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	case-control study in patients with diabetes mellitus
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	5	Platelet-rich plasma (PRP) was prepared from venous blood of patients with T2DM or age-matched control.
Introduction				
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	6	Patients with T2DM have an elevated risk of vascular complications such as cardiovascular diseases, stroke, and vascular dementia[2-4]
Objectives	3	State specific objectives, including any prespecified hypotheses	7-8	In T2DM patients without dementia, hippocampal atrophy evaluated with VSRAD has been reported to be associated with insulin resistance phenotype such as abdominal visceral fat, high-sensitivity C-reactive protein and plasma homocysteine levels[26-28]. However, the mechanisms underlying hippocampal atrophy in T2DM remain unclear.
Methods				
Study design	4	Present key elements of study design early in the paper	8	*Study design* This case-control study investigated the relationship between Akt activity in unstimulated resting platelets and hippocampal atrophy in patients with T2DM .
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	None	*This is not suitable for our study which is not so-called observational study.
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	8	The inclusion criterion for the study group was the presence of T2DM according to the criteria of the World Health Organization. For the control group, we recruited age-matched patients with well-controlled hyperlipidaemia and hyperuricaemia but without diabetes. Patients with a past history of symptomatic cerebrovascular disease; significant cortical damage such as hydrocephalus, brain tumour or cerebral contusion evaluated by MRI; or atrial fibrillation were excluded. Patients with malignancy, infectious diseases, including hepatitis B

		Cross-sectional study—Give the eligibility criteria, and the sources and methods of selection of participants		and hepatitis C, or autoimmune disorders were also excluded.
		(*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	7	For the control group, we recruited age-matched patients with well-controlled hyperlipidaemia and hyperuricaemia but without diabetes.
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	None	*This is not suitable for our study which is not clinical observational study by follow-up.
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 to 11	Please look at the sections “Blood sampling and protein preparitions”, “Western blot analysis”, Brain MRI”, “Voxel-based morphometry” and “Statistical analysis”.
Bias	9	Describe any efforts to address potential sources of bias	None	*This is not suitable for our study which is not clinical observational study by follow-up.
Study size	10	Explain how the study size was arrived at	None	*This is not suitable for our study which is not clinical observational study by follow-up.

Continued on next page

Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	10	Quantitative variables were presented as the mean ± standard deviations.
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	10	The statistical significance of the correlation between the two variables and linear regression analysis was adopted.
		(*b*) Describe any methods used to examine subgroups and interactions	None	Not applicable
		(*c*) Explain how missing data were addressed	None	Not applicable
		(*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed *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	7	For the control group, we recruited age-matched patients with well-controlled hyperlipidemia and hyperuricemia without diabetes.
		(*e*) Describe any sensitivity analyses	None	Not applicable
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	None	Not applicable
		(b) Give reasons for non-participation at each stage	None	Not applicable
		(c) Consider use of a flow diagram	None	Not applicable
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	10	Please look at the section "Characterization of the subjects for western blotting and VSRAD".
		(b) Indicate number of participants with missing data for each variable of interest	None	Not applicable
		(c) *Cohort study*—Summarise follow-up time (eg, average and total amount)		
Outcome data	15*	*Cohort study*—Report numbers of outcome events or summary measures over time		
		Case-control study—Report numbers in each exposure category, or summary measures of exposure	None	Not applicable
		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	None	Not applicable
		(*b*) Report category boundaries when continuous variables were categorized	None	Not applicable

	(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	None	Not applicable

Continued on next page

Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	None	Not applicable
Discussion				
Key results	18	Summarise key results with reference to study objectives	13 to 14	We found a significant inverse correlation between the levels of phosphorylated Akt/phosphorylated p38 MAP kinase and the VSRAD Z-scores, suggesting that the increased ratio of Akt/p38 MAP kinase activity in the unstimulated platelets could negatively contribute to the decline of the hippocampal volume in T2DM patients.
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	14	The limitation is that the analysis probably included biases, such as experimental conditions, randomization and sampling, which may affect the trends observed here.
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	15	Therefore, our present findings regarding the ratio of Akt/p38 MAP kinase phosphorylation in platelets might provide a novel indicator of the risk of hippocampal atrophy in T2DM patients.
Generalisability	21	Discuss the generalisability (external validity) of the study results	14	In addition, the generalizability of the study results might be remained issue.
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		

*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.