INTRODUCTION AND AIMS: Central aortic pulse pressure (CAPP) can be assessed noninvasively based on radial tonometry and may potentially be a predictor of clinical outcome. This study examines the prognostic significance of CAPP in patients who are on chronic hemodialysis (HD).

METHODS: A total of 106 HD patients (mean age 63 ± 14.2 years, 61.3% men, 35.8% diabetics, 45.3% smokers) underwent applanation tonometry (SphygmoCor, Atcor, Australia). The primary endpoint was all-cause mortality. The patients were divided into two groups according to the median value of the CAPP (50 mmHg) - the lower and higher CAPP group. Kaplan-Meier survival curves and a Cox regression model were used in statistical analyses. Patients were observed from the date of the CAPP measurement until their death or for a maximum time of up to 2,234 days or 6.1 years (with a mean time of 1,183 days or 3.2 years).

RESULTS: CAPP values in all patients were 20-112 mmHg (mean 52.8 ± 21.3 mmHg). During the follow-up period, 12 (16.4%) patients in the lower CAPP group and 24 (46.4%) patients in the higher CAPP group died. A Kaplan-Meier curve (Figure 1) showed that the survival rate in the higher CAPP group was significantly lower than that in the lower CAPP group (Log Rank test: P < 0.011). In a Cox regression model, which included CAPP, dialysis vintage, smoking, diabetes, hemoglobin, cholesterol, C-reactive protein, albumin, and iPTH, only CAPP (P < 0.002) turned out to be an independent predictor of death.

CONCLUSIONS: Higher CAPP is associated with increased all-cause mortality in HD patients.