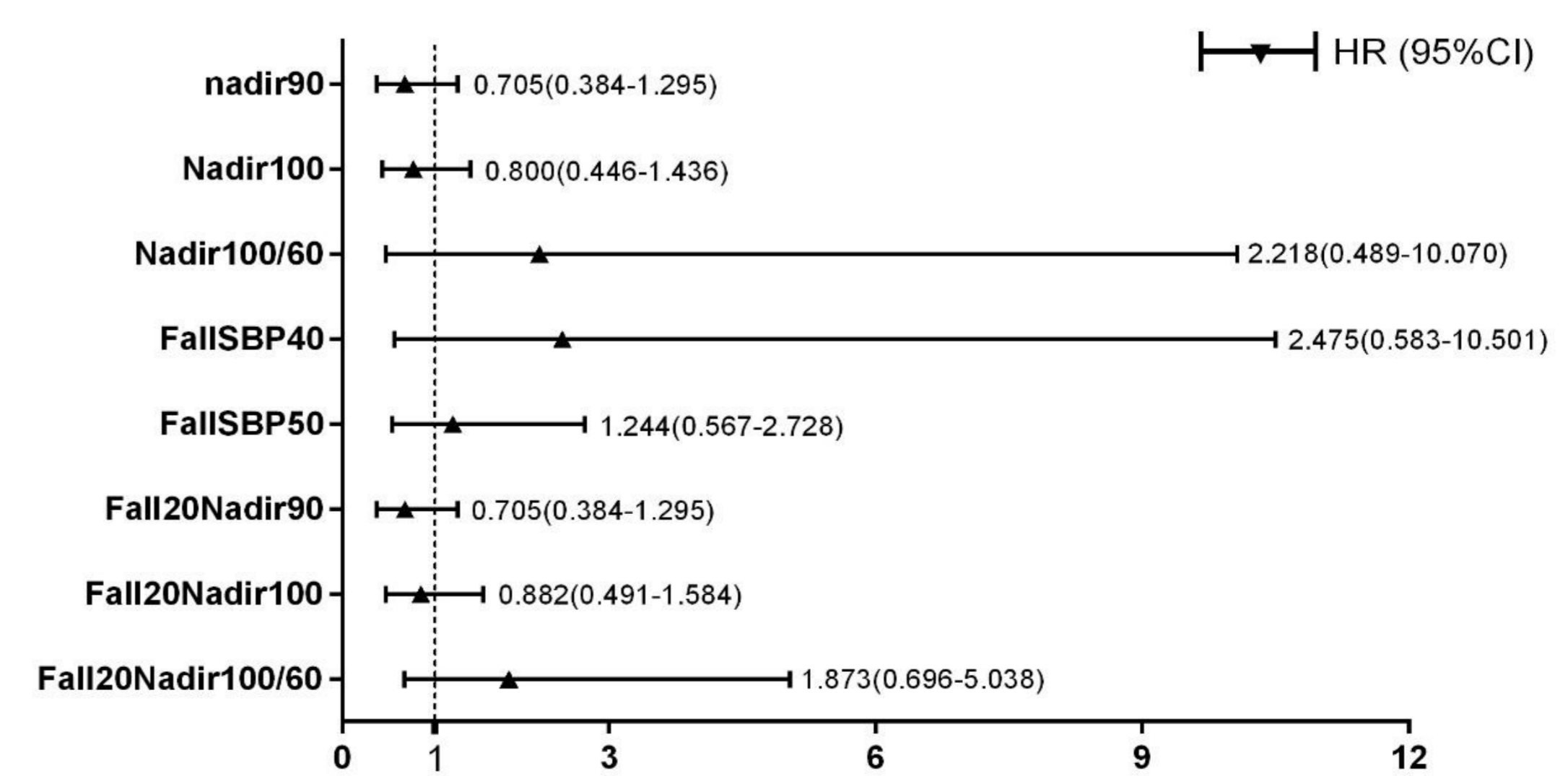


Nadir90: minimum intradialytic SBP<90mmHg; Nadir100: minimum intradialytic SBP (systolic blood pressure)<100mmHg; Nadir100/60: minimum intradialytic SBP (systolic blood pressure)<100mmHg or DBP (diastolic blood pressure)<60mmHg; FallSBP20: pre-dialysis SBP-minimum intradialytic SBP≥ 20mmHg; FallSBP30: pre-dialysis SBP-minimum intradialytic SBP≥30mmHg; FallSBP40: pre-dialysis SBP-minimum intradialytic SBP≥40mmHg; FallSBP50: pre-dialysis SBP-minimum intradialytic SBP≥50mmHg; FallSBP20Nadir90: pre-dialysis SBP-minimum intradialytic SBP≥ 20mmHg and minimum intradialytic SBP<90mmHg; FallSBP20Nadir100: pre-dialysis SBP-minimum intradialytic SBP≥20mmHg and minimum intradialytic SBP<100mmHg; FallSBP20Nadir100/60: pre-dialysis SBP-minimum intradialytic SB≥20mmHg and minimum intradialytic SBP<100/60mmHg; FallSBP20MAP10: pre-dialysis SBP-minimum intradialytic SBP≥ 20mmHg and pre-dialysis MAP (mean arterial pressure)-minimum intradialytic MAP≥10mmHg.

Figure 2. Adjusted association of IDH definitions with cardiovascular mortality



Adjusted association of IDH definitions with all-cause mortality



NUMBER

54TH ERA-EDTA CONGRESS
MADRID, SPAIN
JUNE 3RD-6TH 2017

