INTRODUCTION: The prognostic value of heart rate turbulence for predicting mortality after acute myocardial infarction is well established. This study investigates a new measure of heart rate turbulence, termed turbulence dynamics, which quantifies the relationship between turbulence slope and underlying heart rate (HR(VPC)).

METHODS: Six hundred eight patients participating in the European Myocardial Infarction Amiodarone Trial had $\geq$25 ventricular premature complexes/24 h. During a follow-up period of 21 months (median), 120 patients died. Turbulence dynamics was assessed as the slope of the regression line between turbulence slope and HR(VPC). Survival analyses included age, history of previous myocardial infarction, presence of diabetes mellitus, mean normal-to-normal interval, heart rate variability index, presence of non-sustained ventricular tachycardia, left ventricular ejection fraction, turbulence onset and turbulence slope. All risk predictors were dichotomized at pre-defined cut-off points, turbulence dynamics was dichotomized at the median. Primary endpoint of the study was death of any cause. RESULTS: In most patients, turbulence slope was inversely correlated to HR(VPC). Univariately, turbulence dynamics was the second strongest risk predictor of mortality (relative risk 2.4 (95% confidence interval 1.6-3.6), p<0.001). Multivariately, turbulence dynamics...
was the third strongest risk predictor (1.7 (1.1-2.7, p<0.01)). CONCLUSION: In the patient population studied, turbulence dynamics was an independent predictor of mortality. The results indicate that in addition to the overall level of autonomic function the loss of autonomic adaptability contributes to prognosis.

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