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Association of positive airway pressure adherence with the burden of antihypertensive medications in hypertensive patients with sleep apnoea: data from the IRSR Pays de la Loire Sleep Cohort.

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✓ I have no real or perceived conflicts of interest that relate to this presentation.

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Evidence before this study

- OSA prevalence in HTA patients is 25-80%.
- PAP reduces BP by - 2 to -3 mmHg in RCTs, with a dose effect of PAP use but a possible loss of efficacy over time.

➔ **Oral Antihypertensive Drugs (OADs)** reduces BP by -5 to -9 mmHg in RCTs

➔ Lifestyle intervention not only reduces BP by - 5 to -11 mmHg but also reduces the number of **OADs** required for BP control

➔ Unlike lifestyle interventions, the long-term impact of PAP use on the burden of OADs remains unclear.

Aims / Learning objectives

1. The primary objective of this study was to evaluate the impact of one-year of PAP use on the number of OADs delivered to patients with prevalent hypertension at OSA diagnosis and PAP initiation.

➔ Impact on OAD number after one year ?

Material and methods

Sleep Cohort + French health insurance database = Real-life data base

T0 = PAP initiation for OSA patients with hypertension

T1 = 1 year

OAD score
MPR
Medication Possession Ratio (MPR)

OAD score
PAP use
MPR

-<u>The primary endpoint:</u> change in OAD score, reflecting the change in the number of delivered OAD class.

<u>- PAP use groups defined as follows:</u> termination, <4hours/day, 4-6 hours/day, and ≥6 hours/day.

Results (1): study population

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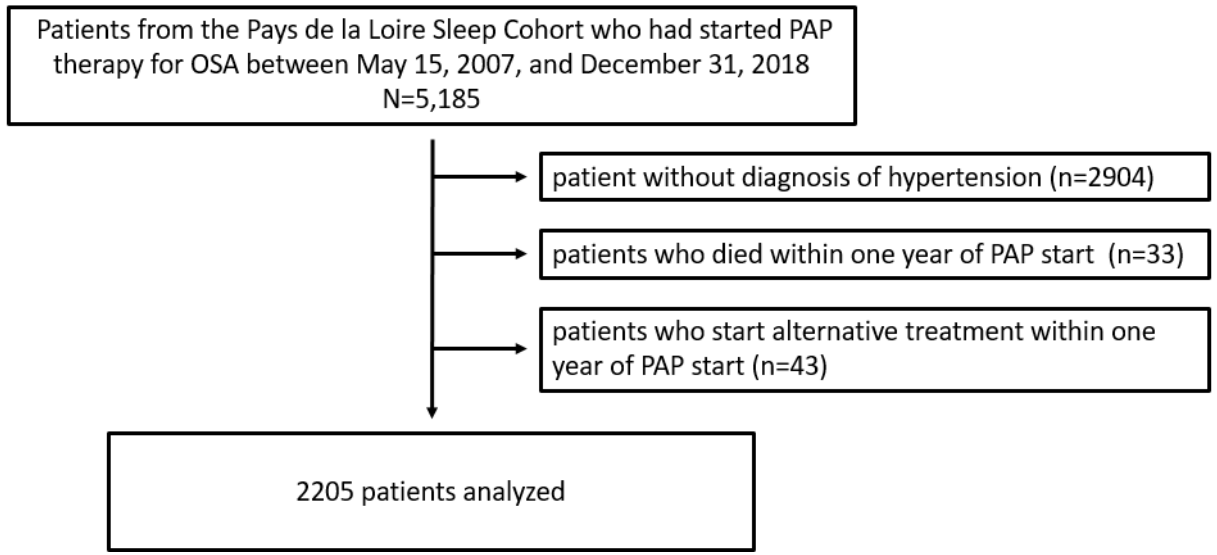

- 2205 patients, 68.03% male,
- Median age of 61 years [54-68],
- AHI of 39/h [30-55] ,
- BMI of 32.42 kg/m² [28.95-36.43],
-Epworth score of 10 [6-13].
-Diabetes 32.65%, HF 5.76%, CAD 8.07%, AF 9,71%, stroke 6,76%

- At T1, PAP use is 6.07 hours per days [4.46-7.27].

