



Association between blood pressure and self-reported obstructive sleep apnea in patients with sICH

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Background

Elevated blood pressure is a risky factor of unfavorable outcomes :

- Enlargement of hematoma or recurrent hemorrhage
- Rehemorrhage after operation
- Aggravate hemorrhage-induced brain injury

Obstructive sleep apnea:

- highly prevalent in patients with sICH
- nocturnal BP fluctuations
- resistance to antihypertensive agent



Materials and Methods

Study Design - Retrospective cohort study

Participants 1) adult patients had sICH confirmed by CT or MRI scans; 2) patients admitted within 24 hours after the onset of sICH.

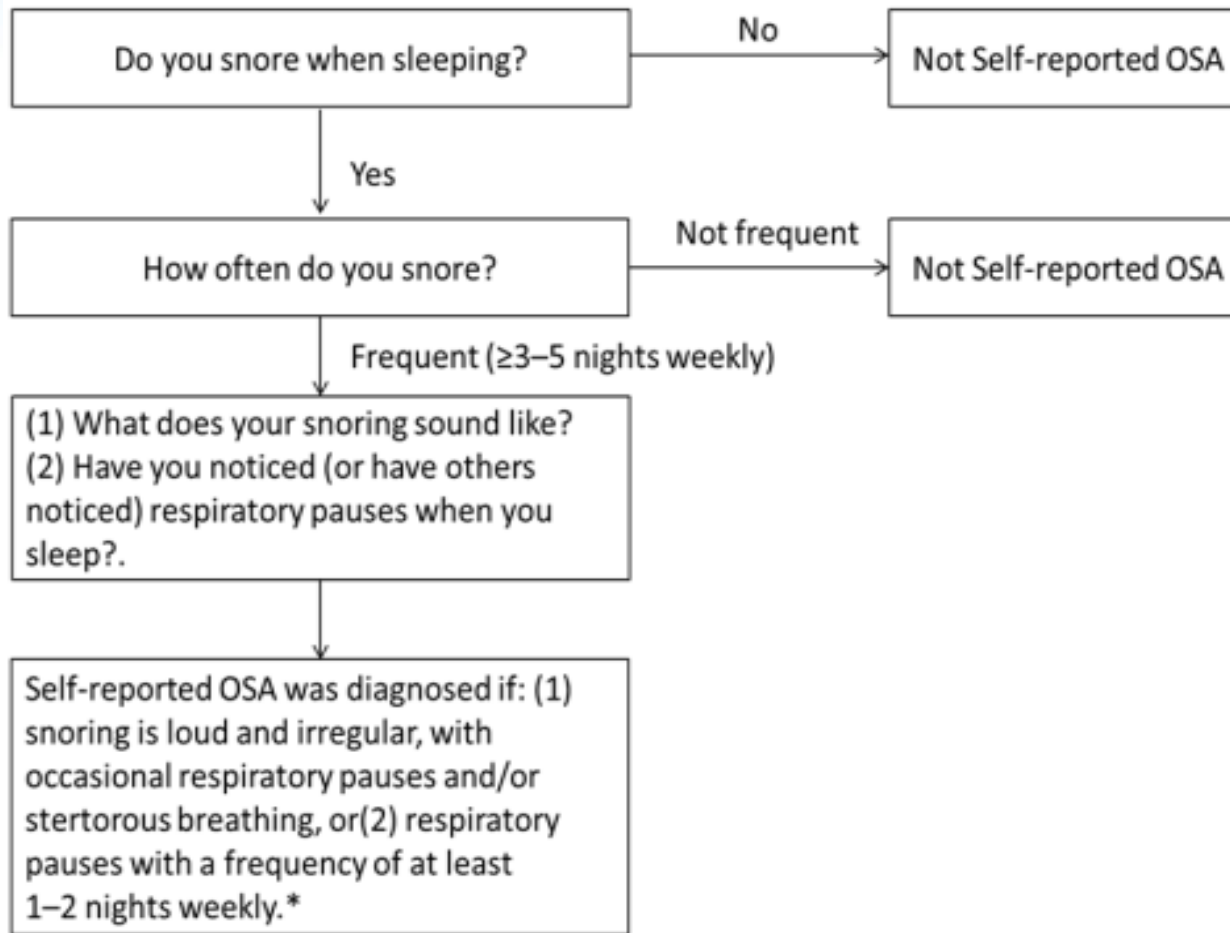
Blood pressure management : followed the latest edition of AHA/ASA guideline

