

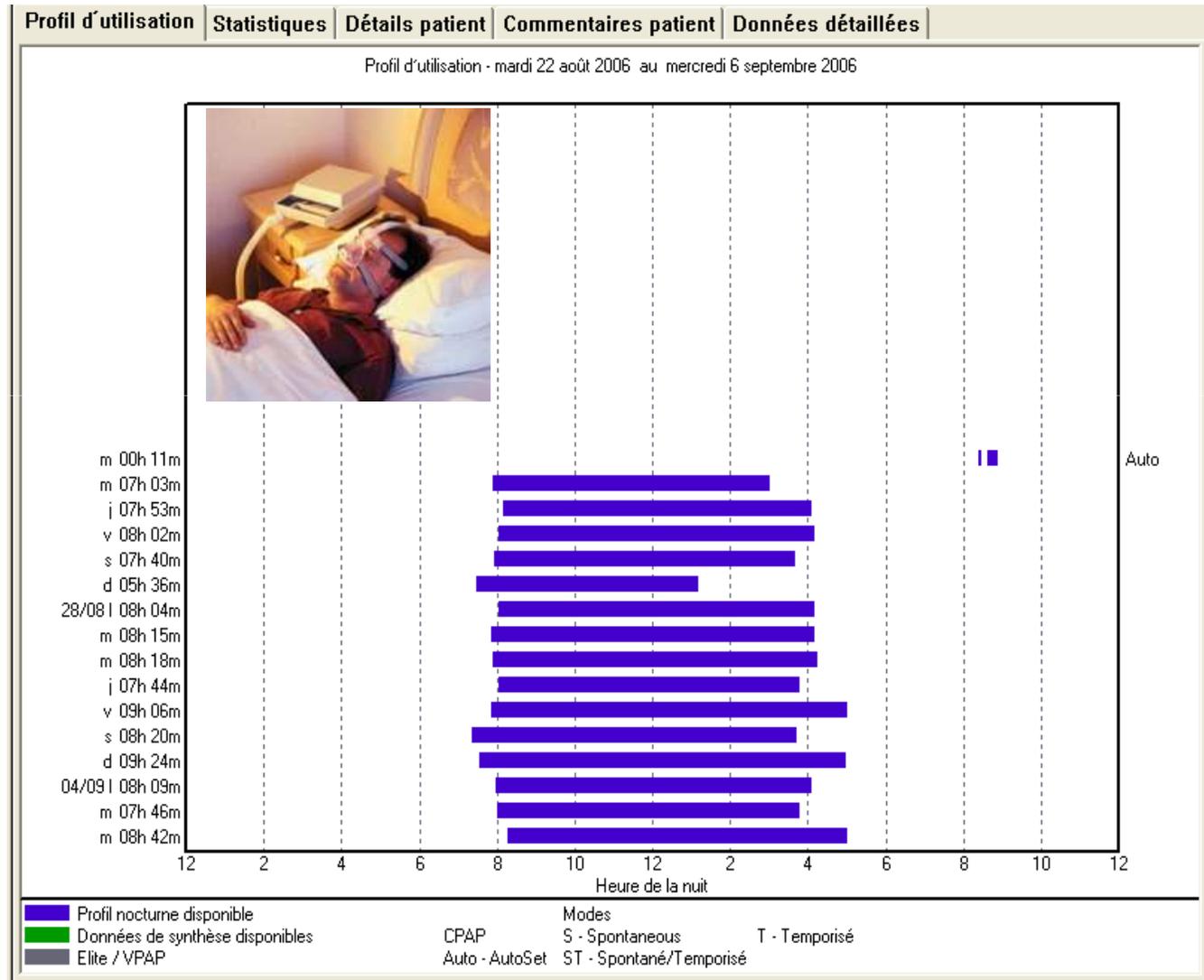
Observance et PPC



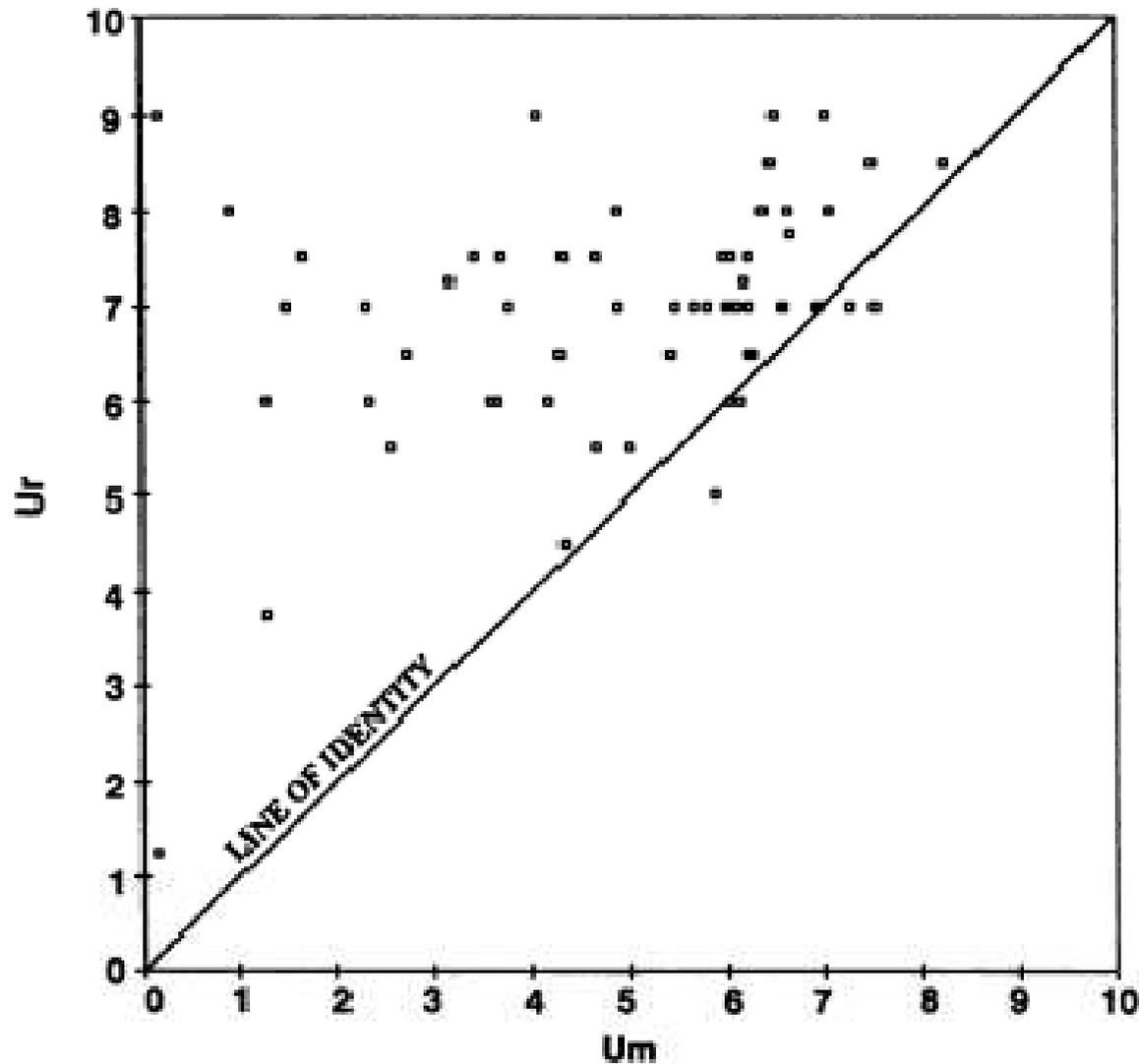
Frédéric Gagnadoux
Service de pneumologie, INSERM U1063
CHU d'Angers



SAHOS: rare maladie chronique dont l'observance thérapeutique peut être mesurée objectivement



Plus fiable que l'observance rapportée



Plus fiable que l'observance rapportée

TABLE 4

Comparison of treatment related side-effects and compliance on continuous positive airway pressure (CPAP) and mandibular advancement device (MAd)

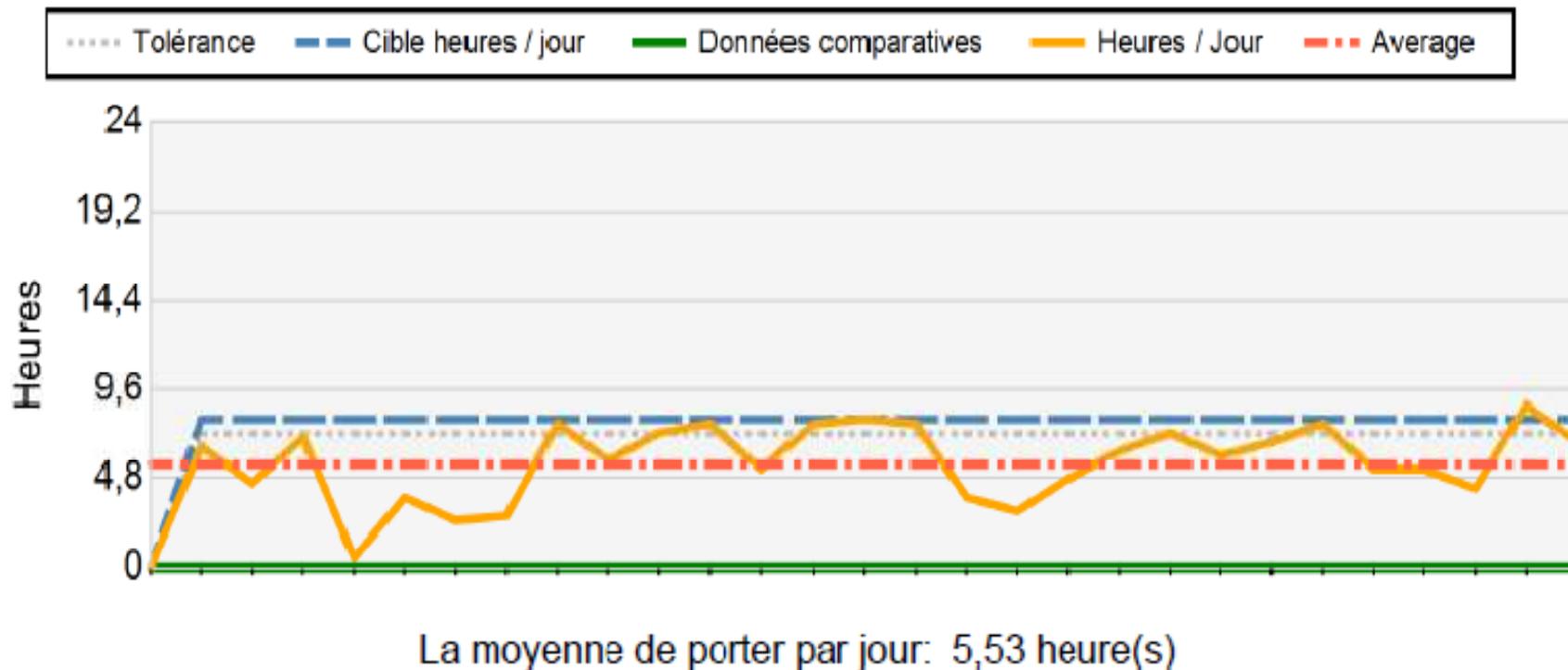
Parameter	CPAP	MAd	p-value
Mean side-effects score	3.2±3.4	3.2±3.1	0.8
Reported compliance			
Hours per night	4.0 (0.9–5.4)	7.0 (6.0–8.0)	<0.001
Nights on treatment %	79 (42-93)	98 (90–100)	<0.001

