

**Print this Page for Your Records** **Close Window****Heart rate variability and heart rate turbulence in patients with mild, moderate and severe obstructive sleep apnea****Category:** 10 Ambulatory ECG/Heart Rate Variability/QT Interval**Presentation Time:** Saturday, 9:30 a.m. - 10:30 a.m.

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**Objective:** To correlate heart rate variability (HRV) and heart rate turbulence (HRT) with the severity of obstructive sleep apnea (OSA) in patients undergoing polysomnography. **Methods:** A total of 63 consecutive patients referred to polysomnography for the diagnosis of sleep related breathing disorders (SRBD) were included. Exclusion criteria were: Diabetes mellitus, manifest cardiac disease, periodic breathing pattern. All patients received simultaneous Holter-ECG monitoring during polysomnography (11 p.m.-6 a.m.). The Holter-ECG-findings including parameters of HRV (SDNN, LF, HF, LF/HF) and HRT (turbulence onset and slope) were related to the polysomnographic findings. The severity of the SRBD was defined according to the apnea-hypopnea index (AHI). **Results:** A total of 50 patients (43 male, age: 55±11 years) were taken into analysis. Of these, 16 exhibited mild SRBD (AHI <15), 18 moderate SRBD (AHI 15-30), 16 severe SRBD (AHI >30). The calculation of HRT was possible in 28 patients. See table for major Holter-electrocardiographic findings (all figures presented as median values). **Conclusions:** Heart rate turbulence but not HRV was impaired in patients with severe OSA as compared to those with mild or moderate SRBD, indicating a blunted cardiac autonomic activity even in the absence of an underlying cardiac disease. Abnormalities of HRT may be associated with the development of future cardiovascular diseases in patients with OSA.

Table (PVC=premature ventricular contraction)

	Mean heart rate	PVC's/hour	SDNN [ms]	LF [ln(P)]	HF [ln(P)]	LF/HF	Turbulence onset	Turbulence slope
<b>AHI &lt;15</b>	63.0	0.13	92.9	6.7	5.6	2.9	-0.0151	12.5
<b>AHI 15-30</b>	65.5	0.08	89.7	6.7	5.4	3.9	-0.0292	9.3
<b>AHI &gt;30</b>	66.5	0.70	93.4	7.1	6.1	2.5	-0.0204	7.0
<b>P-Value</b>	NS	NS	NS	NS	NS	NS	NS	<0.05

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