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Title: 5-years APAP adherence in OSA patients

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Body: Introduction: Although continuous positive airway pressure (CPAP) is effective in the treatment of obstructive sleep apnoea (OSA), inadequate adherence remains a major cause of treatment failure. Objective: To determine long term adherence to auto adjusting-CPAP (APAP) and its influencing factors. To evaluate initial compliance and its relation to long-term adherence. Methods: 83 male patients with moderate to severe OSA were enrolled. After beginning, APAP patients' compliance (% of days usage and median hours per night) was recorded during medical appointments, after 12 days, 6 months and then annually for at least 5 years. Results: Patients mean age was 53.8 ± 10.8 years, mean apnoea-hypopnoea index of $52.5 \pm 20.1/h$ and mean Epworth sleepiness scale of 12.41 ± 5.5 . Mean follow-up time was of 61.9 ± 23.1 months, 63 patients (75,9%) are still using APAP (73.43 ± 7.1 months) having a mean percentage of use of 92.6 ± 7.18 for $06:55 \pm 01:35$ per day. Twenty patients (24.1%) abandoned treatment after 25.4 ± 17.5 months, on average. Patients who abandoned treatment during the follow-up period had lower initial compliance. Percentage of use at 12th day and 6th month was 81.7 ± 23 and 65.8 ± 28.5 for non-adherent patients and 96.6 ± 7.4 and 94.3 ± 9.1 for adherents ($p=0.01$ and $p=0.001$), mean hours per night were $04:41 \pm 01:55$ and $04:07 \pm 01:57$ vs. $06:18 \pm 01:28$ and $06:18 \pm 01:12$ ($p=0.001$ and $p=0.001$), respectively. Non-adherent patients were younger ($p=0.01$). No other differences including employment state, marital status or disease severity and symptoms were found between the groups. Conclusions: Patients who maintain long-term treatment have very good compliance. Non-adherent patients have significantly lower initial compliance than long term-adherents.