Bientôt également disponible pour l'OAM



Unité de lecture
(« Reader »)
pour relever
périodiquement
les données

(Liaison avec le PC
par un câble USB)



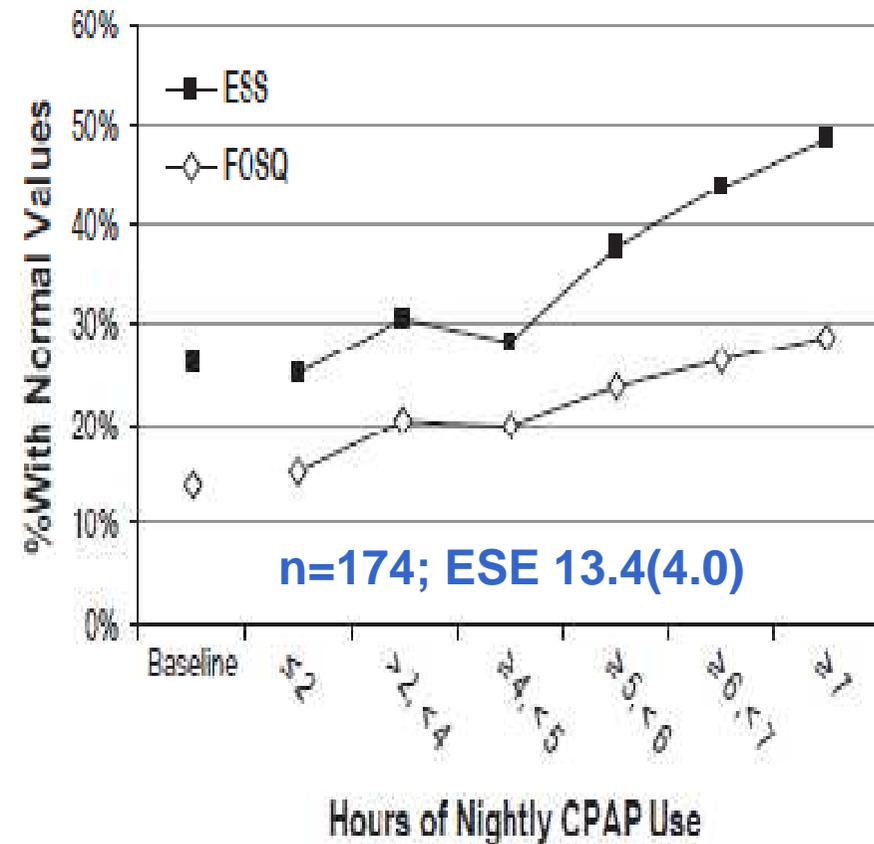
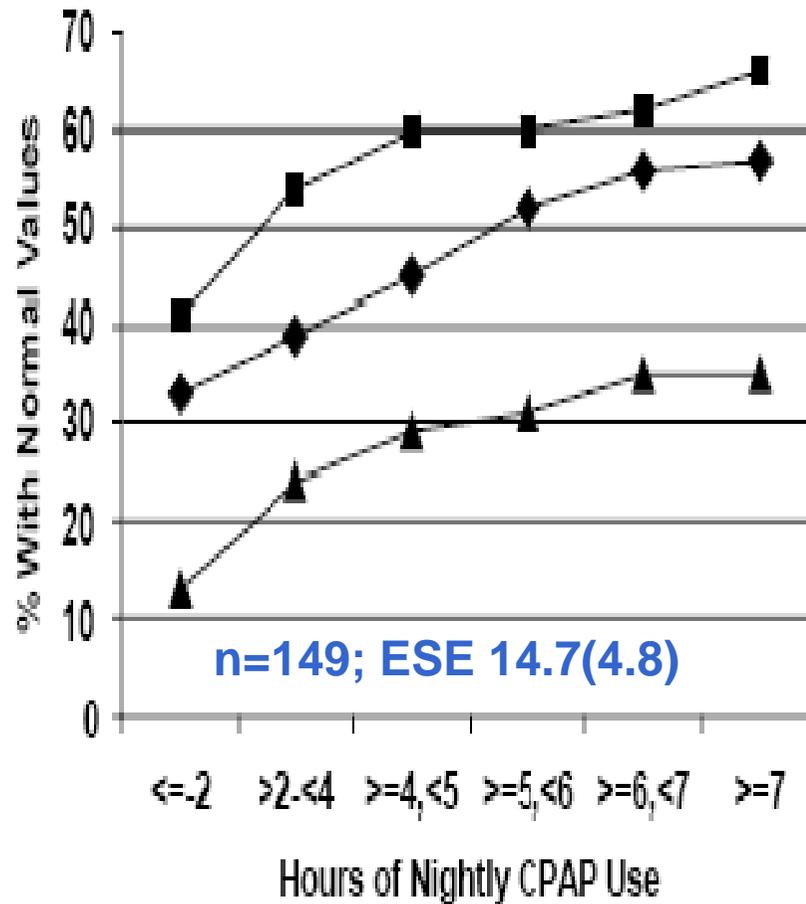
Plan

- *Relation observance – efficacité thérapeutique de la PPC*
- *Que sait-on de l'acceptation et observance à la PPC ?*
- *Les moyens pour optimiser l'acceptation et l'observance*

