

# CPAP POUR LE SYNDROME METABOLIQUE CHEZ LES PATIENTS AYANT UN SYNDROME D'APNEE DE SOMMEIL



# **INTRODUCTION:**

le syndrome d'apnée de sommeil est souvent associée à une augmentation de la prévalence de syndrome métabolique. On ignore si le traitement d'une SAS obstructive par le CPAP modifierait celle si.

- **Méthodes:**

**patients:**

Dans cet étude, des patients âgés entre 30 et 65 ans ont été étudiés a partir de `` the sleep laboratory of the departement of medecine” de touts les instituts des sciences de New Delhi à l’Inde.

**Critères d’inclusion:** absence de traitement par la CPAP antérieurement ou actuellement, SAS modérée à sévère, somnolence diurne excessive.

**Critères d’exclusion:** HTA traité, diabète type 2, dyslipidémie ou bien une lésion des organes.

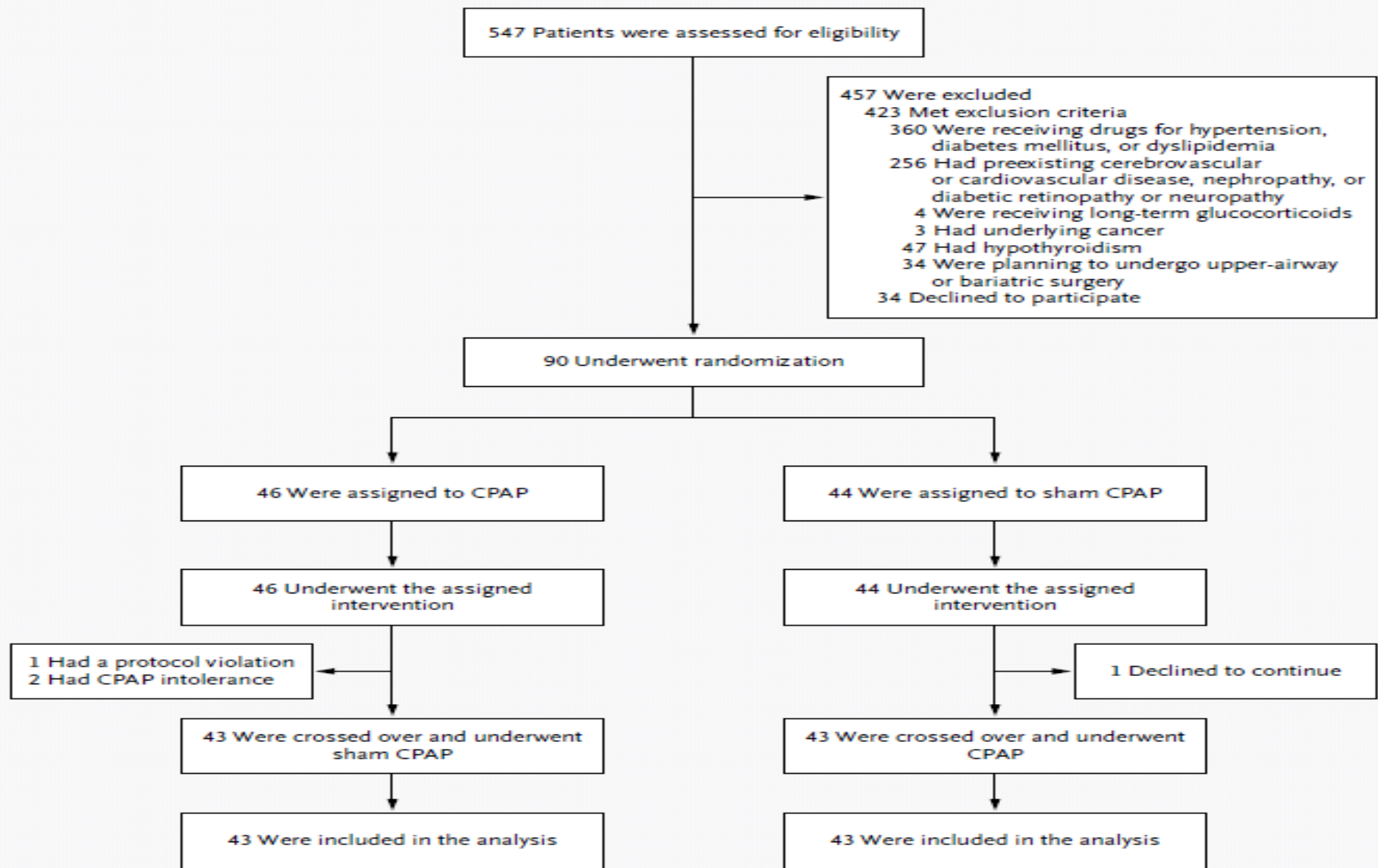
- **Randomisation:**

90 patients ont été assignés et randomisés dans cet étude partagés en 2 groupes dont ils ont été traités soit par CPAP soit Sham CPAP pendant 3 mois suivi d'une période de sevrage d'un mois( Sham CPAP = masque similaire à la CPAP mais ayant un effet placebo).

The background image shows a hospital building with a sign that reads "SERVICE DES URGENCES" in French and Arabic. There are people and a bicycle in the foreground, and a sign that says "RESERVE POUR LES AMBULANCES".

- **Résultats:**

90 patients sont randomisés dont 46 dans le groupe CPAP et 44 dans le groupe Sham CPAP. 3 patients pour le 1<sup>er</sup> groupe et un dans le 2<sup>ème</sup> groupe n'ont pas complétés le protocole, par conséquent 86 malades ont complété l'étude.



**Figure 1. Screening, Enrollment, and Follow-up of the Study Patients.**  
Some patients were excluded for more than one reason.

**Table 1. Baseline Characteristics of the Study Population.\***

Characteristic	CPAP First (N=43)	Sham CPAP First (N=43)	P Value
