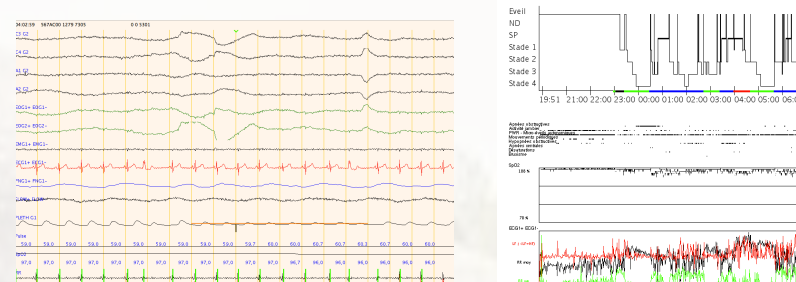


Quantitative aspects of the Sympatho Vagal Balance reported from 523 polysomnographic recordings

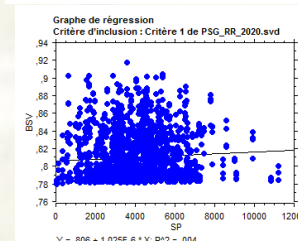
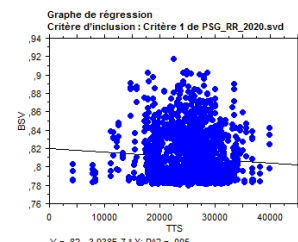
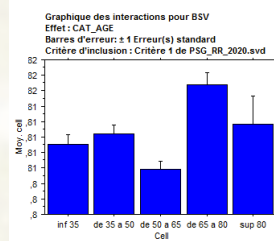
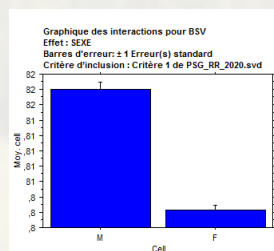
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Objectives / Introduction: We systematically integrated the sympatho-vagal balance calculation when analyzing the sleep records. The sympathovagal balance is calculated from the analysis of the variability of the RR space obtained from the ECG signal. We relate the results of the calculations to the other sleep parameters and to the diagnosis made after polysomnography.

Methods: The computation of the sympathovagal balance is carried out from the computation of the spectral analysis of the RR variability after analysis by wavelet of the ECG signal. The standard balance (BSV) is calculated as the LF / (LF + HF) ratio. The high values correspond to the predominance of the sympathetic tone, the low values to the vagal tone. The calculation was applied systematically to all the registrations made over the past two years. The data are analyzed by age, sex, sleep stage and diagnoses.

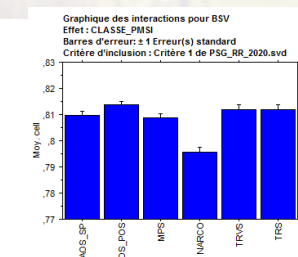
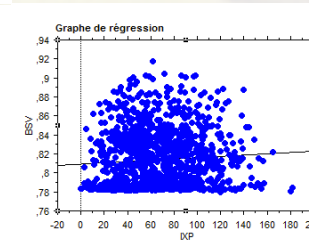


Results: The population studied is divided into 255 men, 266 women and 2 transsexuals. 21% under 35, 28% 35 to 50, 28% 50 to 65, 19% 65 to 80 and 4% above. The mean value of BSV is 0.81, which increases significantly (increase in sympathetic tone) with age ($p < 0.001$), is linked to sex. the mean value is 0.82 for men and 0.795 for women ($p < 0.001$). The value is inversely correlated with the total sleep time ($p = 0.02$) and mainly with the duration of stage 2 sleep ($p < 0.0001$) and REM sleep ($p = 0.003$). These results are in accordance with what is known. The value of BSV is significantly lower in narcoleptic patients compared to other patients ($p < 0.0083$). It is also found that BSV is correlated with the index of reactivity of the pulse wave and is higher in patients with positional OSAS ($p = 0.0086$)



Figures : (RR extracted from Polysomnography and Hypnogram with SympathoVagal Balance graphs

Graphs (top to bottom and left to right) : BSV (SympathoVagal Balance) average from sex and age, regression from TTS (Total Sleep Time), SP (REM Sleep) and PWR (Pulse Wave Reactivity)



Conclusions: The sympathovagal balance is a simple parameter to calculate from the ECG signal which is known as a predictor of cardiovascular risk factors, the use of which should be integrated into the routine analysis of polysomnography.

Disclosure: Nothing to disclose