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Title: The relationship between sleep quality and the control and severity of bronchial asthma

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Body: Introduction Few studies have comprehensively assessed the quality of sleep in patients with bronchial asthma by full polysomnographic parameters and validated questionnaires. Material and methods We performed full polysomnography in 26 selected patients with asthma. We gathered data on their sleep quality through the Pittsburgh sleep quality index (PSQI), the Epworth test, and the Insomnia Severity Index (ISI), and we collected data on asthma control using ACT, health resource utilization in the previous year, pulmonary function, and previous treatment. The Hospital Anxiety and Depression (HAD) test, the Nijmegen questionnaire, and the Sidney Asthma Quality of Life Questionnaire (AQLQ Sidney) were handed out. We divided patients into partially or poorly controlled if the ACT score was <20, and into well controlled if the ACT \geq 20. Patients with \geq 15 were classified as clinical insomnia, and if they had a PSQI score \geq 5, as poor sleep quality. Results The ACT medium was 18.5 and FEV1 74%. In patients with ACT <20 sleep latency was higher with no significant difference (33 vs.20, p = 0.28), they had the worse PSQI (12 vs.3, p = 0.03) and the worse score in ISI (13.67 vs 2.26, p = 0.020). Patients with clinical insomnia had worse ACT score (19.4 vs. 13.8, p=0.08), hyperventilation (Nijmegen 29 vs 8.7, p = 0.057), worse AQLQ (5.9 vs. 1.7, p = 0.005), anxiety (HDA 16 vs. 5, p = 0.001), depression (HDA 12 vs. 2.6, p = 0.004), and more exacerbations (2.2 vs. 0.7, p=0.07). Conclusions There is probably a bidirectional relation between asthma control and poor quality of sleep. We found poor correlation between polysomnographic parameters, sleep quality guestionnaires and characteristics of asthma.