

 [Print this Page for Your Records](#) [Close Window](#)**Presentation** 882-5**Number:****Abstract** Heart Rate Turbulence: A Useful Noninvasive Risk Predictor in Patients With Myotonic Dystrophy Type 1**Title:****Presentation** Wednesday, Mar 09, 2005, 11:00 AM -11:15 AM**Start/End****Time:****Topic:** ECG/Ambulatory Monitoring Signal Averaging**Author** Michela Casella, Antonio Dello Russo, Loredana Messano, Sergio Valsecchi, Alfonso Sestito, Gemma Pelargonio, Giuseppe De Martino, Manuela Pace, Tommaso Sanna, Maria Lucia Narducci, Gianluigi Bencardino, Fortunato Mangiola, Gaetano Antonio Lanza, Paolo Zecchi, Fulvio Bellocchi, Catholic University, Rome, Italy, Centre for Neuromuscular Diseases, Rome, Italy**Background.** Myotonic Dystrophy type 1 (DM1) is a multisystemic disorder with cardiac complications and life-threatening arrhythmias. Heart rate turbulence (HRT) is a noninvasive tool for risk stratification. Aim of our study is to assess HRT in DM1 patients in comparison to patients with frequent ventricular arrhythmias and structurally normal heart (VANH). We also evaluated the correlation between HRT and sustained ventricular arrhythmias induced at electrophysiological study in DM1 patients.**Methods.** We performed HRT analysis, by 24 hours Holter recording, in 15 DM1 (mean age  $52 \pm 10$  yrs) and in 15 VANH patients (mean age  $54 \pm 9$  yrs). We calculated: turbulence onset (TO), a percentage difference between the mean of first 2 RR intervals after and the last 2 RR intervals before a premature ventricular contraction, and turbulence slope (TS), a maximum positive slope of a regression line assessed over any 5 consecutive RR intervals within the first 20 RR intervals after a premature ventricular contraction. An electrophysiological study was performed in all DM1 patients to evaluate ventricular arrhythmias inducibility.**Results.** No differences were observed in TS between DM1 and VANH patients ( $12.3 \pm 4.2$  and  $9.2 \pm 3.9$  ms/RR, respectively); TO were significantly different between DM1 and VANH ( $-0.44 \pm 2$  and  $-2.9 \pm 1.8$  % respectively;  $p = 0.02$ ). At electrophysiological study, sustained ventricular arrhythmias were induced in 6 (40%) DM1 patients. We observed a correlation between TO and inducibility of sustained ventricular arrhythmias in DM1 patients: TO  $-2.29 \pm 1.5$  in not inducible and  $2.32 \pm 1.3$  % in inducible DM1 patients ( $p = 0.008$ ). No difference between no inducible DM1 (TO  $-2.28 \pm 1.57$ ) and VANH (TO  $-2.91 \pm 1.8$  %) was found, while a difference was observed between inducible DM1 and VANH ( $2.32 \pm 4$  and  $-2.9 \pm 1.8$  % respectively;  $p < 0.001$ ).**Conclusions.** Our data suggest a dysfunction of the nervous autonomic system, assessed by HRT analysis, in DM1 patients respect to VANH. The difference is more evident in inducible DM1 patients with the most pathological TO values ( $> 0$  %). Therefore TO seems an useful non invasive risk predictor of sustained ventricular arrhythmias induced at electrophysiological study in DM1 patients.**Commercial** M. Casella, None; A. Dello Russo, None; L. Messano, None; S. Valsecchi, Medtronic Italia C; A. Sestito, None; G. Pelargonio, None; G. De Martino, None; M. Pace, None; T. Sanna, None; M. Narducci, None; G. Bencardino, None; F. Mangiola, None; G.A. Lanza, None; P. Zecchi, None; F. Bellocchi, None.