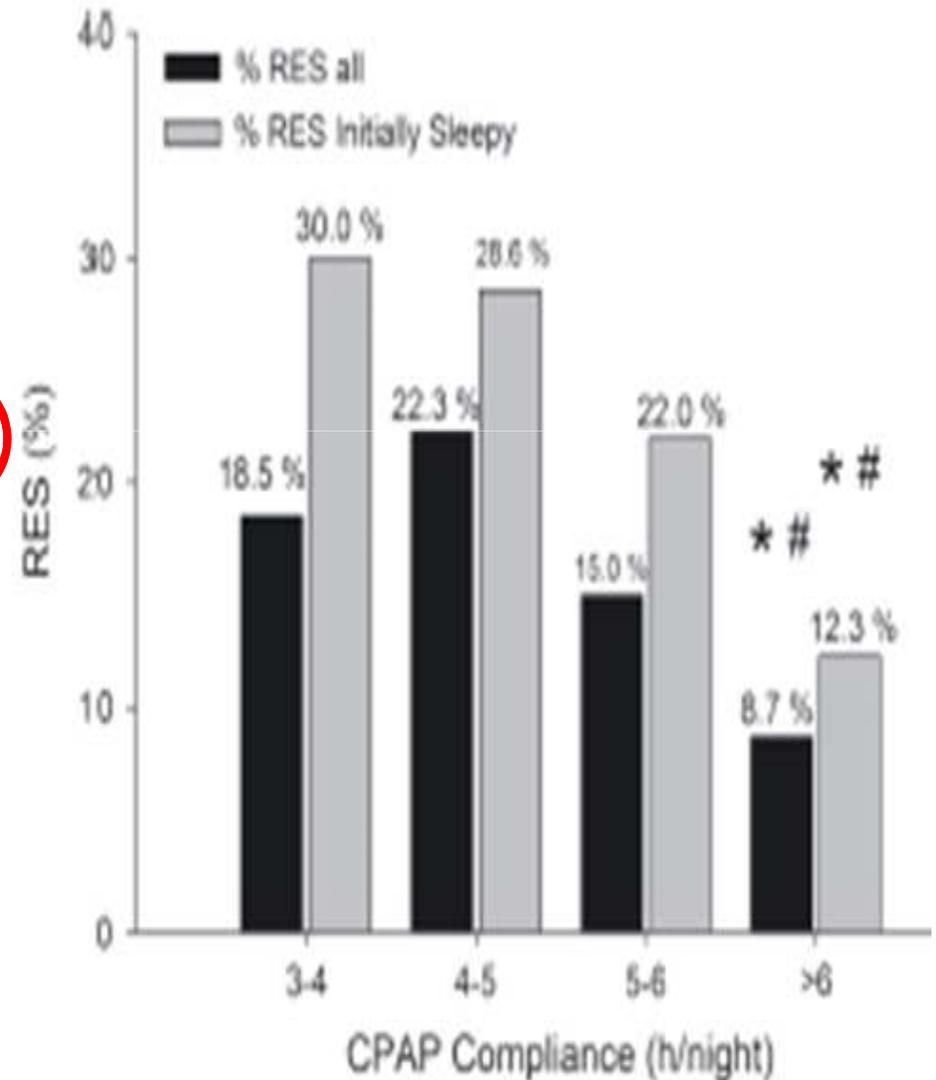
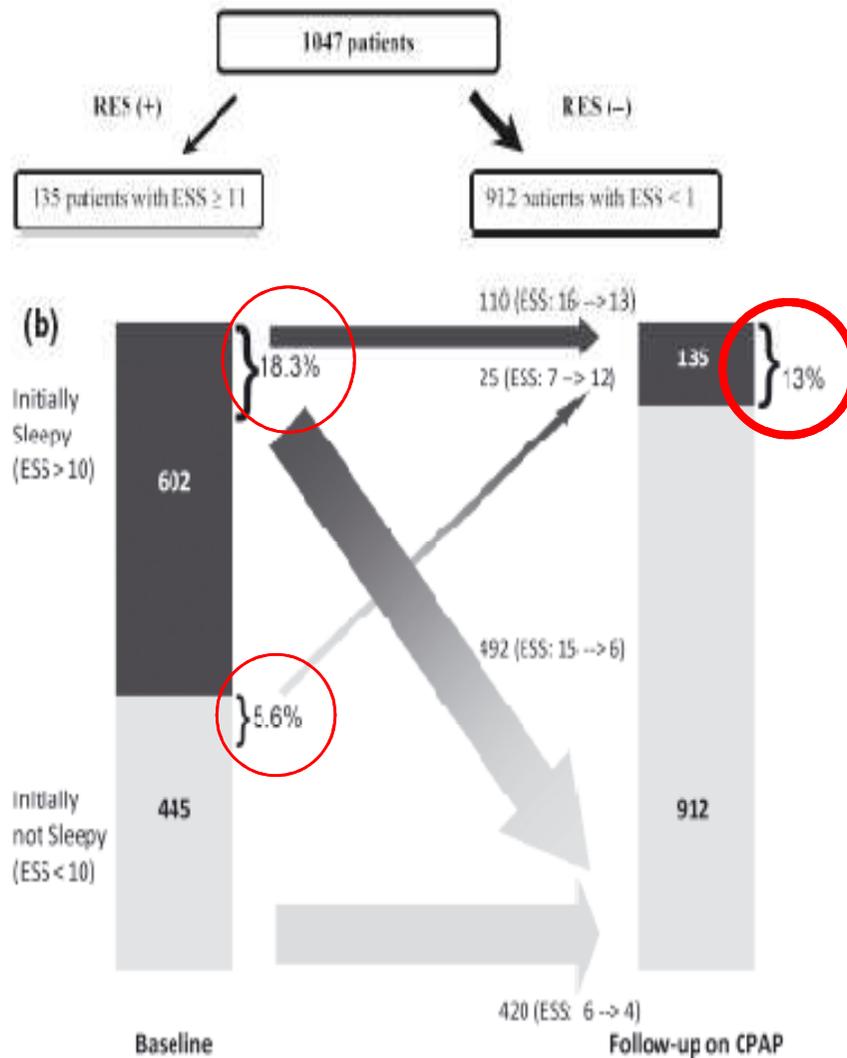
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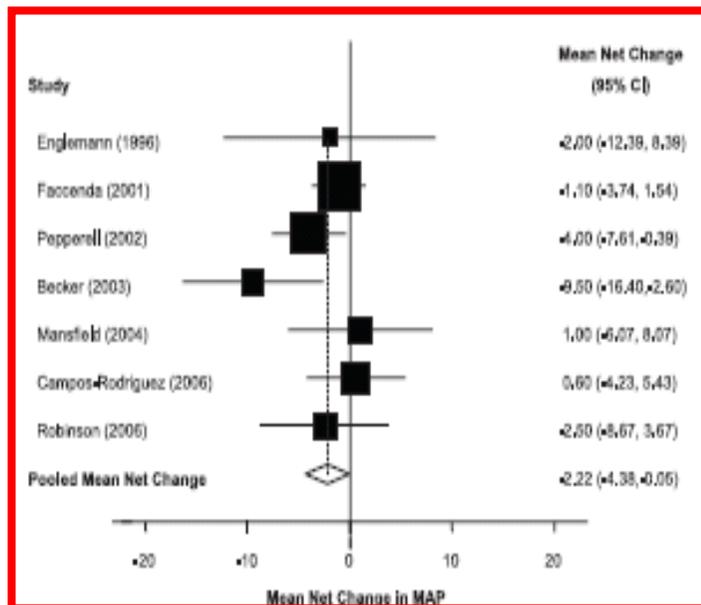
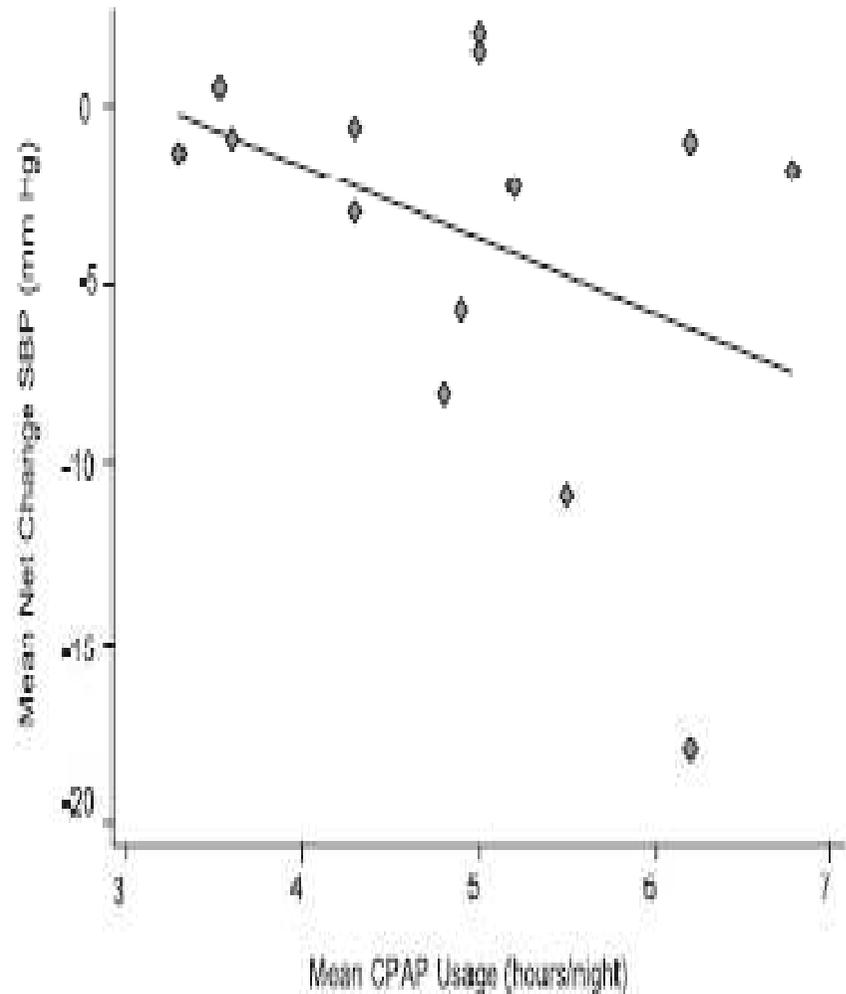
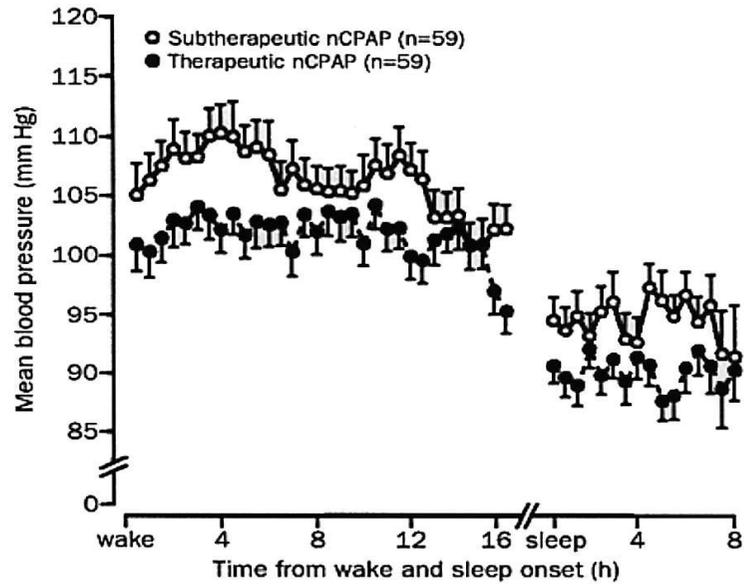
Relation dose-effet sur les symptômes et la vigilance



Relation dose-effet sur les symptômes et la vigilance



Relation dose-effet sur la pression artérielle



Pepperell, Lancet 2002
Bazzano, J Hypertens 2007

Relation dose-effet sur la pression artérielle

359 patients SAHOS (IAH \geq 20), hypertendus, non somnolents (ESE $<$ 11)
 randomisés: PPC (n=178) non traités (n=181); suivi à 3,6 et 12 mois

