

Author (Year) {Citation #}	Oxford Grade	Patient or Problem	Intervention/ Comparison Intervention	Study Design	APAP Attended/ unattended
Ayas (2004) {#63}	1a	Patients diagnosed with OSA	APAP unmonitored (home situation)/Standard PSG directed CPAP therapy	Meta-analysis of 9 RCT's—NB: 3 were cross-over and 6 parallel design	Unattended
Ficker (2003) {#102}	2b	Patients diagnosed with OSA	APAP unmonitored (home situation)/Standard PSG, Standard PSG directed CPAP therapy	Randomized parallel groups	attended
Hertegonne (2003) {94}	2b	Patients diagnosed with OSA	APAP monitored and unmonitored/Other APAP device comparison	Randomized Crossover	Attended during use, but not monitored by sleep study/

Hukins (2004) {#154}	2b because of power	Patients diagnosed with OSA	APAP unmonitored (home situation)/Standard PSG directed CPAP therapy	Randomized, single- blinded, parallel crossover	Unattended
----------------------	---------------------------	-----------------------------------	--	---	------------

Lloberes, (2004) {#156}	NS	Patients diagnosed with OSA	APAP monitored and unmonitored/Standard PSG Standard PSG directed CPAP therapy	Prospective, controlled, but non- random assignment	Attended
-------------------------	----	-----------------------------------	---	---	----------

Marrone, (2004) {#60}	2b	Patients diagnosed with OSA	APAP unmonitored (home situation)/Standard PSG directed CPAP therapy	Randomized, single blind Treatment handed out blindly and randomly, but machines appeared different to subjects. Could one type of machine have looked better than the other?	Overnight CPAP titration done with autoCPAP to determine fixed CPAP pressure-/ Unattended APAP
-----------------------	----	-----------------------------	--	---	--

Marrone, (2005) {#157}	3b or 4 I say 3b because there were a very large number of subjects.	Patients diagnosed with OSA	APAP Monitored (in lab)/No comparison group	75 consecutive cases with OSA -> AHI > 20	Overnight APAP attended.
------------------------	--	-----------------------------	---	---	--------------------------

Masa (2004) {#168}	1b	Patients diagnosed with OSA	APAP unmonitored (home situation)/Standard PSG directed CPAP therapy	Multi-center, Prospective, randomized, controlled trial	Unattended
--------------------	----	-----------------------------	--	---	------------

Massie (2003) {#119}	2b	Patients diagnosed with OSA	APAP unmonitored (home situation)/Standard PSG directed CPAP therapy	Multisite, randomized, single blind, cross over study	APAP unattended/
----------------------	----	-----------------------------	--	---	------------------

Nolan (2004) {#163}	1b	Patients diagnosed with OSA	APAP unmonitored (home situation)/Standard PSG directed CPAP therapy Other APAP device comparison	Randomized cross-over	Unattended
---------------------	----	-----------------------------	--	-----------------------	------------

Nosedá, (2004) {#158}	2b	Patients diagnosed with OSA	APAP unmonitored (home situation)/Standard PSG directed CPAP therapy	Single blind Randomized Prospective Crossover	Unattended
-----------------------	----	-----------------------------	--	--	------------

Nussbaumer (2006) {#7}	2b	Patients diagnosed with OSA	APAP unmonitored (home situation)/APAP directed CPAP therapy	Randomized, double-blind, cross-over study	Unattended
------------------------	----	-----------------------------	--	---	------------

Palombini (2006) {#13}	4	Patients diagnosed with OSA	APAP unmonitored (home situation)/No comparison group	Clinical Series	Unattended
Pevernagie (2004) {#58}	1b	Patients diagnosed with OSA	APAP monitored and unmonitored/Standard PSG Standard PSG directed CPAP therapy Other APAP device comparison	Randomized crossover during split night	Attended
Planes, C, et al. (2003) {105}	2b	Patients diagnosed with OSA	APAP unmonitored (home situation)/Standard PSG directed CPAP therapy	Randomized, not blinded	APAP initiated in home with minimum at 6cmH2O, then after 1 week of recording, range set @ peak pressure -4, +2 cmH2O.

