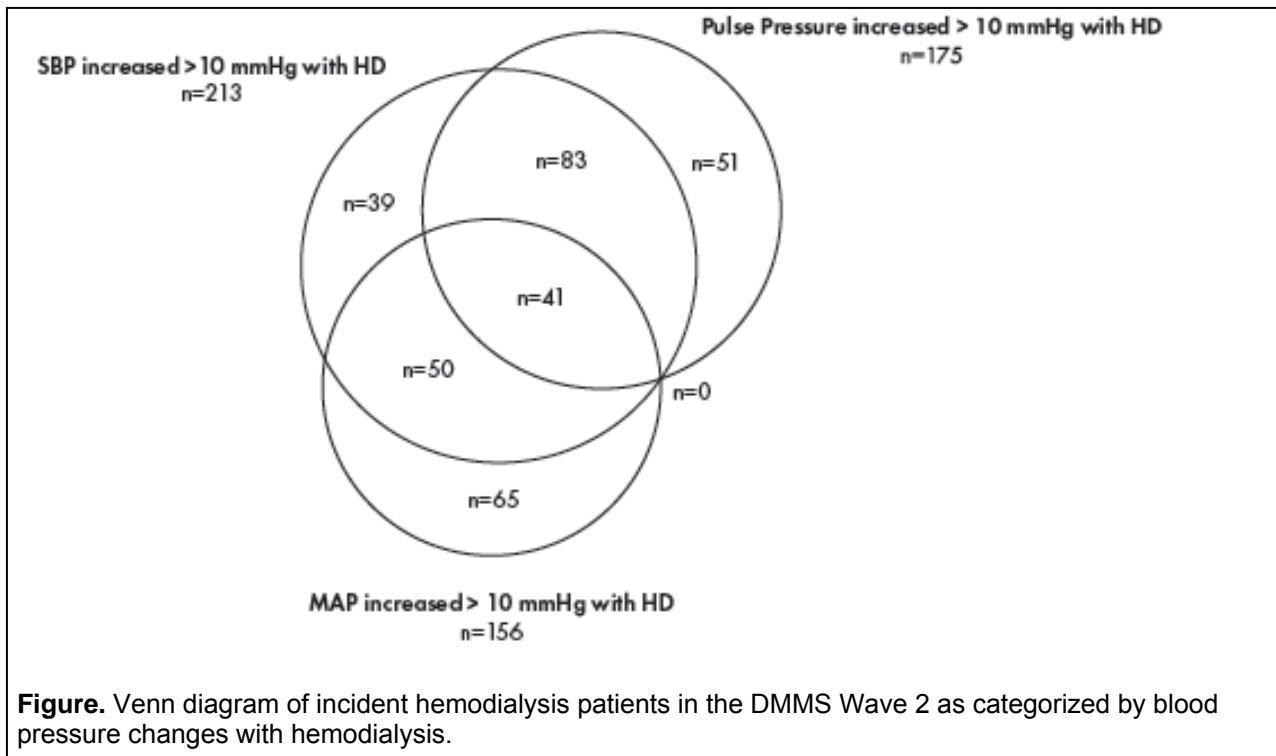


**SUPPLEMENTARY ITEM S1**

**Baseline characteristics among patients categorized by ΔPP and ΔMAP**

Of 1,748 patients, 175 (10.0%) exhibited > 10–mm Hg increases in PP (pulse pressure) during HD (hemodialysis). Of patients with > 10–mm Hg intradialytic increases in PP, 124/175 (71%) also had > 10–mm Hg increases in SBP (systolic blood pressure) during HD (see figure below). Baseline characteristics of patients categorized by changes in PP with HD were similar to those categorized by changes in SBP with HD, with a few exceptions. There was a higher presence of diabetes among patients whose PP decreased with HD and there was no difference in serum creatinine, phosphorus, calcium-phosphorus product, or in utilization of calcium channel blockers and nitrates between groups of patients categorized by changes in PP with HD.



As also shown by the figure, 156 patients (8.9%) exhibited > 10–mm Hg increases in MAP during HD and 91 (58.3%) of these patients also exhibited > 10–mm Hg increases in SBP during HD. Baseline characteristics of patients categorized by changes in MAP with HD were also similar

to those categorized by changes in SBP with HD. However, age, presence of congestive heart failure, and aspirin utilization were higher in patients with increased MAP during HD. Serum albumin, serum calcium, and  $\beta$ -blocker utilization were not significantly different between groups.