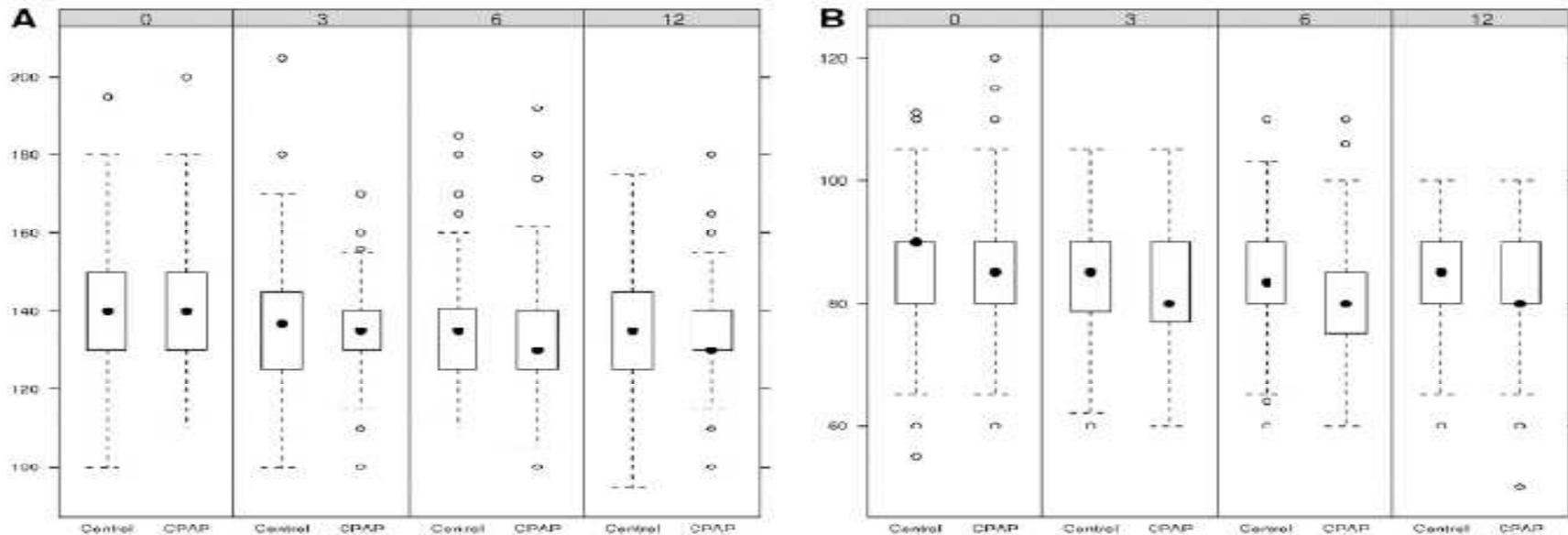


TABLE 5. FOLLOW-UP CHANGE IN BLOOD PRESSURE, BY TREATMENT COMPLIANCE*

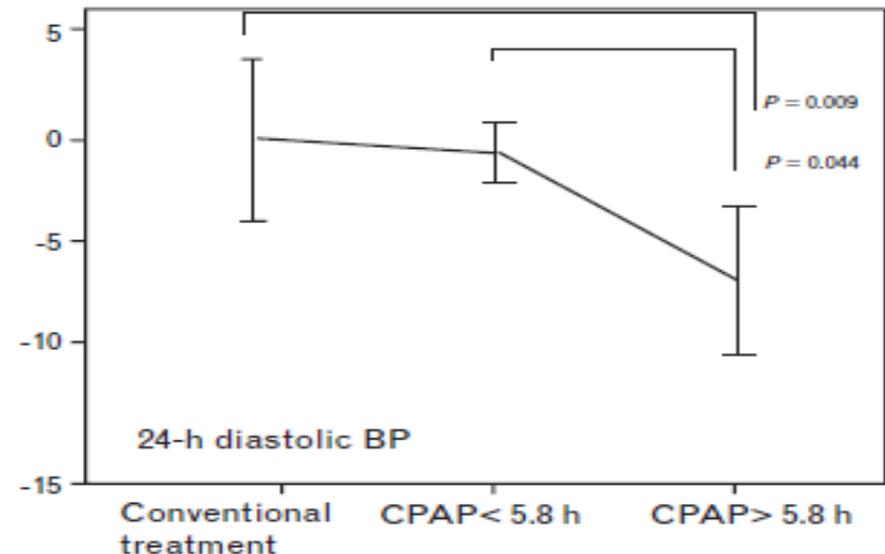
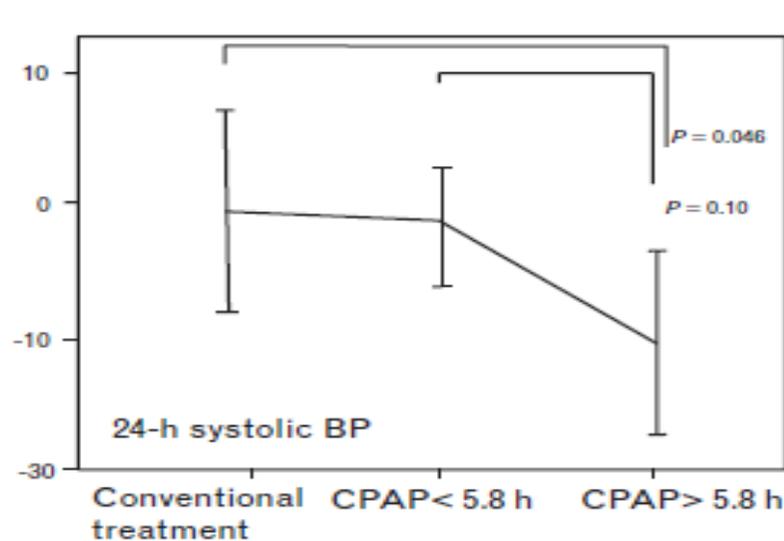
Hours	Systolic Blood Pressure		Diastolic Blood Pressure		Epworth Sleepiness Scale Score	
	Coeff (SE)	95% CI (P Value)	Coeff (SE)	95% CI (P Value)	Coeff (SE)	95% CI (P Value)
\leq 3.60	0.07 (1.692)	-3.98, 4.12 (P = 0.9688)	-1.38 (1.060)	-3.92, 1.15 (P = 0.1926)	-0.208 (0.3693)	-1.09, 0.68 (P = 0.5745)
3.61 to 5.65	-1.43 (1.461)	-4.93, 2.06 (P = 0.3273)	-1.18 (0.912)	-3.37, 1.00 (P = 0.1964)	-1.225 (0.3235)	-2.00, -0.45 (P = 0.0002)
$>$ 5.65	-3.73 (1.372)	-7.02, -0.45 (P = 0.0069)	-3.51 (0.857)	-5.57, -1.46 (P = 0.0001)	-1.357 (0.3013)	-2.08, -0.64 (P $<$ 0.0001)

Relation dose-effet sur la pression artérielle

41 patients SAHOS + HTA réfractaire (PA>140/90 sous thérapie) confirmée à la MAPA; PPC vs pas de traitement du SAHOS pendant 3 mois

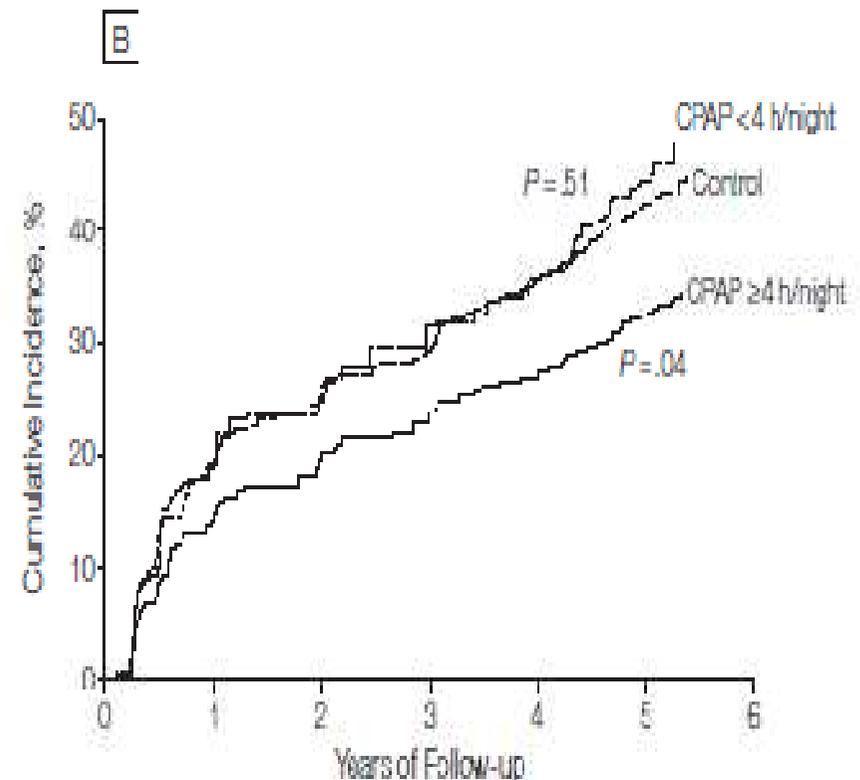
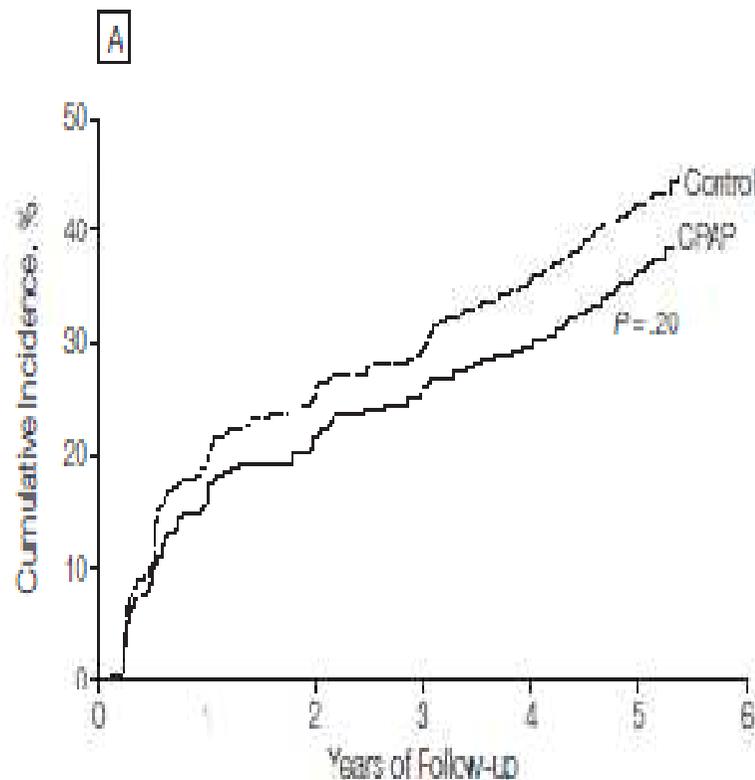
Table 3 Effect of continuous positive airway pressure treatment on blood pressure in 24-h ambulatory BP monitoring-confirmed resistant hypertension patients who completed follow-up