Randerath (2003) {#93}	1b I want to rate it lower because of applicability, but it meets many criteria for a 1b study?	Patients diagnosed with OSA	APAP monitored and unmonitored/Standard PSG Standard PSG directed CPAP therapy	Randomized crossover design	Unattended
Randerath, WJ, et al. (2001) {149}	1b	Patients diagnosed with OSA	APAP monitored and unmonitored/Standard PSG directed CPAP therapy	RCT, blinded, crossover	Unattended during therapy, attended during in lab PSG
Resta (2004) {#46}	2b—down graded because of absence of power analysis	Patients diagnosed with OSA	APAP unmonitored (home situation)/Standard PSG directed CPAP therapy	Randomized, single-blind with parallel control group	Unattended during intervention but end-point data collected in lab.

Senn (2003) {#160}	1b	Patients diagnosed with OSA-does not report how	APAP unmonitored (home situation)/not say Other APAP device comparison, APAP-directed FCPAP	Single blind randomized crossover	Unattended
--------------------	----	---	--	-----------------------------------	------------

Stammnitz (2004) {#56}	1b	Patients diagnosed with OSA	APAP Monitored (in lab)/Standard PSG directed CPAP therapy Other APAP device comparison	prospective controlled randomized crossover design	Attended
------------------------	----	-----------------------------	--	--	----------

West, SD, et al. (2006) {21}	2b	Patients diagnosed with OSA	APAP unmonitored (home situation)/Chronic APAP compared with APAP-directed CPAP and empiric CPAP	RCT-double blind	Unattended
---------------------------------	----	-----------------------------------	---	------------------	------------

Protocol	# of patients/subjects	AHI
The study was a statistical study so the protocol is implied but not stated and, presumably, involves subjects given an APAP and given "standard CPAP"—presumably PSG-derived but this is not explicitly stated.	282	Mean ranged from 27/hr to 59/hr—implying that subjects with mild OSA were not studied
After in lab PSG patients randomly assigned to FCPAP or APAP FOT in lab for 3 consecutive nights. Epworth Sleepiness Scale used pre and post. Researchers blind to which treatment. Subject no blind to machine type.	100 After drops outs, 48 in APAP group and 47 in CPAP group.	>10
Recruited all patients tested with AHI>20 and arousals index>30. After about 3 months habituation to empirical FCPAP, invited to hospital for randomized assignment to first one APAP device X 3.5 hr., then the other for 3.5hrs. Subjects blinded to nature of the devices. Studied tolerance with VAS, evaluated/compared pressure profiles obtained by download to individual proprietary software	Enroll:50 Compl:50	58.7±34.9

Inclusionary criteria: CPAP-naïve subjects with an AHI ≥ 5 /hr and EDS.	55 enrolled 46 completed	59.7 +/- 30.1 and 50.2 +/- 24.9 for the two groups
--	-----------------------------	--

Subjects were given an Autoset T machine set in either APAP (pressure range 4-20 cmH₂O) or fixed mode for 2 months and then RTC to have the machine mode adjusted, data retrieved, and fill out forms. Subjects were blinded.

Primary end-pts: compliance, ESS, SF-36.

Secondary end-pts: VAS measures of ease of Rx, attitude to RX, and side effects; pressures; leaks

Confusing. Subjects assigned in order of presentation to Autoset Daytime titration, Manual (FCPAP) daytime titration, and Conventional nighttime titration with Manual titration (FCPAP). Daytime titration was after sleep deprivation. Pressures needed across the three groups compared. Sleep architecture as well. Epworth Sleepiness Scale compared at 3 months clinical follow-up. Main focus of the paper was the difference in daytime versus nighttime titrations.	93	>30, nonspecified number of subjects <30
--	----	--

Subjects with AHI of \geq 30 NR 68.4
on diagnostic NPSG,
underwent in lab titration study,
where the fixed CPAP pressure
was determined by autoCPAP.
Subjects were then randomized
to receive either fixed level
CPAP or autoCPAP for a period
of 4 weeks. They were then
switched to the alternate
machine for another 4 weeks.
At the end of each 4 week
block, BMI, ESS and a sleep
questionnaire were completed
at the end of each 4 week linb.
Compliance data was
downloaded from the machines

Patients with OSA diagnosed 75 61.7 +/- 20.5
by either NPSG or portable
monitoring underwent an in lab
titration study using autopap to
determine a fixed pressure.
95th percentile CPAP was
considered as the pressure
level suggested by means of
fixed level CPAP machines. All
patients were CPAP naïve.
Technician was present to help
with mask issues. Reliability of
titration was then assessed in 4
consecutive steps, taking into
account pressure levels
administrated by the device in
association with: 1) oxygen
desaturation alone 2) oxygen
desaturation and time spent in
the supine position 3)
distordered breathing and time
spent supine (looking at airflow,
SaO2, position, respiratory
montage), 4) respiratory and
sleep characteristics. (all
manually scored)

Considered inadequate titration
if TST < 3hrs, no REM sleep, or
less than 1 hour of supine
position.

