Summary

Introduction: Obstructive sleep apnea (OSA) is a condition significantly increasing cardiovascular mortality. In the population of Type 2 diabetes (T2D) patients, OSA is highly prevalent, but mostly undiagnosed. Screening for OSA in T2D patients is still not routine practice and it is also uncertain what the most effective screening method is. The aim of this study was 1) to establish the prevalence of OSA in T2D patients 2) to compare the performance of screening questionnaires and to determine a suitable screening method 3) to find out the adherence of T2D patients to the diagnostic process and OSA treatment 4) to compare adherence to treatment between T2D and regular sleep clinic patients. **Methods:** 494 consecutive patients with T2D were recruited and asked to fill in screening questionnaires, to undergo screening and, if indicated, diagnostic home sleep monitoring. Those with clinically significant OSA (apnea hypopnea index ≥ 15) were recommended CPAP (continuous positive airway pressure) treatment. Patient follow-up continued for 12 months and their adherence to CPAP was compared to adherence of sleep clinic patients. **Results:** Clinically significant OSA was found in 94 (31%) out of 294 T2D patients. The sensitivity and the specificity of all three scrutinized questionnaires (Berlin, STOP and STOP-Bang) did not show any statistical difference (sensitivity 0.69, 0.65 and 0.59 resp., specificity 0.50, 0.49 and 0.68 resp.). The STOP-Bang questionnaire showed different sensitivity and specificity for men and women (sensitivity 0.74 vs. 0.29 ($p < 0.05$) and specificity 0.56 vs. 0.82 ($p < 0.05$)). 66% of recruited patients underwent screening using home sleep monitoring. Subsequently, 61% out of the 94 indicated patients underwent diagnostic monitoring. 51 patients were recommended CPAP. Among 228 sleep clinic patients, CPAP was recommended to 92 (40%). CPAP acceptance and adherence (use $\geq$ 4hrs/night $\geq$ 70% nights) did not show any statistical difference between T2D and sleep clinic patients (acceptance 75% vs. 80%, $p > 0.05$, adherence 39% in both groups). **Conclusion:** Considering the low sensitivity and specificity of the questionnaires, we suggest home sleep monitoring as a more suitable method for screening OSA in the T2D population. A relatively high proportion of T2D patients declined either screening or diagnostic home sleep monitoring. Nevertheless, those diagnosed with OSA did not differ in their CPAP acceptance and adherence compared to regular sleep clinic patients. 20 patients with T2D need to be screened by home sleep monitoring to obtain one successfully treated patient.