BP (mmHg)	CPAP treatment (N = 20)			Conventional treatment (N = 21)			P value
	Baseline	Follow-up	Difference	Baseline	Follow-up	Difference	
Daytime systolic	140.7 ± 10.5	134.4 ± 11.7	-6.4 ± 12.2	140.6 ± 11.7	140 ± 14	-0.5 ± 13	0.120
Daytime diastolic	82.4 ± 10	78.8 ± 9	-3.6 ± 7	82.1 ± 10.2	82.4 ± 11	0.2 ± 6.6	0.072
Night-time systolic	128.2 ± 16	122 ± 11.5	-6.2 ± 17.3	129.6 ± 14	129.1 ± 16	-0.5 ± 9.5	0.123
Night-time diastolic	74 ± 9.3	68.5 ± 8.3	-5.5 ± 8.7	75.5 ± 12	74.8 ± 16	-0.8 ± 12.5	0.122
24-h mean systolic	137.1 ± 10.6	130.2 ± 11	-7.6 ± 10.9	137.1 ± 10.6	136.5 ± 13.8	-0.6 ± 13.7	0.074
24-h mean diastolic	80.1 ± 8.9	75.2 ± 8.6	-4.9 ± 6.4	79.7 ± 9.9	79.8 ± 12.2	0.1 ± 7.3	0.027



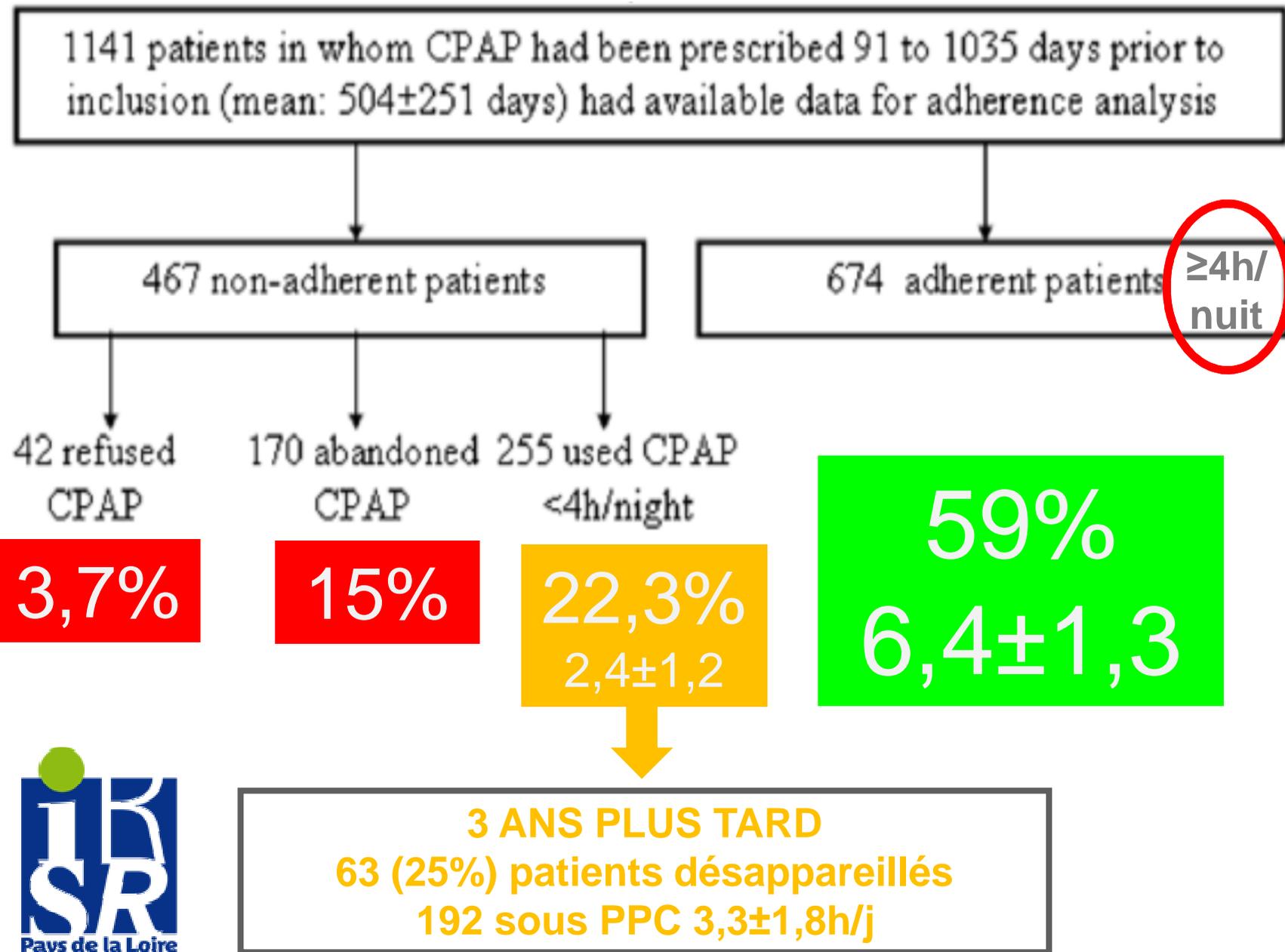
Relation dose-effet sur le risque CV

- 723 patients avec SAS (IAH>20), non somnolents (ESE<11)
- PPC (n=357) vs pas de traitement (n=366)
- Incidence de HTA ou évènement CV (IDM, AVC)



Plan

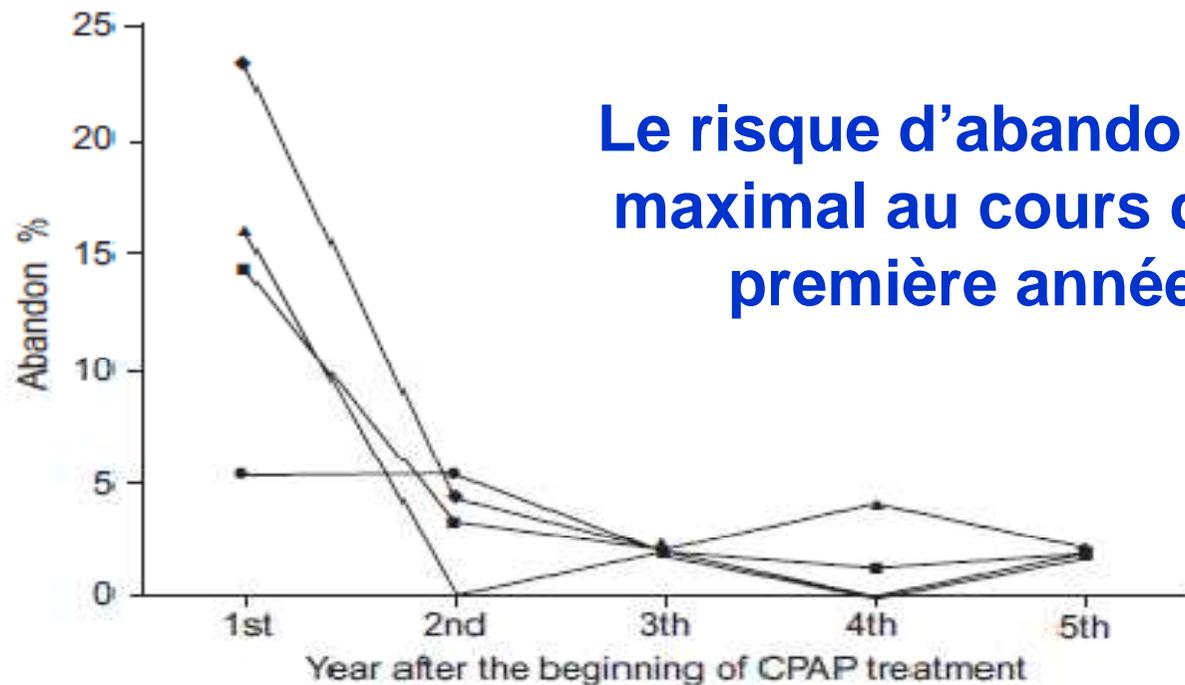
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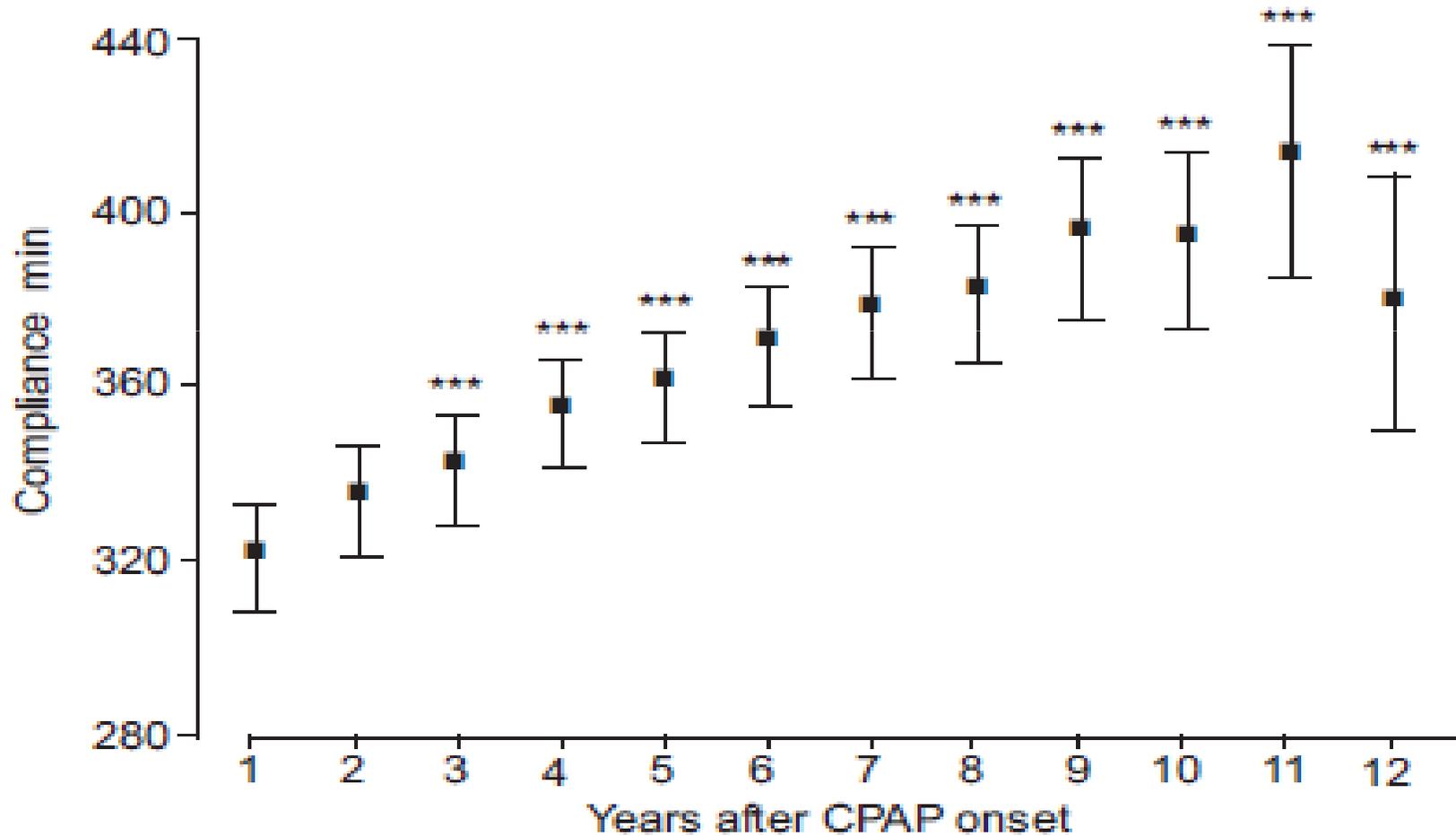
L'importance des premières semaines