Pts requiring CPAP with AHI \geq 30, ESS \geq 12 recruited from sleep centers. Each received 20 minute daytime CPAP trial and instruction, the randomized to PSG-directed CPAP, AutoPAP titration for 1-3 nights, or estCPAP by formula-subsequently adjusted by clinical parameters. Close follow up, and finally at 12 weeks, all patients underwent PSG on best CPAP and were assessed for outcomes.

466 evaluated, 62.7% excluded. 199 patients randomized

Symptomatic patients, age 18-65, with an AHI > 15 and who required a CPAP pressure > 10 on titration night were included. Patients were given autopap for 6 weeks followed by 6 weeks at fixed CPAP pressure. Primary and secondary outcomes as listed were assessed at the end of each 6 week limb.

46 patients enrolled. 44 patients completed the study

Greater than 15

Long-term CPAP users were switched to APAP (press. range 4-16 cm H₂O) and used each of the 3 machines for 4 weeks; the investigators were blinded but, clearly, the ss could not be but were not told that the machines worked diffy—only that they were newer machines. In addition to comparing the 3 APAP machines, ss were also monitored on their current CPAP machine, of which there were 4 diff't models.

27

48 (29-76)

Data collected: compliance, pressure, SF-36, ESS, side effects, preference.

CPAP pressure mean=10 and range=8-12 cm H₂O

<p>93 patients had undergone diagnostic and CPAP titration PSG, and were the placed on APAP for 2 weeks with baseline 7, range 4-14. They used downloaded data to identify those with more variable “pressure requirements” based on a variability index derived from pressure-time domain. 24 patients were then randomized to FCPAP vs. APAP for 8 weeks, then crossed over to opposite limb for 8 weeks. Pittsburgh Sleep Quality Index and ESS collected at baseline and after each limb, and subjective preference for device collected at end of both limbs. Subjects not told which setting or type of setting was used.</p>	<p>93 eligible, 3 refused, 90 completed 2 weeks APAP, from which 27 had highly variable pressure requirements. 24 completed the study.</p>	<p>50.9±25.6</p>
---	--	------------------

<p>Pts with an AHI>10 based on HOME monitoring of resp’y parameters; prescribed either APAP for one month or CPAP using the APAP machine in the constant mode and using the P90 as determined by 1 night of APAP monitoring prior the trial period; pre-set press range=5-15. After each time interval, subjects underwent the following: home-based resp’y monitoring (7-channel—respirations + legs—no EEG) to evaluate AHI and ODI; ESS; SF-36; VAS of benefits/side effects (tolerance/preference); vigilance test (Osler test); compliance; measurement of pressures; sleep resistance.</p>	<p>30 (34 enrolled)</p>	<p>41.1 +/- 3.6</p>
---	-------------------------	---------------------

Consecutive patients with stroke were enrolled in the study prior to PSG-determination of OSA. The study group is all patients who agreed to participate and had a sufficient level of consciousness. The study included agreement to use CPAP as well as subsequent dx of OSA by portable PSG and based on $AHI \geq 10$. Of those who agreed to use CPAP and met criteria ($n=14$), auto-PAP was prescribed and they were evaluated sequentially over an 8-week period for compliance with secondary measures of ESS, NIH Stroke Scale, Barthel Index, as well as other questions that were reported without a measure (e.g., rate of nocturia, caregiver disruption, consolidation of nocturnal sleep).

32 enrolled
7 completed
25.5 +/- 7.2

90.5 □ 69.2 dayshome habituation period, then split night with crossover of each device. Raters and patients blinded.

30 recruited; 30 >20 completed

Patients referred for suspected OSA and tested with PSG and found with $AHI \geq 30$, (>80% obstructive events). Baseline ESS obtained (ESS): 14.8 ± 4.9 . Randomized to in-lab PSG guided NCPAP therapy vs. home APAP with nursing coach. After 2 months, patients tested with PSG, repeat ESS, objective compliance, patient subjective tolerance score.