Age — yr	45±8	45±8	0.83
Male sex — no. (%)	36 (84)	41 (95)	0.08
BMI†	33.8±4.7	31.8±5.2	0.06
Waist circumference — cm	115.2±12.1	112.0±12.1	0.24
Percent of predicted neck circumference — %	101.2±9.5	100.4±7.7	0.31
Systolic blood pressure — mm Hg	133.2±9.9	131.1±8.4	0.19
Diastolic blood pressure — mm Hg	89.1±8.1	87.8±7.6	0.60
Hypertension — no. (%)	20 (47)	20 (47)	1.00
Fasting blood glucose — mg/dl	107.2±15.4	105.9±13.0	0.82
Diabetes mellitus — no. (%)	21 (49)	24 (56)	0.52
Fasting insulin — IU/liter			0.24
Median	13.0	12.1	
Interquartile range	9.0–19.5	7.6–15.4	
Insulin resistance			0.15
Median	3.6	3.1	
Interquartile range	2.3–5.0	2.0–4.0	
Glycated hemoglobin — %	6.0±0.6	5.6±0.5	0.01
Triglycerides — mg/dl	197.3±93.1	156.2±62.0	0.02
Cholesterol — mg/dl			
Total	211.7±36.1	191.1±39.3	0.01
HDL	44.0±5.9	41.8±6.4	0.08
LDL	128.2±29.2	117.1±31.0	0.09
Dyslipidemia — no. (%)	36 (84)	38 (88)	0.53

**Table 2. Polysomnographic Variables in the Study Population.\***

Variable	CPAP First (N= 43)	Sham CPAP First (N= 43)	P Value
ESS score	14.8±3.7	14.1±3.5	0.33
AHI score — events/hr	47.9±19.6	47.8±17.3	0.99
Arousal index score — events/hr	29.5±4.0	27.8±3.4	0.74
Total sleep time — min	442.1±10.2	435.4±7.3	0.59
Sleep stage — % of total sleep time			
N1	63.7±11.9	67.9±10.6	0.09
N2			0.15
Median	13.6	11.7	
Interquartile range	9.8–21.1	8.0–14.7	
N3			0.47
Median	3.2	2.3	
Interquartile range	0.6–6.5	0.7–4.8	
REM			0.93
Median	15.5	15.0	
Interquartile range	8.1–23.1	9.2–18.8	
Oxygen saturation — %			
Minimum			0.68
Median	69.7	69.7	
Interquartile range	60.0–76.2	59.1–80.2	
Baseline minus minimum			0.99
Median	24.8	24.7	
Interquartile range	20.5–32.7	15.1–34.5	
Oxygen saturation <90% — % of total sleep time	28.7±23.5	29.7±24.6	0.84