MULTIVARIATE ANALYSIS: INDEPENDENT VARIABLES INFLUENCING CONTINUED CPAP USE

	Hazard Ratio*	95% CI†	p Value
AHI < 15 versus AHI ≥ 15	2.48	1.79–3.46	< 0.001
Epworth < 10 versus Epworth > 10	1.92	1.41–2.61	< 0.001
Nonsnorer versus snorer	2.76	1.29–5.95	0.009
CPAP use at 3 mo < 2 h versus ≥ 2 h	13.8	8.86–21.5	< 0.001



L'observance augmente avec le temps



Les facteurs prédictifs d'utilisation ≥ 4 h/nuit

Variables	Odds ratio (IC95%)	p
IAH ≥ 30 vs < 30	1,55 (1,16-2,06)	0,03
IMC (vs < 25 kg/m²)		
≥ 25 et < 30 kg/m ²	1,79 (1,13-2,82)	0,01
≥ 30 kg/m ²	1,77 (1,14-2,73)	0,01
Mariés ou en couple vs seul	1,48 (1,09-2,02)	0,01
Retraités vs actifs	1,41 (1,09-1,82)	0,007

Peu ou pas d'impact de la somnolence

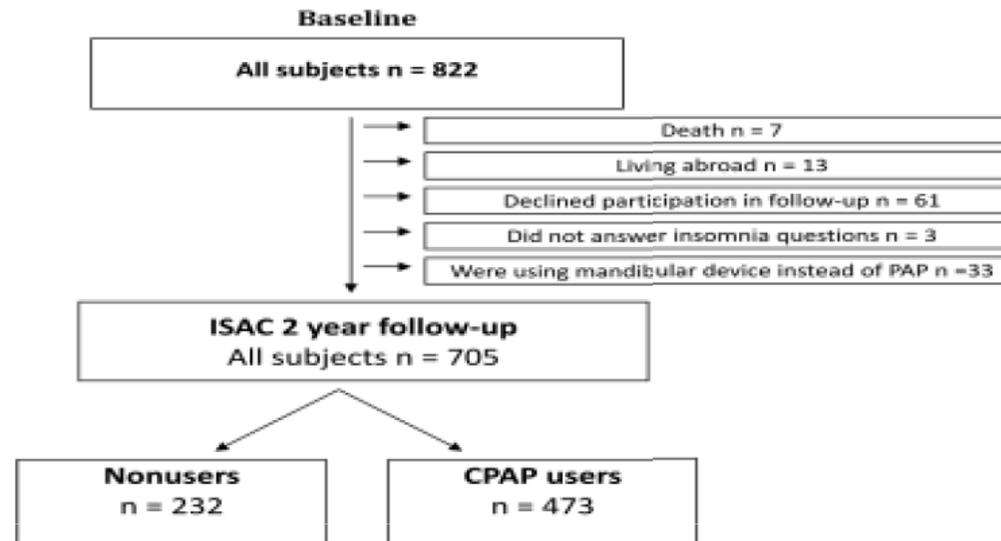
n=2388, 7 centres

Suivi 623(456)j



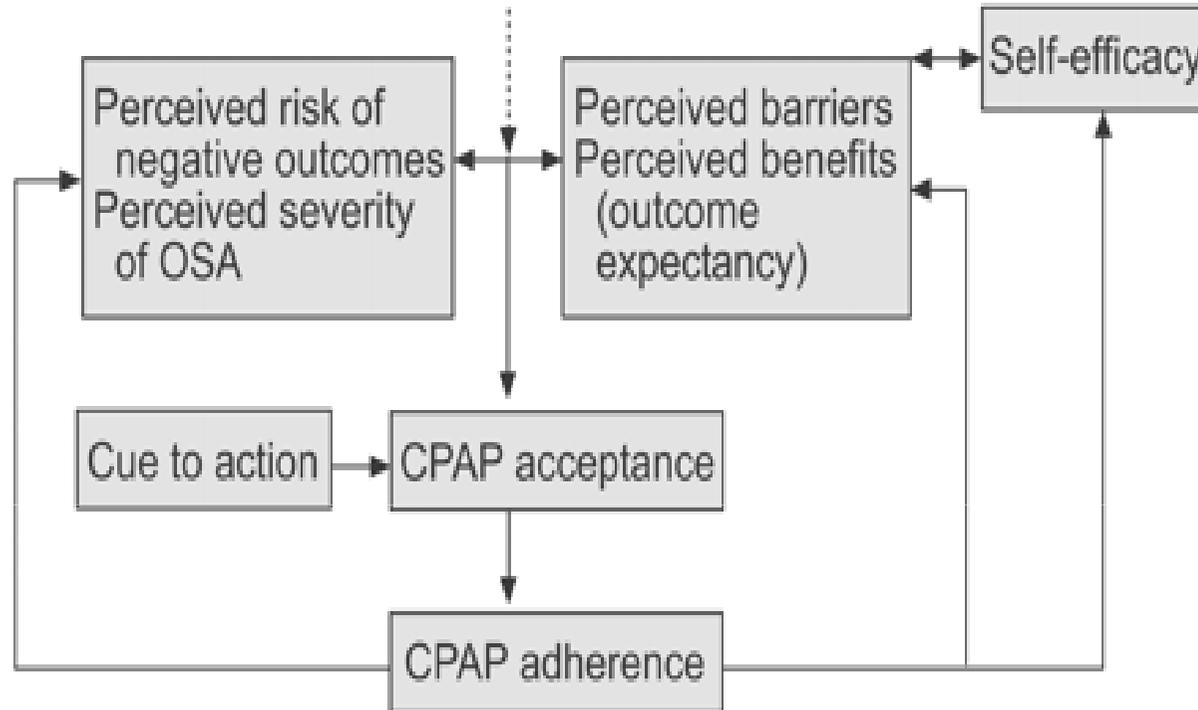
	Non-sleepy patients n=1189		Sleepy patients n=1199	
Probability of continuing CPAP, %				
Whole population	-	78.4	-	81.1
Mild to moderate OSA		71.1		74.0
Severe OSA	-	80.3	-	83.7
CPAP use, h/night	-	5.0 (2.5)	-	4.9 (2.5)
Patients with CPAP use \geq 4h/night, %	-	67.1	-	66.4

Insomnie: influence variable selon le type



	PAP use	P value	PAP use	P value*
	Unadjusted odds		Adjusted odds Ratio	
	Ratio (95% CI)		(95% CI)*	
Initial insomnia (n = 109)	0.56 (0.37-0.86)	0.007	0.59 (0.38-0.91)	0.01
Middle insomnia (n = 418)	1.01 (0.73-1.40)	0.93	0.98 (0.70-1.37)	0.89
Late insomnia (n = 194)	0.53 (0.37-0.74)	<0.001	0.55 (0.39-0.79)	<0.001
Isolated middle insomnia (n = 244)	1.61 (1.14-2.27)	0.007	1.48 (1.04-2.12)	0.03

Perception de la maladie et de son traitement



⊕ Perception du handicap lié à la maladie

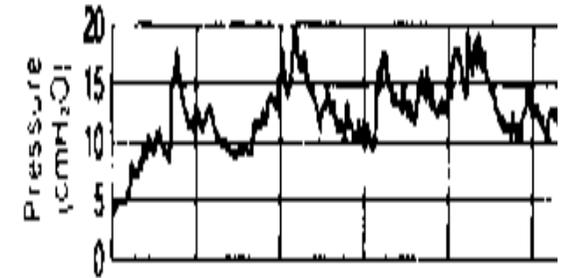
⊕ Bénéfices attendus sous PPC

⊖ Perception des risques liés au SAHOS

Plan

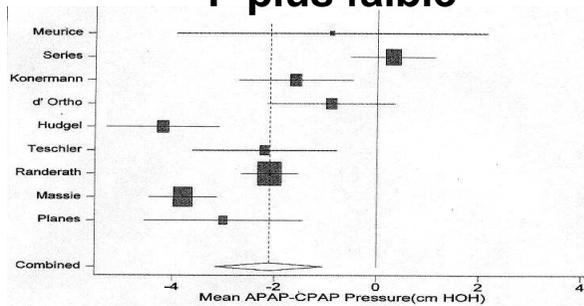
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Approche technologique: PPC AUTOPILOTE

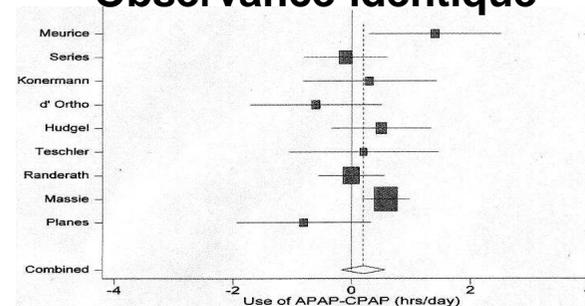


Ayas NT, méta-analyse; sleep 2004.