35/16APAP (2 drop out) vs. FCPAP: 60.1 ± 19.0 APAP: 56.2 ± 16.1 h-1

Patients diagnosed with OSA, 27; 7 dropped out prior to completion of study, but analyzed as intention to treat

found to be intolerant of FCPAP or those requiring FCPAP ≥ 12 cm H₂O on PSG-directed FCPAP, or those with central respiratory disturbances $\geq 10\%$ of the AHI, or those with central apneas which increased further under CPAP were admitted to the study. These were then randomized to

Baseline
 $=49 \pm 27.3/h$,
 BPAP= $9.8 \pm 12.5/h$
 ($p < 0.01$), and
 APAP= $13.8 \pm 13.2/h$
 ($p < 0.01$).

Referred patients diagnosed with AHI $>10/h$. Received dx PSG, CPAP titration PSG, and two night PSG on FCPAP or APAP for baseline data. Patients then randomized to APAP vs FCPAP for 6 weeks, PSG, then other arm for 6 weeks, then PSG. Sleep variables, AHI, ESS, compliance collected, mean CPAP pressures at all 6 week intervals. Patient preference collected at end of trial.

52 patients enrolled, 47 completed. 2 each of APAP and FCPAP arms disenrolled, and 1 was removed from study when a new dx of cancer made.

35.1 \pm 26/h

Pts referred w/ un-rx'ed OSA were enrolled and prescribed either CPAP based on PSG titration or APAP (settings 4-16) for one month, at which point they were brought back to the lab and underwent PSG with their own machine, monitoring resp'y and sleep parameters. ESS and analysis of pressure and compliance over the past month was also done at that time. Preference was not assessed.

The authors had done a prior study looking at ONE night of low pressures given via APAP and found increased sleep fragmentation. The question was whether or not CHRONIC use was associated with increased sleep fragmentation as well.

20 ss—10/RX group
 no drop-outs

RDI (includes RERA's):
 45.3 +/- 10.7 for CPAP;
 48 +/- 14.3 APAP

<p>Subjects who were diagnosed with sleep apnea were sent home for two weeks on AutosetT, or AutosAdjust LT. The 90th percentile pressure was used as subsequent FCPAP pressure. Patients were then randomized to either FCPAP or APAP, in a crossover fashion with each subject on each condition at home for one month. Subjects blind to purpose of study but were aware that different modes were being used. Epworth Sleepiness Scale and quality of life investigated. Modified MWT (Osler) test used to measure differences.</p>	<p>31 (29 remained)</p>	<p>>10, otherwise not specified.</p>
---	-------------------------	---

<p>Patients recruited pseudo-randomly from those completing diagnostic PSG and with AHI ≥ 10 hr⁻¹. All patients underwent PSG-directed FCPAP titration second night. Patients then treated on 4 subsequent nights for 1 night on randomly assigned FCPAP, AutoSet, Horizon, or Virtuoso during PSG.</p>	<p>16/12=(16 entered) - (4 drop out)</p>	<p>67.3\pm21.7 hr⁻¹</p>
--	--	---

<p>98 patients recruited at convenience out of 633 patients started on CPAP in Oxford, Jan 02–Mar 03. Subjects had diagnosis of OSA made on basis automated portable monitor utilizing pulse transit time (Win-Visi Monitoring System), oxygen desaturation index >10, ESS>9, and “preference” given to local patients to ease follow up logistics. Randomized to receive chronic APAP, FCPAP directed by using 95%ile pressure determined by 1 week of APAP, or FCPAP set as determined by algorithm equation. Outcome variables (ESS, OSLER-MWT, SF-36, SAQLI, ambulatory 24 hr BP) assessed at baseline, 1 month, and 6 months, with follow up provided by sleep nurses.</p>	<p>98 / 6 months variable pressure (n=31) / 1-week variable pressure, then fixed pressure (n=33) / 6 months algorithm derived fixed pressure (n=34)</p>	<p>NA; desaturation index >10 ; median 34.5 dips per hour, range 10.3–89.0</p>
---	---	---

Primary Study Outcomes

Primary Outcomes:

- 1) No difference in post-treatment AHI's—data were homogeneous;
- 2) No difference in post-treatment ESS's—again, homogeneous data;
- 3) APAP was associated with a lower mean pressure compared with CPAP (2.2 cm H₂O difference)—heterogeneous data; random effects model used to compensate for heterogeneity;
- 4) No significant difference in adherence between CPAP and APAP—heterogeneous data;

