



### Abstract: P3554

#### Heart rate turbulence - a new prognostic parameter for patients with congenital cardiac disease? First results of a prospective study

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**Background:** Heart failure and sudden death are the most common causes of death in adults with congenital cardiac disease (CCD). Therefore the identification of patients at risk for sudden death is of major interest. Although heart rate turbulence (HRT) is a strong predictor for mortality in chronic heart failure and after myocardial infarction, there are no data available regarding the predictive value of HRT for patients with CCD.

The objective of the current study was to assess the prognostic value of HRT for risk stratification in adults with CCD.

**Patients and Methods:** 43 patients (pts) (median age 29 years; 27 male) with operated and unoperated CCD were included.

HRT-parameters, Turbulence Onset (TO) and Turbulence Slope (TS), were calculated from a Holter-ECG. Clinical functional class (FC), serum levels of BNP and the occurrence of sudden death in the follow up period were documented. The mean clinical follow-up was 27±9 months (median 29 mths, range 0,3-35 mths).

**Results:** 27 pts had normal TO- and TS-values or no utilizable ventricular ectopic beats during holter monitoring. HRT was abnormal in 16 adults. Six of them had pathological values for TO and TS. TO was abnormal in another seven pts, and three additional pts had abnormal TS.

Four pts with abnormal TO and TS died, the other two pts were resuscitated within the clinical follow up period. One of them is currently listed for cardiac transplantation. Five of them were in FC IV, one in FC III, all had highly elevated levels of BNP (>750 mg/dl.).

**Conclusion:** HRT, most probably an autonomous baro-reflex, is the physiological response of the sinus node to premature ventricular contractions. If the autonomic control system is impaired, this reaction is either weakened or entirely missing.

The present study verifies for the first time that HRT - alone or in combination with other parameters (FC; BNP) - may be a suitable predictor for prognosis and mortality, not only in chronic heart failure and after myocardial infarction, but also in pts with operated or unoperated with congenital cardiac disease.