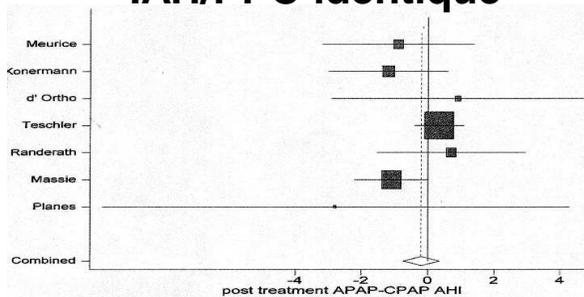
P plus faible



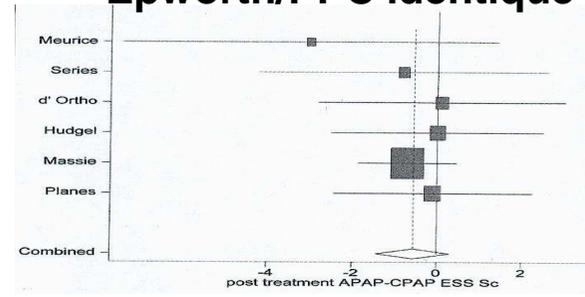
Observance identique



IAH/PPC identique



Epworth/PPC identique

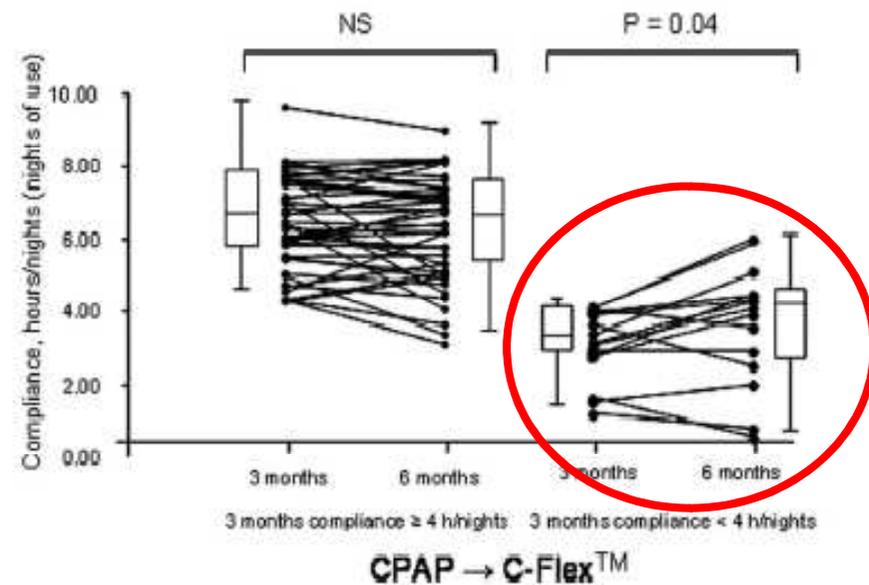
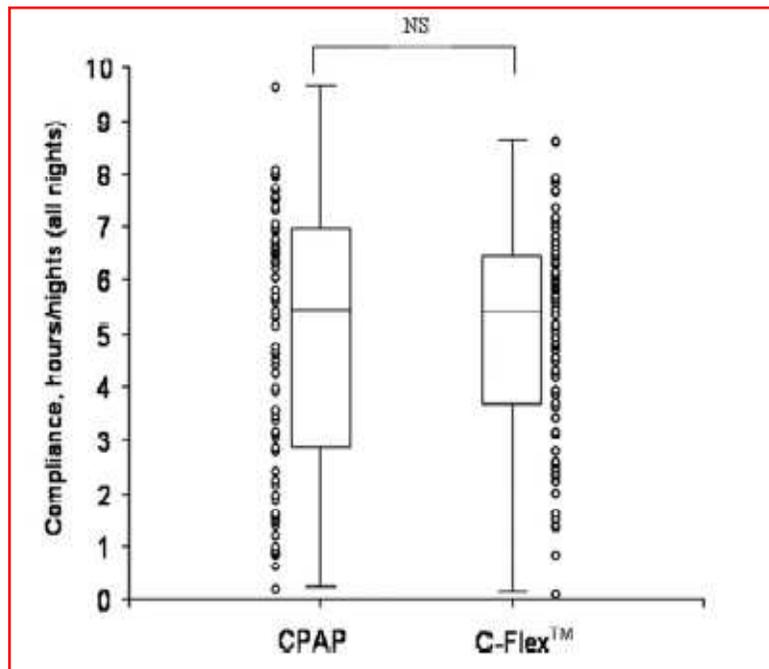
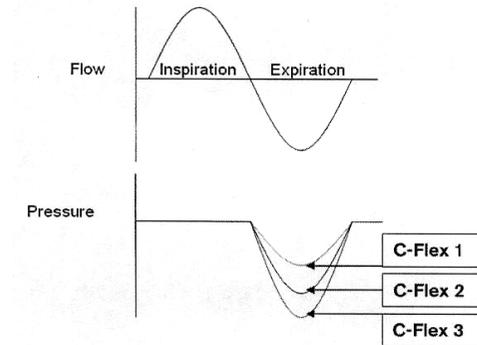


Cochrane Database Syst Rev. 2009 Oct 7;(4):CD003531

Auto-CPAP (30 studies, 1136 participants): a statistically significant difference in machine usage of 0.21 hours/night (0.08 to 0.35) was observed in favour of auto-CPAP from cross-over studies. This difference is of questionable clinical significance.

Approche technologique: FLEX PPC

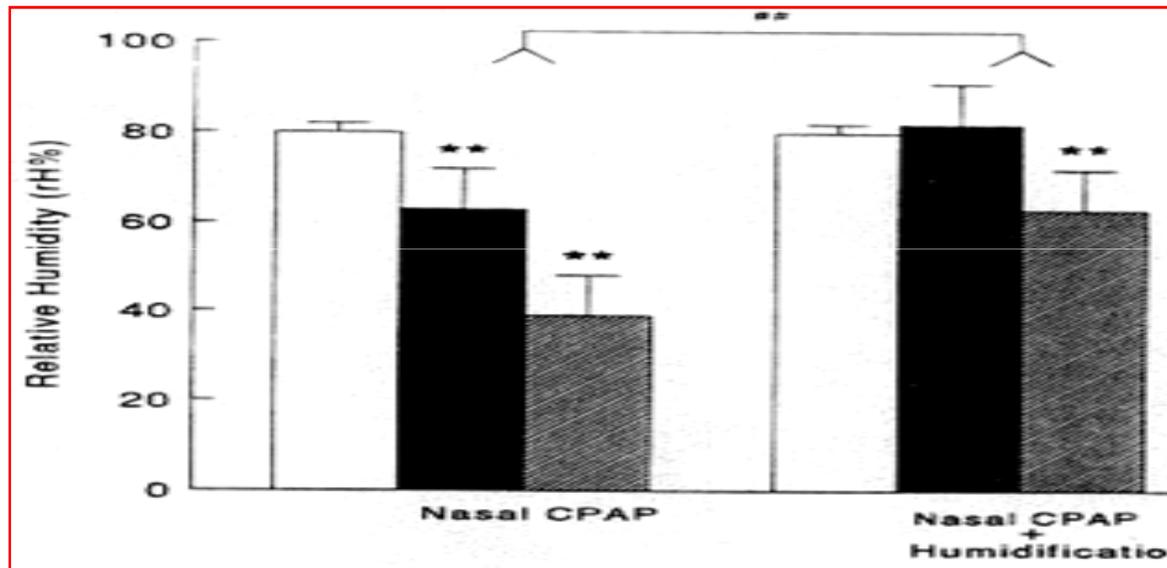
- 218 patients (IAH 44 ± 21)
- Randomisation pour 3 mois PPC constante vs Cflex
- Pas de # d'observance, effets secondaires, QOL
- Amélioration de l'observance lors du passage fixe → Cflex chez les peu observants (<4h)



Approche technologique: HUMIDIFICATION CHAUFFANTE



- Diminue l'assèchement de l'air sous PPC



- Améliore l'observance et diminue les effets secondaires chez les patients présentant une intolérance nasale à la PPC
- Pas d'indication en systématique

Impact de l'accompagnement et de l'éducation thérapeutique

- Education « standard » vs « renforcé »:
 - 2 sessions d'1 heure espacées d'1 semaine, 10 participants
 - Vidéo de témoignages de patients traités
 - Information écrite

Table 2—Stages in the refusal of CPAP and hours of CPAP use

	CBT	TAU	P
Rejected CPAP prior to titration study	0	3	=0.25
Did not take CPAP machine home after titration	4	17	=0.002
Mean nightly CPAP usage (mask-on time) over 7 days (hours)	5.90 (2.31)	2.97 (2.88)	< 0.0001
Mean nightly CPAP usage (mask-on time) over 28 days	5.38 (2.55)	2.51 (2.70)	< 0.0001
Proportion using CPAP ≥ 4 hours/night at 7 days	43/49	19/49	<0.0001
Proportion using CPAP ≥ 4 hours/night at 28 days	37/48	15/48	<0.0001
Proportion using CPAP ≥ 6 hours/night at 28 days	24/48	7/48	= 0.0005
Self efficacy	4.20 (0.72)	3.6 (0.9)	<0.0001
Social support	4.43 (0.81)	3.97 (0.88)	<0.008
Outcome expectations	7.02 (0.75)	6.94 (1.03)	= 0.6

P values are for independent samples t-tests between treatment groups for continuous variables, and chi square test for proportions.