Secondary Outcomes:

- 1) Correlates for greater reduction in mean pressures
 - a) greater reduction in more recent studies;
 - b) greater reduction in studies with more women;
 - c) greater reduction in studies with younger subjects;
- 2) Correlates for better compliance:
 - a) studies with a lower mean age showed greater compliance with APAP vs. CPAP—no correlation with adherence difference and mean CPAP pressure nor difference between CPAP/APAP pressures

There was no difference between Epworth Sleepiness Scales between patients on FCPAP vs APAP (FOT). Mean pressure was lower on APAP than it was on CPAP.

Stated primary outcome: “subjective tolerance”—no difference in subjective tolerance between devices

Other outcome: “pressure parameters”: Pressures were different between devices, with generally lower pressures using SOMNOsmart [P95% AutoSet 9.6±1.9 vs. SOMNOsmart 7.8±3.0 (p<0.0005)]. No reference standard to decide if respiratory or sleep parameters were controlled or not.

1. compliance
 - a. no stat sig't diff'ce in nightly hh of use (CPAP:4.86 +/- 2.65; APAP 5.05 +/- 2.38 hh/n—p=0.14)
 - b. no stat sig't diff'ce in % nn used (CPAP: 78% +/-32.6%; APAP 83.3% +/- 23.3%—p=0.29)
 - c. compliance correlated—those who complied with one mode, complied with the other mode;
 - d. in those subj's who reported any SIDE EFFECT, compliance was higher with APAP than CPAP at p<0.001
2. ESS
 - a. sig't improvement cf'ed with pre-RX (p<0.001)
 - b. no sig't diff'ce bet. RX modes
3. SF-36
 - a. sig't improvement in Role Physical and Vitality scores cf'ed with baseline (p<0.05)
 - b. no sig't diff'ce bet. RX modes in those scores
4. VAS
 - a. ease of use—no stat'l diff'c
 - b. subj'v attitude—no stat'l diff'ce
5. Side Effects and unplanned visits
 - a. fewer side effects in APAP (p=0.02)
6. Pressure Levels and Leaks
 - a. 95th %-ile—lower in APAP (9.7 +/- 3.2 vs. 11.1 +/- 4.0 p=0.001)
 - b. median %-ile—lower in APAP (7.5 +/- 3.1 vs. 11.0 +/- 3.9 p<0.001)
 - c. max pressures same (APAP=10.7 +/-3.6; CPAP=11.1 +/-4; p=0.29)
 - d. leaks stat'y sig'y lower with APAP for median leak/95th %-ile leak/max leak (p<0.001, p<0.001, p<0.05)

No difference in Epworth Sleepiness Scale scores among the three groups at 3 month clinical outcome measure. APAP pressure during day higher than Manual (FCPAP) daytime pressure, and conventional nighttime manual. (latter 2 not significantly different).

- 1) Questionnaire about subjective preference, sleep quality: More subjects preferred autoCPAP
- 2) ESS-no difference
- 3) compliance- higher in patients who indicated that preferred autoCPAP compared to those who had no preference

Compared autoCPAP reliability during an in lab titration night by comparing events at each pressure with manual scoring of events (oxygen desaturations, airflow, respiratory montage). In 87.5% of cases, autoCPAP provided reliable information about pressure levels correcting respiratory disorders during sleep.

- No difference in titration failures between standard and APAP groups (2.4% vs 4.2%)
- APAP titration achieved in 1 night in 82.4% of patients
- There was no statistically significant difference between titrated CPAP, improvement in AHI, other sleep parameters, oxygenation, or compliance at 12 weeks using either PSG-CPAP, or APAP titration.
- The AHI was a little higher using the empiric formula method.
- QOL measures improved in all groups
- In the APAP group, the degree of improvement in SF36 physical and EuroQol was lower than that in the PSG-CPAP group.

- 1) Hours of use of CPAP vs APAP
- 2) pressure given APAP vs CPAP
- 3) residual AHI
- 4) SF-36 questionnaires
- 5) ESS
- 6) Days of use

1. compliance—no diff'ce bet. CPAP/AutoSet/RemStar—less use with Breas for both % nn used and hh/n ($p < 0.01$);

2. mean pressure—AutoSet/RemStar lower than CPAP (8 cm/7.3 cm vs. 10 cm) at $p < 0.01$ BUT Breas even LOWER than other three (5.3 cm) at $p < 0.01$
This is interesting because it suggests that lower pressure causes more discomfort-see item 6 below.

