

Symptoms associated with premature ventricular contractions: possible role of modifying clinical factors

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Introduction: Frequent premature ventricular contractions (PVC)^{1,2} as well as PVC-related symptoms³ have been associated with the development of PVC-induced cardiomyopathy. The role of clinical factors that may modify both the presence of PVC-related symptoms and occurrence of PVC have not been thoroughly explored.

Patients and Methods: Baseline characteristics, cardiovascular medication, exposure to external triggers, presence of PVC-related symptoms, and PVC occurrence in 3-hour daily intervals were collected for 447 patients who consecutively underwent continuous 24-hour Holter monitoring. The presence of PVC-related symptoms included presence of irregular or skipped heartbeats, palpitations, chest discomfort, pain, pressure or thrill, or shortness of breath. The occurrence of episodes of PVC in 3-hour periods was expressed as a percentage of all episodes recorded during the Holter monitoring.

Results: In total, 241 (53.9%) patients reported some of the PVC-related symptoms. A significant daily variation in the occurrence of PVC with the peak between 9 and 18 hours were observed in both groups of patients according to the presence of symptoms ($p < 0.0001$ in both groups). There was no significant difference in the overall daily PVC occurrence between the groups ($p = 0.18$). In the multivariate analysis, women ($p = 0.01$), patients over the 65 years age ($p = 0.004$), those with hypercholesterolemia ($p = 0.045$) or without a statin medication ($p = 0.03$) were more likely to report symptoms. In symptomatic patients, hypercholesterolemia ($p = 0.03$) and emotional upset ($p = 0.002$) were the only independent predictors of PVC, whereas in asymptomatic patients the predictors were female sex ($p = 0.03$), previous myocardial infarction ($p = 0.04$), the absence of a β -blocker ($p = 0.006$) or anxiolytic ($p = 0.001$), physical activity ($p = 0.02$) and emotional upset ($p < 0.0001$).

Conclusions: Several clinical factors and drug therapies may modify the presence of symptoms in patients with PVC and make the reaching of an accurate diagnosis more difficult. Patients with and without symptoms somewhat differ in their susceptibility to PVC occurrence. Future research should differentiate potential prognostic qualities of PVC-related symptoms to provide risk stratification for PVC-induced cardiomyopathy.

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LITERATURE

- Sadron Blaye-Felice M, Hamon D, Sacher F, Pascale P, Rollin A, Duparc A, et al. Premature ventricular contraction-induced cardiomyopathy: Related clinical and electrophysiologic parameters. *Heart Rhythm.* 2016 Jan;13(1):103-10. <https://doi.org/10.1016/j.hrthm.2015.08.025>
- Park KM, Im SJ, Park SJ, Kim JS, On YK. Risk factor algorithm used to predict frequent premature ventricular contraction-induced cardiomyopathy. *Int J Cardiol.* 2017 Apr 15;233:37-42. <https://doi.org/10.1016/j.ijcard.2017.02.007>
- Yokokawa M, Kim HM, Good E, Chugh A, Pelosi F Jr, Alguire C, et al. Relation of symptoms and symptom duration to premature ventricular complex-induced cardiomyopathy. *Heart Rhythm.* 2012 Jan;9(1):92-5. <https://doi.org/10.1016/j.hrthm.2011.08.015>