

Effect of advanced nursing care on psychological disorder in hypertensive retinopathy of pregnancy

A protocol of systematic review

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Abstract

Background: This study will assess the effect of advanced nursing care (ANC) on psychological disorder (PD) in hypertensive retinopathy of pregnancy (HTRP).

Methods: This study will search electronic databases from inception to the present (Cochrane Library, MEDLINE, EMBASE, CINAHL, AMED, PsycINFO, CNKI, and Chinese Biomedical Literature Database), and other sources. All literature sources will be searched without limitations to language and study status. All eligible case-controlled study (CCS) will be included in this study. Two authors will independently carry out literature selection, data collection, and study quality assessment. Any confusion will be solved by a third author through discussion. Statistical analysis will be conducted using RevMan 5.3 software. In addition, a narrative synthesis will be elaborated if it is necessary.

Results: This study will summarize most recent high quality evidence to appraise the effect of ANC on PD in HTRP.

Conclusion: The results of this study will seek to identify the effect of ANC on PD in HTRP among pregnancy population.

OSF registration: osf.io/hgp93.

Abbreviations: ANC = advanced nursing care, CCS = case-controlled study, CIs = confidence intervals, HTRP = hypertensive retinopathy of pregnancy, MD = mean difference, PD = psychological disorder.

Keywords: anxiety, depression, hypertensive retinopathy, nursing intervention, pregnancy

1. Introduction

Hypertensive retinopathy is a common eye disorder,^[1–3] which occurs when the retinal vessels damaged because of the high blood pressure.^[4–7] It is usually asymptomatic and is diagnosed on fundoscopic features, but often manifests as signs of arteriovenous crossing, arterial, retinal, macular, and optic nerve changes.^[8,9] Its incidence ranges from 66.3% to 83.6% according to the different study reports.^[6,10,11] Several risk

factors are associated with this condition, such as genetic factor, smoking, and plasma leptin.^[12–15] It not only affects general population with hypertension, but also occurs in pregnancy (also known as hypertensive retinopathy of pregnancy, HTRP), which results in high risk for both mother and fetus.^[16–18] In addition, many patients with HTRP often experience psychological disorder (PD), such as depression and anxiety.^[19,20] Thus, it is very important to manage this disorder as early as possible.

Advanced nursing care (ANC) is reported to effectively manage PD in patients with HTRP.^[19–25] Although several clinical studies reported its effect on PD in HTRP, no systematic review specifically addresses this topic. Thus, in this study, we will comprehensively search electronic databases and gray literature sources for trials that have investigated the benefits of ANC on PD in patients with HTRP.

2. Methods

2.1. Study registration

This study has been registered on OSF (osf.io/hgp93). We have reported this study according to the guidelines of Preferred Reporting Items for Systematic Reviews and Meta-Analysis Protocol Statement.^[26]

2.2. Ethics and dissemination

This study will not need ethics approval, because it will not collect individual patient data. We will disseminate this study on a peer-reviewed journal or a conference meeting.

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The authors have no conflicts of interest to disclose.

Data sharing not applicable to this article as no datasets were generated or analyzed during the current study.

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2.3. Study eligibility criteria

2.3.1. Types of studies. This study will consider case-controlled study (CCS) on investigating the effect of ANC on PD in HTRP. We will exclude all non-clinical study and uncontrolled study.

2.3.2. Types of participants. All eligible female adults (≥ 18 years old) who were diagnosed as PD in HTRP will be included in this study. No limitations will be applied to their race and educational background.

2.3.3. Types of interventions

2.3.3.1. Intervention. All patients in the experimental group received any types of ANC on PD in HTRP.

2.3.3.2. Comparator. Eligible comparators include any management, such as medication, routine nursing care, or no treatment.

2.3.4. Type of outcome measurements

2.3.4.1. Primary outcomes. Depression (measured by any associated scale, such as Self-Rating Depression Scale); Anxiety (measured by any relevant tool, such as Self-Rating Anxiety Scale).