3. max. pressure—only sig't diff'c was that RemStar was higher than CPAP (13.4 vs. 10) at $p < 0.01$

4. SF-36—no sig't diff'c among all 4 machines

5. ESS—no sig't diff'ce

6. Subj. eval. of APAP machines

- a. pressure discomfort more with the Breas vs. other 2 ($p < 0.05$)
- b. poorer sleep quality with Breas cf. other 2 ($p < 0.05$)
- c. least preferable in terms of size/noise=AutoSet ($p < 0.001$)

7. Subj. pref'c—48% (13) chose to stay on CPAP; 52% (14) preferred APAP
6 chose REMStar/5 chose AutoSet/3 chose Breas

- ESS was slightly better on APAP than FCPAP (5.1 ± 2.8 vs. 6.1 ± 2.8 , $p < 0.01$)
- PSQI improved equivalently with both treatments
- Compliance was similar in both groups: (5.5 ± 1.5 vs. 5.3 ± 1.9 FCPAP vs APAP, NS) and days used was 95.5% in both groups.
- Mean Pressure was less with APAP (7.6 ± 2.3 vs. 8.5 ± 2.2 $p < 0.05$)
- 16/24 preferred APAP therapy
- median Apnea Index not statistically different (CPAP-0.40/h—range 0-2.4/h; APAP-0.45/h—range 0-5.8/h)

- 1) AHI—both APAP and CPAP reduced AHI by equivalent amounts ($p < 0.05$ vs. baseline and $p = \text{NS}$ between modes) and equivalence confirmed
- 2) ODI—similar to above—equivalency between modes and significant change from baseline;
- 3) ESS—fall in ESS equivalent;
- 4) SF-36—only 1 domain showed improvement from baseline, the vitality score, and this was significantly improved with either treatment;
- 5) vigilance—significant improvement for both modalities; no significant difference between modalities;
- 6) sleep resistance showed improvement from baseline and no significant difference between groups but equivalence could not be confirmed with pre-set measures;
- 6) tolerance—noise perception and discomfort at high pressures were better tolerated with APAP; other subjects showed no difference (sleep quality; side effects from mask; mouth leaks)
- 7) preference—26/30 subjects favored APAP
- 8) compliance—no significant difference in hours/night
- 9) mean pressure—lower with APAP than with CPAP with mean difference of 1.3 cm H₂O.

Compliance with nasal APAP in this patient population—7/32 =22% completed the study

There was no difference between the devices except that the APAPflow (Autoset) was better than the APAPfot (Somnosmart) in decreasing snoring.

- AHI Arousal Index, Sleep architecture, CT90%, all significantly improved from baseline, but not different between NCPAP and APAP.
- AHI was 10.4 ± 12.5 vs. 7.6 ± 6.9 , and ESS 7.6 ± 3.4 vs. 7.5 ± 3.4 in FCPAP vs APAP group respectively. Compliance comparable at 5.3 ± 1.4 vs. 4.5 ± 1.7 hours FCPAP vs APAP (NS).
- Mean PAP was 8.7 ± 1.7 (APAP) (FCPAP) vs. 11.7 ± 2.5 cm H₂O
- Patient tolerability scores same (of those that finished).
- Total cost of initiation (2 PSG+FCPAP vs 1 PSG + home APAP) was \$500 less in the APAP group
- delay from diagnosis to treatment was less in APAP group due to time to get patients back into the lab for FCPAP titration PSG.

- 10% of total population was found to meet the “cpap intolerant group.”
- AHI, total arousal index, and respiratory related arousal index was significantly reduced by both BPAP and APAP ($P < 0.01$)
- ESS (baseline 12.1 ± 5.1) was reduced by APAP (7.2 ± 5), but not BPAP (8.4 ± 4.7) ($p < 0.05$)
- 77 vs. 23 %, $p < 0.01$ preferred APAP vs BPAP
- Mean pressure with APAP was 5.1 ± 1.7 cm H₂O, and under BPAP treatment was 8.3 ± 2.5 cm H₂O ($p < 0.01$)
- No difference in compliance as measured by days use (BPAP $94.4 \pm 14.8\%$ vs. APAP $89.6 \pm 24.1\%$, $p > 0.05$)
-