Results (2): primary end point, no difference in OAD score at T1 versus T0

➔ effect on OAD number after one year ?

2,16 (±1,1) OADs at T0

➔ p=ns

2,13 (±1,18) OADs at T1

and no significant differences between the different PAP use groups

Results (3): sankey for the PAP use groups (T0 to T1).

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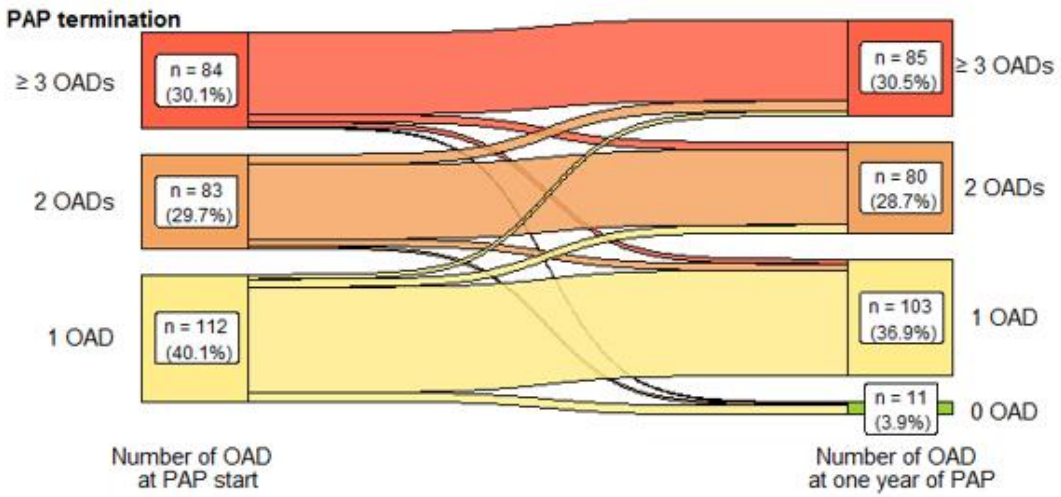

