STROBE Statement—checklist of items that should be included in reports of observational studies

	Item No.	Recommendation	Page No.	Relevant text from manuscript
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	1	A prospective observational study
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	3	the background and conclusion section in abstract
Introduction				
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	6-7	Line 5-20 in page 6, line 1-8 in page 7
Objectives	3	State specific objectives, including any prespecified hypotheses	7	Line 9-15 in page 7
Methods				
Study design	4	Present key elements of study design early in the paper		A single-center, prospective, observational study
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	7,10,11	Line18-23 in page 7(settings, locations and the periods of recruitment) Line 15-22 in page 10, line 1-3 in page 11(exposure, follow-up and data collection)
Participants	6	(*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up *Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls *Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants	7,8,10,11	The eligibility criteria were provided in line1-7 in page 8. Patients with snoring who visited our sleep medicine center were collected consecutively. Line 15-22 in page 10, line 1-3 in page 11(the method of follow up)
		(*b*) *Cohort study*—For matched studies, give matching criteria and number of exposed and		

		unexposed *Case-control study*—For matched studies, give matching criteria and the number of controls per case		
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	8-10	The section of “Sleep study and CPAP treatment”, “Definition of BP parameters and grouping” and “Blood sampling for biomarker assays” in page 8-10.
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	8,9,10	The data was obtained by questionnaire, cuff measurements , PTT-method, PSG. The details of methods of assessment were provided in page 8,9,10. The same index is measured by the same method.
Bias	9	Describe any efforts to address potential sources of bias	18	A single-center study may have a potential selection bias. The efforts to address the sources of bias were descripted in limitation section(line 15-21 page 18)
Study size	10	Explain how the study size was arrived at	11	A total of 62 patients were needed per treatment group if an error of 0.05 (2-tailed test), a statistical power of 0.9 and a pooled standard deviation of 5.2 (obtained from a pilot study of this sample) were used.

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Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	11	Continuous variables were summarized as mean (SD) or median (interquartile range), the categorical data was described as the absolute value and its proportions. The differences between the baseline characteristics of two subgroups were assessed by means of the Student t-test, Mann-Whitney U-test or Chi-squared test.
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	11,12	Intergroup differences of the change in BP were established by means of a general linear model adjusted for age, hypersomnolence, sex, smoking and drinking status, the baseline values of BP, BMI, CPAP use and AHI, with the OSA subgroup (low and high BP surge) as a fixed factor. Multiple linear regression models were established to explore the factors of BP decrease during CPAP treatment. Age, sex, BMI, baseline BP values, hypersomnolence and CPAP compliance were always entered in the models.
		(*b*) Describe any methods used to examine subgroups and interactions		None
		(*c*) Explain how missing data were addressed	11	Multiple imputation method
		(*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed	11	Multiple imputation method

		Case-control study—If applicable, explain how matching of cases and controls was addressed *Cross-sectional study*—If applicable, describe analytical methods taking account of sampling strategy		
		(*e*) Describe any sensitivity analyses	11	Multiple imputation method
Results				
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	Figure 2	See flowchart
		(b) Give reasons for non-participation at each stage	Figure 2	See flowchart
		(c) Consider use of a flow diagram	Figure 2	See flowchart
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	12	Line 11-19 in page 12
		(b) Indicate number of participants with missing data for each variable of interest	Figure 2	See flowchart
		(c) *Cohort study*—Summarise follow-up time (eg, average and total amount)	13,14	A total of 119 patients completed 4-week follow-up, and 25 patients finished 24-month follow-up
Outcome data	15*	*Cohort study*—Report numbers of outcome events or summary measures over time	12,13,14	BPs dropped more markedly in patients in high BP surge group than those in low BP surge group, in both office systolic BP (SBP:5.3 mmHg vs.2.2 mmHg, *P*=.003) and diastolic BP(DBP:4.0mmHg vs.1.2 mmHg, *P*<.001), especially the asleep SBP (9.0mmHg vs.2.1 mmHg, *P*<.001). For 30 cases in the high BP surge group, optimal BP control was achieved in 60.0% of patients and BP <140/90mmHg reached up to 83.3% after 24 months of CPAP. Linear regression revealed that BP index was significantly associated with BP

				decrease during CPAP treatment.
		Case-control study—Report numbers in each exposure category, or summary measures of exposure		
		Cross-sectional study—Report numbers of outcome events or summary measures		
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included		See Table 2 and Table 3
		(*b*) Report category boundaries when continuous variables were categorized	10	After the initial assessment of BP surge profiles in all enrolled subjects, the entire cohort was divided into two groups based on the median BP index (high BP surge group: BP index ⩾36.2, N= 65; low BP surge group: BP index<36.2, N=65) and assigned to optimal CPAP treatment.
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period		None

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Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses		multiple imputation method
Discussion				
Key results	18	Summarise key results with reference to study objectives	15	Line 2-4 in page 15
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	18,19	Line14-21 in page 18, Line 1-12 in page 19
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	15,16,17,18,19	Page 15,16,17,18,19
Generalisability	21	Discuss the generalisability (external validity) of the study results	19	For patients with severe OSA and untreated hypertension, only those who exhibited high event-related BP surge profiles could obtain obvious BP reduction from CPAP treatment.
Other information				
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	20	This research was supported by grants from the National Natural Science Foundation of China (grant 81900084, 82070093) and the Key Laboratory Projects of Huaian (grant HAP202002)

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.