- Both constant CPAP and APAP FOT improved AHI at both measuring time points. AHI decreased from $35.1 \pm 26/h$ (baseline) to 5.3 ± 5.6 (APAP FOT - first night), 4.6 ± 4.8 (FCPAP-first night), 5.0 ± 5.2 (APAP FOT -6 wk) and 4.3 ± 6.3 (FCPAP-6 wk) ($p = 0.001$ between baseline and each treatment mode) % of patients with AHI < 5 or 10 not provided.
- Arousal frequency was significantly but similarly reduced by both APAP and FCPAP from baseline. Sleep architecture also improved from baseline and did not vary between treatment modalities.
- Compliance was excellent and not different between APAP and FCPAP
- Of 47 patients completing study, 35 (75%) preferred APAP FOT for long-term treatment at home, and 12 preferred FCPAP ($p < 0.01$).
- Despite higher mean pressures for FCPAP than APAP by 2 cmH₂O, there were no significant differences noted in side effects of therapy, which were all considered “mild” (actual percentage of side effects not provided).

1. Sleep parameters—after treatment

- a. no sig't diff'ces between treatment arms (e.g., $Ari = 7.3 \pm 3.3$ (C) and 7.4 ± 2.3 (A))—analyzed TST; sleep eff; % of each stage
- b. sig't improvements cf'ed with baseline for both RX arms for Ari ($p < 0.001$)—other parameters showed improvements but p-levels not specified

2. Resp parameters—after treatment

- a. no sig't diff'ces bet. RX arms ($RDI = 8.4 \pm 3.6$ (C); 8.3 ± 2.0 (A))
- b. sig't improvement cf'ed with baseline at $p < 0.001$

3. ESS—NS diff'c bet. RX's (4.1 ± 1.4 (C); 5.2 ± 2.9 (A))

4. mean pressure

manually titrated (10.8 ± 1.7) and 95th %-ile f-up night PSG (10.1 ± 1.3) correlated with $p < 0.005$ (NS diff'c also when cf'ing above with 95th %-ile used at home, as well)

5. compliance

“similar” (5.3 ± 1.8 (C); 5.2 ± 1.4 (A))

- Every one had equal improvement in symptoms.
- Both APAP conditions showed lower mean pressure than the FCPAP.
- 95th percentile pressure for both APAP devices was higher than FCPAP, but not surprising since FCPAP was derived as 90th percentile over first 2 weeks.
- Pressure variability was more with AutoAdjust LT than it was with AutosetT.
- Effect of all three conditions on Epworth Sleepiness Scale and other measures was the same; all improved from baseline equally.
- No special characteristics of any patients who preferred one treatment over the other. No effect of condition on compliance.

- Mean AHI was significantly decreased with FCPAP and each APAP
- AHI with the AutoSet and Horizon devices was significantly lower than with the Virtuoso
- Treatment AHI < 5 h⁻¹ seen in all patients using FCPAP, 10 /12 using Horizon and AutoSet, 6/12 using Virtuoso
- TST was same between nights (devices), and all devices showed increase in %SWS and %REM compared with diagnostic PSG
- No differences in total arousal index between FCPAP and the 3 APAP devices, but respiratory arousals in Virtuoso > (AutoSet or Horizon) > FCPAP (p < 0.05).
- Mean arousals associated with pressure changes in APAP devices similar, range 0.8–1.3 arousals/hr.
- Oxygenation parameters similar in all treatment groups
- mean pressure with fixed CPAP and Horizon
- Mean FCPAP = 9.9 ± 1.8 cmH₂O and was 8.5 ± 2.8 cmH₂O (no significant difference), but mean pressure significantly lower with AutoSet (7.3 ± 1.6 cmH₂O) and Virtuoso (6.5 ± 2.3 cmH₂O). % time with pressure > FCPAP pressure was similar between APAP machines.
- Technicians intervened to reduce mask leak. In 3 patients, dropout was attributed to mask leak that would not have been detected without technician observation.

ESS, OSLER-MWT, SF-36, SAQLI all improved significantly ($p < 0.05$), but there was no significant difference between groups in improvement. Median and 95%ile pressures between groups differed significantly, with lowest median pressures and highest 95%ile pressures in the Chronic APAP group.