European Respiratory Society
Annual Congress 2013

Abstract Number: 2181
Publication Number: P2538

Abstract Group: 4.2. Sleep and Control of Breathing
Keyword 1: Sleep disorders Keyword 2: Apnoea / Hypopnea Keyword 3: Comorbidities

Title: Obstructive sleep apnoea in patients with type 1 diabetes

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Body: The association of obstructive sleep apnoea syndrome (OSAS) and type 2 diabetes has largely been described. On the other hand only few reports have assessed the relationship between type 1 diabetes and sleep related disorders. Methods: We present a single centre, prospective cross sectional study of 67 consecutive type 1 diabetic patients in whom we performed a polysomnography as part of their yearly check-up. Patients (age 54 ± 10 yrs; 60% male; BMI 25.8 ± 5 kg/m²) were followed-up for 29 ± 14 yrs for type 1 diabetes. All were on insulin therapy (insulin dose 42 ± 30 U/day; HbA1C 7.3 ± 1%). Results: Prevalence of OSA defined as an apnea-hypopnea index (AHI) ≥ 10/h was 46% and prevalence of severe OSA (AHI > 30/h) reached 20%. We compared type1 diabetic patients with or without OSA. We found no significant differences for age, male/female ratio, BMI or HbA1c. Patients with OSA had a longer course of diabetes (34 ± 12 vs 25 ± 15 yrs, p = 0.01), a higher risk of retinopathy (OR=7.82 [2.2; 35.5]), cardiovascular outcomes (OR=6.22 [1.4; 38.6]) and hypertension (OR=5.56 [1.6; 22.8]). Noteworthy, Epworth sleepiness score was generally within normal values even in type 1 diabetic patients with OSA (5 ± 3 vs 5 ± 4, NS). Conclusion: Prevalence of OSA in type 1 diabetic patients is high and related to a longer duration of diabetes. Excessive daytime sleepiness was uncommon in this population.