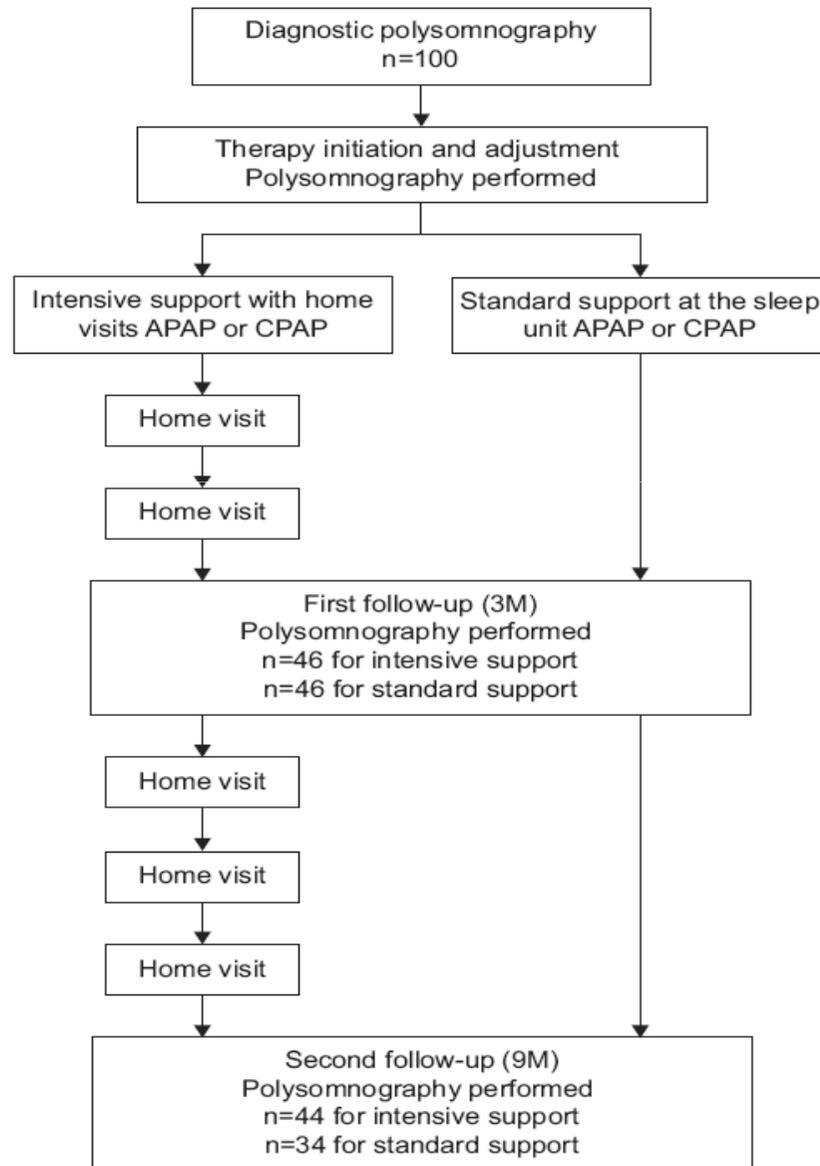
Educational, supportive and behavioural interventions to improve usage of continuous positive airway pressure machines for adults with obstructive sleep apnoea



**THE COCHRANE
COLLABORATION®**

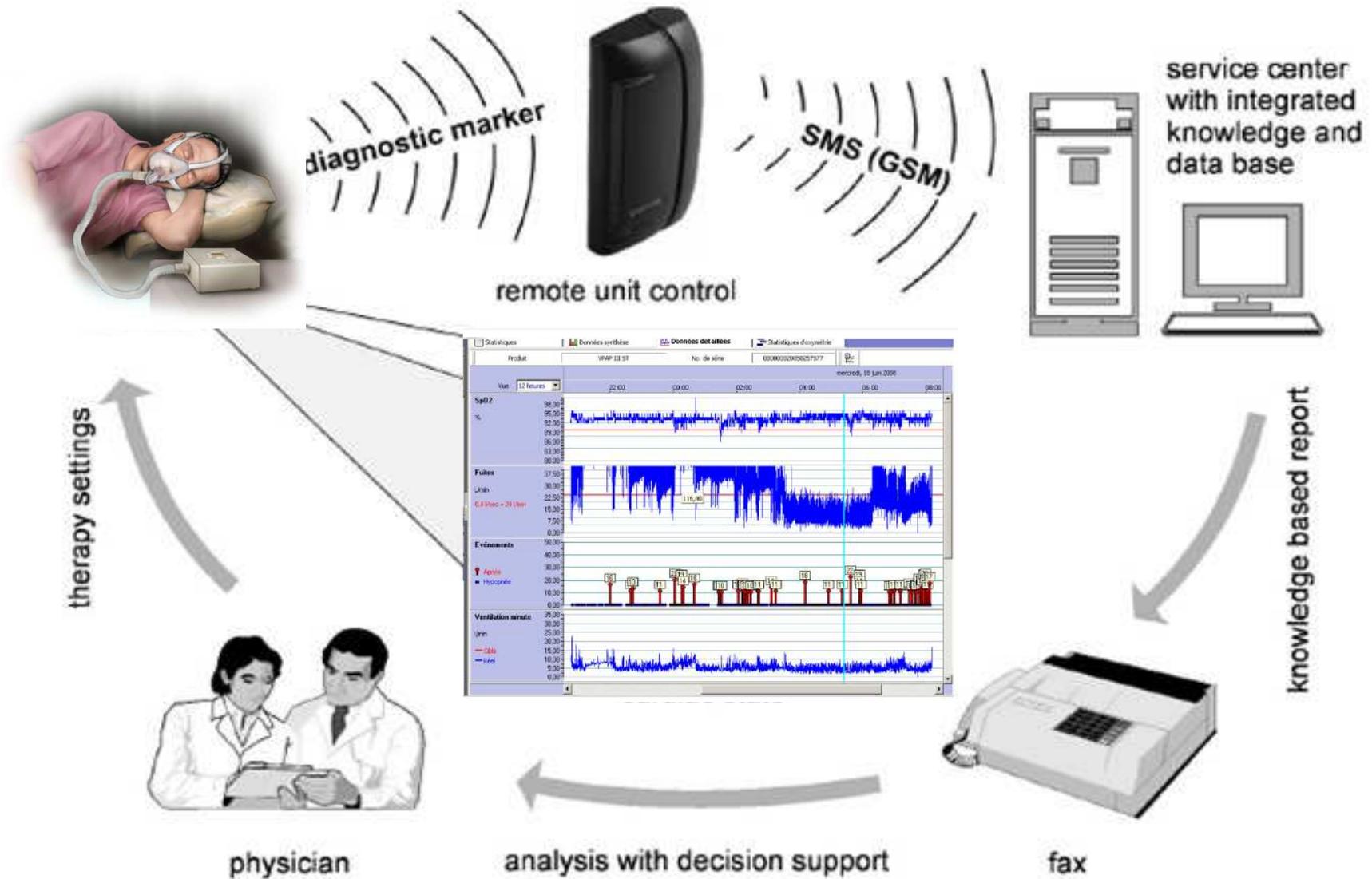
Support/encouragement offered on an ongoing basis led to increased average machine usage (0.59 hours/night (95% CI 0.26 to 0.92))

Comparaison des 2 approches

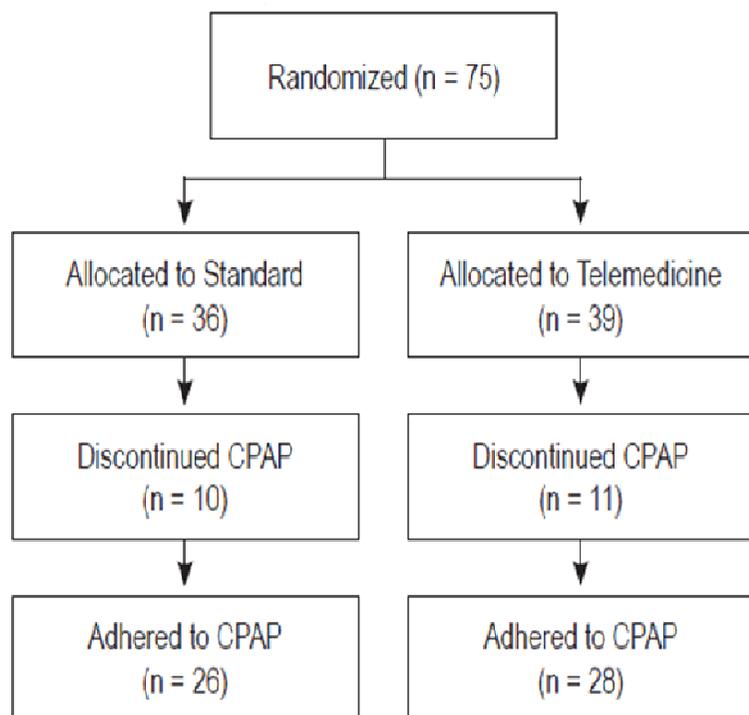


Intensive support		Standard support	
3M	9M	3M	9M
5.5 ± 0.2	5.7 ± 0.2	5.4 ± 0.3	4.6 ± 0.4*
82.7 ± 2.7	80.4 ± 2.8	68.7 ± 4.6*	57.0 ± 5.9**
79.6 ± 5.4	80.6 ± 3.2	75.7 ± 4.1	64.2 ± 6.2*
APAP		CPAP	
3M	9M	3M	9M
5.4 ± 0.2	5.2 ± 0.4	5.4 ± 0.3	5.1 ± 0.3
76.0 ± 3.9	67.9 ± 5.0	75.0 ± 4.1	69.2 ± 4.9
73.4 ± 3.1	72.5 ± 5.0	81.4 ± 5.8	72.1 ± 5.2

Intérêt de la télémédecine?



Intérêt de la télémédecine?



The research coordinator at UBC reviewed the downloaded information every weekday morning except holidays and contacted the patient if any of the following were present: mask leak > 40 L/min for greater than 30% of the night, < 4 hr of use for two consecutive nights, machine measured AHI > 10 events/hr, and 90th percentile of pressure > 16 cm H₂O.

Table 2—Results of standard and telemedicine groups^a

	Standard	Telemedicine	P value
Mean % days used	45.9 ± 38.0	55.9 ± 40.0	0.19
Mean adherence (min per day)	105 ± 118	191 ± 147	0.006
Mean adherence on nights PAP used (min per day)	207 ± 106	321 ± 80	< 0.0001
Mean decrease in ESS	0.7 ± 5.2	1.6 ± 5.1	0.49
Mean AHI on treatment	6.6 ± 4.8	4.7 ± 3.8	0.12
Mean amount of time spent with patients (min over 3 mo)	143 ± 48	210 ± 42	< 0.0001

^aResults are given as means ± SD. AHI, apnea hypopnea index; ESS, Epworth Sleepiness Scale Score; PAP, positive airway pressure.

Conclusions

- **Effet dose de la PPC justifiant une surveillance régulière de l'observance (1^{ière} année+++)** et des efforts pour l'optimiser
- **Accompagnement et éducation thérapeutique > technologie**