### **Mortality associated with $\Delta$ PP and $\Delta$ MAP**

#### *Unadjusted mortality associated with $\Delta$ PP and $\Delta$ MAP*

In unadjusted analyses, patients whose PP increased  $> 10$  mm Hg during HD had lower survival compared to patients whose BP was unchanged or decreased  $< 10$  mm Hg during HD (log rank  $P = 0.03$ ). When  $\Delta$ PP was modeled as a continuous variable, there was an 11% increased hazard ratio of mortality per 10-mm Hg increase in PP during HD (HR, 1.11; CI, 1.05-1.19;  $P < 0.001$ ). Trends were similar when patients were stratified by changes in MAP (mean arterial pressure) with HD (log rank  $P = 0.1$ ) and there was a 12% increased hazard ratio of mortality per 10-mm Hg increase in MAP during HD (HR, 1.12; CI, 1.03-1.21;  $P = 0.006$ ).

#### *Adjusted mortality associated with $\Delta$ PP and $\Delta$ MAP*

Intradialytic increases in PP and MAP were also associated with higher mortality in adjusted analyses. Every 10-mm Hg increase in PP during HD was independently associated with an 8% increased hazard ratio of death (HR, 1.08; CI, 1.02-1.16;  $P = 0.01$ ). The increased hazard ratio associated with increasing PP during HD was not modified by the addition of postdialysis PP to the final model (HR, 1.13 per 10-mm Hg increase in PP with HD; CI, 1.06-1.22;  $P < 0.001$ ). However, in models adjusted for predialysis PP, there was an interaction between  $\Delta$ PP and predialysis PP, therefore stratified analyses were performed. Similar to analyses presented in the main article, with  $\Delta$ SBP and predialysis SBP, the increased hazard of increasing  $\Delta$ PP was only significant among patients with predialysis PP  $< 50$  mm Hg (see Table).

Increasing MAP (per 10 mm Hg) during HD was associated with a nonsignificant 6% increased hazard ratio of death (HR, 1.06; CI, 0.97-1.15;  $P = 0.2$ ). With the addition of postdialysis

MAP to the final model, the association increasing MAP during HD and mortality became significant (HR, 1.15 per 10–mm Hg increase in MAP with HD; CI, 1.05-1.26;  $P = 0.003$ ). However, in models adjusted for predialysis MAP, there was a significant interaction between predialysis MAP and  $\Delta$ MAP, therefore analyses were performed across strata of predialysis MAP. In analyses stratified by predialysis MAP, the increased hazard associated with increasing  $\Delta$ MAP was only significant among patients with predialysis MAP < 90 mm Hg (see Table).

**Table.** Adjusted hazard ratio for mortality associated with  $\Delta$ PP across strata of predialysis PP and  $\Delta$ MAP across strata of predialysis MAP.

Variable	HR (95% CI)	P
Adjusted hazard* associated with $\Delta$ PP during dialysis, per 10–mm Hg increase across the following strata:		
Predialysis PP < 50 mm Hg	1.27 (1.04-1.54)	0.02
Predialysis PP 50-70 mm Hg	1.09 (0.96-1.23)	0.2
Predialysis PP $\geq$ 70 mm Hg	0.99 (0.91-1.08)	0.9
Adjusted hazard** associated with $\Delta$ MAP during dialysis, per 10–mm Hg increase across the following strata:		
Predialysis MAP < 90 mm Hg	1.29 (1.00-1.67)	0.05
Predialysis MAP 90-110 mm Hg	0.96 (0.85-1.08)	0.5
Predialysis MAP $\geq$ 110 mm Hg	0.92 (0.80-1.06)	0.9

\*Model also adjusted for age, body mass index < 26 kg/m<sup>2</sup>, interdialytic weight gain > 5%, predialysis PP, diabetes mellitus, hypertension, peripheral vascular disease, congestive heart disease, coronary artery disease, serum albumin, creatinine, phosphorus, and the use of nitrates.

\*\*Model also adjusted for age, body mass index < 26 kg/m<sup>2</sup>, interdialytic weight gain > 5%, predialysis MAP, diabetes mellitus, hypertension, peripheral vascular disease, congestive heart disease, coronary artery disease, serum albumin, creatinine, phosphorus, and the use of nitrates.

Abbreviations: PP, pulse pressure; MAP, mean arterial pressure.