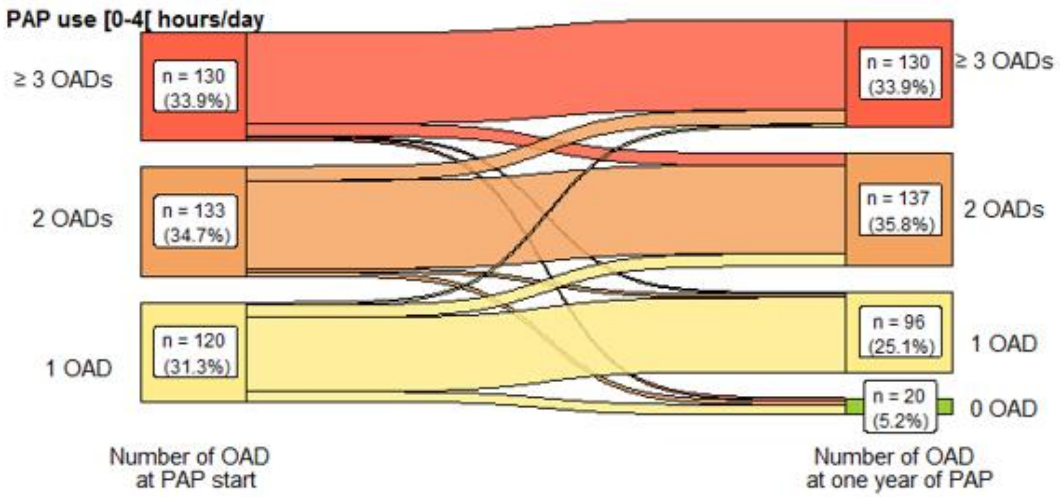

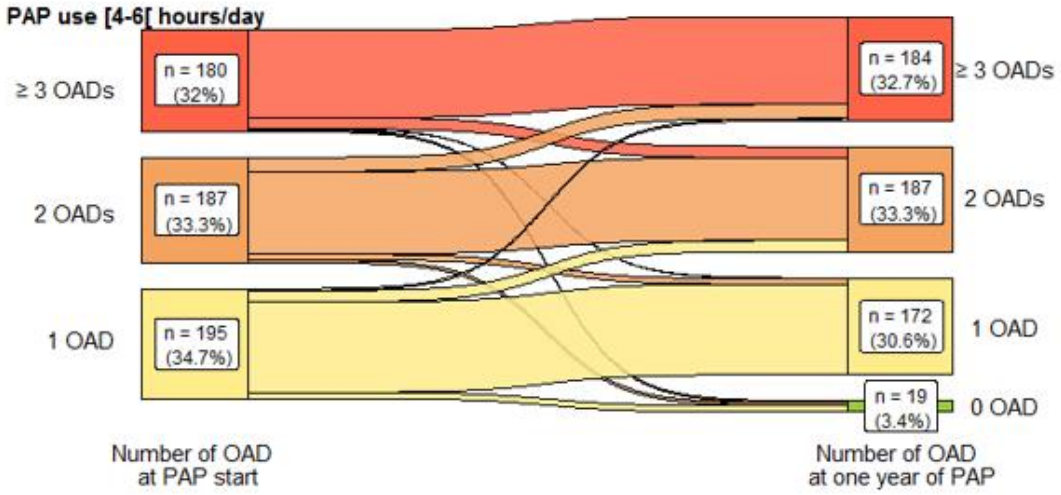

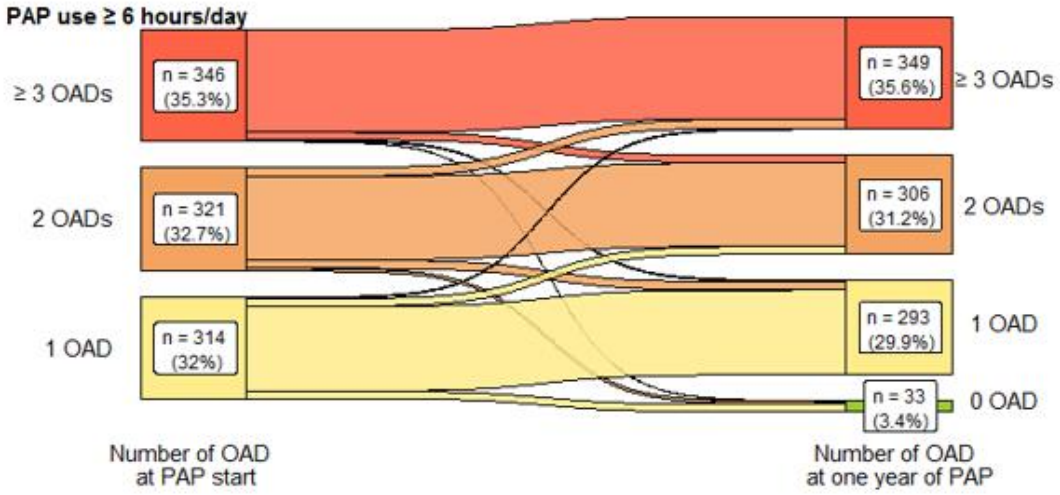

Results (4): population (%) with increase or decrease in OAD score at T1

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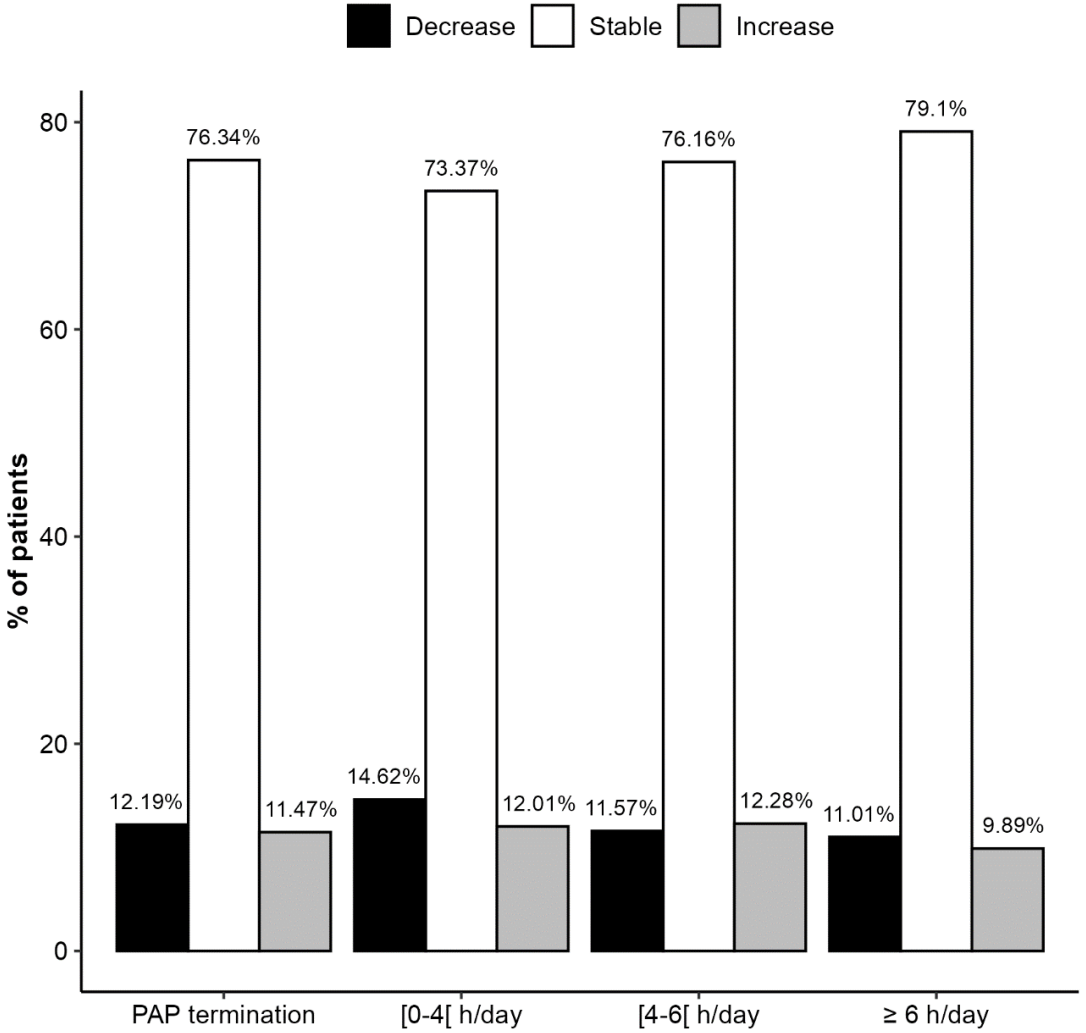
➔11.93% of patients decrease their OAD score

➔ 11.07% of patients increase their OAD score

➔ no significant difference between PAP use groups (p=0,35).



Results (5): Multivariate logistic analysis at T1, increase or decrease OAD score

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	Increase of OAD score vs. stable Adjusted OR [95% CI]	P value	Decrease of OAD score vs. stable Adjusted OR [95%CI]	P value	Global p value
Number of OAD	0.96 [0.82; 1.12]	0.595	2.26 [1.92; 2.67]	<.001	<.001
Age, 1 year unit	1.02 [1.01; 1.03]	0.005	1.01 [0.99; 1.02]	0.328	0.016
Diuretics-loop	0.98 [0.63; 1.54]	0.931	1.66 [1.12; 2.47]	0.012	0.037
Calcium channel blockers	1.48 [1.08; 2.02]	0.015	0.890 [0.62; 1.28]	0.523	0.034
MPR at one year, for 0.1-unit decrease	0.92 [0.83; 1.03]	0.168	1.67 [1.56; 1.78]	<.001	<.001
Number of consultations	1.07 [1.05; 1.10]	<.001	1.05 [1.03; 1.08]	<.001	<.001
PAP use					0.525
≥ 6 vs. PAP termination	0.87 [0.56; 1.35]	0.527	1.28 [0.79; 2.07]	0.321	
[0-4[vs. PAP termination	1.18 [0.71; 1.93]	0.525	1.25 [0.73; 2.16]	0.417	
[4-6[vs. PAP termination	1.17 [0.74; 1.86]	0.497	1.25 [0.75; 2.09]	0.394	

