Heart rate deceleration runs for postinfarction risk prediction.

Abstract:
A method for counting episodes of uninterrupted beat-to-beat heart rate decelerations was developed. The method was set up and evaluated using 24-hour electrocardiogram Holter recordings of 1455 (training sample) and 946 (validation sample) postinfarction patients. During a median follow-up of 24 months, 70, 46, and 19 patients of the training sample suffered from total, cardiac, and sudden cardiac mortality, respectively. In the validation sample, these numbers were 39, 25, and 15. Episodes of consecutive beat-to-beat heart rate decelerations (deceleration runs [DRs]) were characterized by their length. Deceleration runs of 2 to 10 cycles were significantly less frequent in nonsurvivors. Multivariate model of DRs of 2, 4, and 8 cycles identified low-, intermediate-, and high-risk groups. In these groups of the training sample, the total mortalities were 1.8%, 6.1%, and 24%, respectively. In the validation sample, these numbers were 1.8%, 4.1%, and 21.9%. Infrequent DRs during 24-hour Holter indicate high risk of postinfarction mortality.