Impacts of echocardiography-defined pulmonary hypertension on clinical outcome in patients with multiple myeloma

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Citation:
Background: Pulmonary hypertension (PH) is a rarely reported complication of multiple myeloma (MM). PH of MM is usually mild to moderate and can be secondary to a variety of conditions, including left ventricular dysfunction, diastolic dysfunction, chronic heart failure, treatment-related toxicity, thrombophilic condition and precapillary involvement. However, only few reports regarding PH in MM incidence and prognosis exist up to now.

Purpose: The purpose of this study was to investigate the risk factors of transthoracic echocardiography-defined PH and its impact on clinical outcome in patients with MM.

Methods: A total of 277 MM patients was included and divided into 2 groups?those non-pulmonary hypertension (PH) or those with PH, based on the results of the transthoracic echocardiography (TTE); PH group (n=143, 60.9 ± 9.2 years, 68 males) versus non-PH group (n=134, 55.9 ± 11.5 years, 72 males). We analyzed propensity score matching and multiple imputation method were used to deal with the missing data in echocardiographic characteristics.

Results: During the follow-up period (median 618 days), all-cause death occurred in 79 (28.5%) patients and 41 patients (14.8%) died from cardiovascular causes (including acute decompensated heart failure, fatal MI, sudden cardiac arrest). In the Kaplan-Meier survival analysis of crude population and propensity-matched population, cumulative overall survival and cardiovascular death (CVD)-free survival were significantly lower in the PH group than in the non-PH group (p<0.001). In propensity-matched population, estimated pulmonary artery pressure > 35mmHg in TTE, congestive heart failure, and DM were significant independent predictors of all-cause death.

Conclusion: This study demonstrates that the presence of PH, congestive heart failure, and DM is an independent prognostic factor for all-cause death in MM patients with MM. These results highlight the risk associated cardiovascular disease in MM patients and emphasize that management strategies that prevent deterioration of cardiac function are essential.
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