Abbreviations: MPR, medication possession ratio; OAD, oral antihypertensive drug; PAP, positive airway pressure.

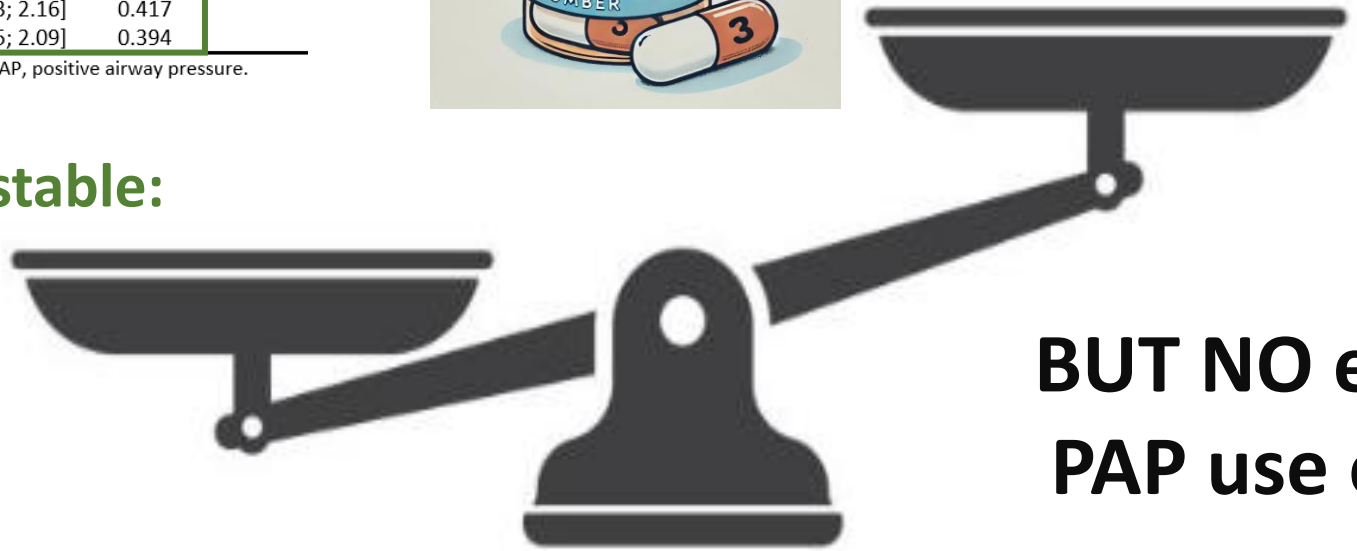
OAD SCORE

- Increase OAD score vs stable:

- ✓ Age,
- ✓ Calcium channel blockers,
- ✓ Consultation number

- Decrease OAD score vs stable:

- ✓ Initial number of OAD,
- ✓ Loop diuretics,
- ✓ MPR at T1,
- ✓ Consultation number



BUT NO effect of PAP use or OSA

What This Study Adds to the Field

- **PAP use is not associated with a change in OAD score at one year** *(and does not reach the level of lifestyle measures on hypertension)*.

➔ no impact on OAD score after one year

-**These results do not call into question the usefulness of PAP in OSA hypertensive patients** (a 3-mmHg reduction in diastolic BP reduced the risk of major cardiovascular events by about 10%).

-**Further research is need to clarify the impact of PAP use on OAD burden in patients with resistant or refractory hypertension**.

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