

Different findings on subjective and objective examination of chronic insomnia

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Abstract

Objective:

This study aimed to examine the clinical manifestations of insomnia affected by gender, and to evaluate the correlation between subjective and objective measures.

Methods:

We conducted a prospective study, and 40 participants met the inclusion criteria and entered the insomnia clinical trial. Polysomnography (PSG) and actigraphy were used to measure objective sleep. The study used sleep diaries, Pittsburgh Sleep Quality Inventory (PSQI), and Epworth Sleepiness Scale (ESS) to measure subjective sleep. Beck Depression Inventory (BDI) and Beck Anxiety Inventory (BAI) were used to evaluate anxious and depressed mood. The 36-Item Short Form Health Survey (SF-36) was used to evaluate the quality of life. We used t-test and chi-square for group comparisons of mean and percentage. Correlation analysis was used to analyze the association between subjective and objective measurements.

Results:

About 30% of the 40 subjects were men, with an average of 50 ± 13.38 years old and the average of 9.68 ± 8.86 years of insomnia history. In PSG, we found a significant difference between males and females in objective sleep measurements. Actigraphy showed some significant difference by a special rest-active rhythm, such as Intraday variability(IV)#1 ($p= 0.003$), IV#V1 ($p= 0.021$), IV_weekday#V1 ($p= 0.03$), IV_weekend#V1 ($p= 0.032$), Alpha2#1 ($p= 0.011$) and least active 10 continuous hours (L10)_idx_mean#1 ($p= 0.045$). Most subjective sleep measurements showed no significant difference between men and women, only sleep diary (total sleep time, $p= 0.022$ and sleep time whole day, $p= 0.026$) revealed that men have worse sleep quality than women. For the correlation between the subjective measurements and the objective measurements, PSG was shown a significant correlation with “sleep onset latency ”of sleep diary (sleep onset latency, $p= 0.009$; total sleep time, $p= 0.03$; efficiency, $p= 0.004$; wake after sleep onset, $p= 0.049$; arousal index, $p= 0.006$). PSG also shown a significant correlation with “sleep disturbance” of PSQI (sleep onset latency, $p= 0.046$; total sleep time, $p= 0.016$; efficiency, $p= 0.035$).

Conclusion:

A significant difference in gender was found in PSG, actigraphy, and sleep diary, suggesting that male and female with insomnia experience different sleep quality. The correlation between subjective and objective measurements was significant when PSG was compared to sleep diary and PSQI, indicating PSG findings were more consistent with subjective measurements.