**Table 3. Effects of CPAP versus Sham CPAP on Components of the Metabolic Syndrome.\***

Variable	Treatment Effect		Difference or Odds Ratio (95% CI)	P Value†
	CPAP (N=86)	Sham CPAP (N=86)		
Abdominal circumference — cm	-0.53±2.42	0.20±3.49	-0.73 (-2.15 to 0.68)	0.32
Systolic blood pressure — mm Hg	-3.07±8.02	0.79±7.22	-3.86 (-6.37 to -1.35)	0.001
Diastolic blood pressure — mm Hg	-2.81±6.07	-0.33±5.25	-2.49 (-4.13 to -0.85)	<0.001
Fasting blood glucose — mg/dl	-1.78±11.37	-0.43±9.40	-1.35 (-4.43 to 1.74)	0.10
Fasting insulin — mU/liter	1.75±11.48	3.33±14.54	-1.59 (-5.60 to 2.42)	0.35
Insulin resistance	0.42±3.10	0.81±3.67	-0.39 (-1.40 to 0.62)	0.23
Glycated hemoglobin — %	-0.03±0.42	0.19±0.49	-0.21 (-0.36 to -0.07)	0.003
Triglycerides — mg/dl	-18.86±71.43	-0.21±80.75	-18.65 (-41.57 to 4.27)	0.02
Cholesterol — mg/dl				
Total	-9.36±31.46	3.90±21.95	-13.26 (-21.25 to -5.28)	0.005
HDL	-0.05±12.85	-0.08±12.28	0.04 (-3.82 to 3.89)	0.75
LDL	-5.72±26.56	3.83±20.44	-9.55 (-16.65 to -2.46)	0.008
Non-HDL	-9.32±32.94	3.98±22.74	-13.30 (-21.79 to -4.82)	0.009
HDL:total cholesterol	0.01±0.07	-0.01±0.07	0.02 (-0.01 to 0.04)	0.01
LDL:total cholesterol	0.00±0.08	0.01±0.07	-0.01 (-0.03 to 0.01)	0.58
Reversal of the metabolic syndrome — no. (%)	11 (13)	1 (1)	12 (9 to 99)	0.003

**Table 4.** Effect of CPAP versus Sham CPAP on Anthropometric Variables.\*

Variable	Treatment Effect		Difference (95% CI)	P Value†
	CPAP (N= 86)	Sham CPAP (N=86)		
ESS score	-5.3±4.4	-0.6±2.0	-4.7 (-5.6 to -3.8)	<0.001
Weight (kg)	-0.37±2.45	0.33±2.20	-0.70 (-1.40 to -0.03)	0.03
BMI	-0.10±0.86	0.18±0.74	-0.29 (-0.51 to -0.06)	<0.001
Waist-to-hip ratio	-0.001±0.027	0.130±1.207	-0.131 (-0.389 to 0.127)	0.49
Percent of predicted neck circumference (%)	-0.72±2.47	0.02±3.16	-0.74 (-1.52 to 0.05)	0.07
Subcutaneous fat (cm <sup>2</sup> )	-0.55±2.56	0.34±2.67	-0.89 (-1.67 to -0.12)	<0.001
Visceral fat (cm <sup>2</sup> )	-1.05±2.63	0.01±2.18	-1.06 (-1.80 to -0.32)	0.01
Ratio of visceral fat to subcutaneous fat	-2.36±12.20	-0.48±8.27	-1.88 (-5.13 to 1.37)	0.49
CIMT (mm)	0.000±0.102	0.014±0.075	-0.014 (-0.040 to 0.001)	0.07

The background image shows a multi-story hospital building. At the top, there is Arabic text in pink: 'الخدمة الطبية الطارئة' (Emergency Medical Service). Below it, in large pink letters, is 'SERVICE DES URGENCES'. In the foreground, there is a sign that reads 'RESERVE POUR LES AMBULANCES' (Reserve for Ambulances). Several people are visible near the entrance, and a motorcycle is parked in the foreground.

- **Conclusion:**

Chez les patient ayant un SAS modéré ou sévère, un traitement pendant 3 mois par la CPAP permet de diminuer la pression artérielle, et inverser partiellement les anomalies métaboliques.