Data collection and outcomes:

- 1) questions derived from the Nordic Sleep Questionnaire
- 2) Baseline Characteristics
- 3) Medical histories
- 4) Neuroimaging characteristics
- 5) Levels of BPs in the first 24 hours after hospitalization
- 6) Complications
- 7) Functional outcome measured by mRS at 3 months



Logic of questionnaire



=0.138



Results-Baseline characteristics

	Self-reported OSA (n=141)	Control (n=124)	P value
Male - no. (%)	107 (78.9)	73 (57.9)	0.003
Age – yrs.	57.2±12.6	55.5±12.5	0.287
BMI – kg/m ²	25.5±4.7	24.7±3.4	0.113
Admission GCS	13 (10,15)	14 (12,15)	0.008
Paralyzed- no. (%)	87 (61.7)	67 (54.0)	0.207
Dysphasic or aphasic	56 (39.7)	46 (37.1)	0.662
History- no. (%)			
Hypertension	94 (66.7)	70 (56.5)	0.088
Diabetes mellitus	18 (12.8)	21 (16.9)	0.339
Smoke	60 (42.6)	38 (30.7)	0.045
Alcohol	49 (34.8)	44 (35.5)	0.901
Hyperlipidemia	27 (19.2)	15 (12.1)	0.117
Previous stroke	7 (5.0)	5 (4.0)	0.716
Cardiovascular event	10 (7.1)	6 (4.8)	0.442
Neuroimaging			
Site of hematomas			0.011
Lobar	23 (16.3)	38 (30.6)	
Deep	91 (64.5)	65 (52.4)	
Cerebellum	4 (2.8)	8 (6.5)	
Brain stem	23 (16.3)	13 (10.5)	
Volume –ml	23.6±28.6	18.7±16.9	0.095
With IVH - no. (%)	55 (39.0)	41 (33.1)	0.315



Results-Blood pressure

	OSA (n=141)	Control (n=124)	P value
Admission SBP	174±29	158±28	<0.001
Admission DBP	104±19	94±20	<0.001
SBP SD of first 24 h	14.48±6.48	13.43±5.73	0.169
DBP SD of first 24 h	12.43±6.52	10.67±5.42	0.017
SBP SV of first 24 h	16.42±6.42	15.79±6.59	0.436
DBP SV of first 24 h	14.40±6.49	13.05±6.43	0.091
Achieved target BP in 4 hours- no. (%)	127 (90.1)	117 (94.4)	0.198
Any intravenous treatment- no. (%)	131 (92.9)	108 (87.1)	0.113
Combination of intravenous agents- no. (%)	16 (11.3)	9 (7.3)	0.256





Multivariable logistic regression

Variable	Self-reported OSA		
	OR	95% CI	P value
Male	1.876	1.033-3.406	0.039
GCS per 1 point increase	0.801	0.712-0.902	<0.001
SBP per 1mmHg increase	1.023	1.011-1.035	<0.001



Results-Outcomes

	OSA	Control	P value
30-day mortality	19	13	0.278
3-month poor outcome	96	75	0.218
Complications			
Pulmonary infection	30	17	0.136
Tracheotomy	14	9	0.722
Hematoma enlargement	16	9	0.067
Neurological deterioration	18	11	0.067
Gastrointestinal bleeding	12	9	0.880
Atrial fibrillation	5	3	0.343
Coronary events	3	1	0.313
Ischemic stroke	3	0	0.999





Conclusion

- Quite a number of Chinese sICH patients had self-reported OSA existed before ictus of ICH.
- There were more men in self-reported OSA group than the control group in this study.
- The self-reported OSA was associated with higher level of admission SBP independently.
- The self-reported OSA was not found to be associated with incidence of complications, such as pulmonary infection, ICH enlargement, perihematoma edema, neurological deterioration, gastrointestinal bleeding, coronary events and ischemic stroke.
- Self-reported OSA was not associated with early death, unfavorable neurological functional outcome or complications.
- Further larger-sample, prospective studies with results of PSG are needed to confirm the association between pre-stroke OSA and sICH.

THANKS!