2.3.4.2. Secondary outcomes. Insomnia (assessed by any related scale, such as Pittsburg Insomnia Quality Scale);

Quality of life (appraised by any tool, such as 36-Item Short Form Health Survey); Adverse events.

2.4. Search strategy and data management

2.4.1. Search strategy. We will handle literature search from electronic databases from inception to the present (Cochrane Library, MEDLINE, EMBASE, CINAHL, AMED, PsycINFO, CNKI, and Chinese Biomedical Literature Database) and other sources (such as conference abstracts, and reference lists of included studies) involving the use of ANC on PD in HTRP. The search strategy will be built in consultation by an experienced medical information specialist. No limitations of language and study status will be imposed to this study. A detailed search strategy of Cochrane Library is shown in Table 1. We will also adapt and modify similar search strategy to other electronic databases.

2.4.2. Study selection. Two independent authors will scan the title/abstract of each searched citation, and we will remove all irrelevant studies. In addition, the full text of any article will be judged against all inclusion criteria. Any disagreement on study selection will be settled down by discussion with the help of a third author. The whole process of study selection will be presented in a flow chart.

2.4.3. Data extraction and management. All necessary data will be collected by 2 independent authors using a standardized template form. We will invite a third author to solve any divergence between 2 authors. Data will be collected from eligible studies: study characteristics (e.g., first author, time of publication, country), patient information (e.g., race, age, condition severity), intervention and comparator (e.g., treatment types, dosage, frequency), outcomes (e.g., primary and secondary outcome measurements, follow-up information), conflict of interest, and funding information.

2.4.4. Dealing with missing data. Any insufficient, unclear, or missing data will be obtained by contacting original authors through email or fax. We will analyze available data only if those data are not achieved.

2.5. Study quality assessment

Two authors will independently appraise study quality for each eligible study. We will assess study quality using Newcastle–Ottawa Scale.^[27] Any difference regarding the study quality assessment will be solved by a third author through discussion.

2.6. Statistical analysis

In this study, we will conduct statistical analysis using RevMan 5.3 software (Cochrane Community, London, UK). We will express dichotomous values as risk ratio and 95% confidence intervals (CIs), and continuous values as mean difference (MD) or standardized MD and 95% CIs. Statistical heterogeneity across included studies will be evaluated by I^2 test. $I^2 \leq 50\%$ suggests low level of heterogeneity and we will employ a fixed-effect model for data pooling. $I^2 > 50\%$ indicates high level of heterogeneity, and we will use a random-effect model for data synthesis. If data are sufficient and adequately similar on the same outcome with

Table 1
Search strategy of Cochrane Library.

Number	Search terms
1	MeSH descriptor: (hypertensive retinopathy) explode all trees
2	MeSH descriptor: (pregnancy) explode all trees
3	((hypertension*) or (hypertensive*) or (blood pressure*) or (retinopathy*) or (retinal vessel*) or (optic neuropathy*) or (pregnancy*) or (pregnant*)):ti, ab, kw
4	Or 1–3
5	MeSH descriptor: (depression) explode all trees
6	MeSH descriptor: (anxiety) explode all trees
7	((psychological*) or (depressive*) or (anxiety*) or (pressure*) or (disorder*) or (nervous*) or (mood*)):ti, ab, kw
8	Or 5–7
9	(nursing care) explode all trees
10	((nursing*) or (care*) or (long term*) or (short term*) or (health care*) or (high quality*) or (advanced*) or (consultation*)):ti, ab, kw
11	Or 9–10
12	MeSH descriptor: (randomized controlled trials) explode all trees
13	((random*) or (randomly*) or (placebo*) or (blind*) or (allocation*) or (control*) or (clinical*) or (trial*) or (study*)):ti, ab, kw
14	Or 12–13
15	4 and 8 and 11 and 14

low level of heterogeneity, meta-analysis will be conducted. If there are insufficient data, meta-analysis will not be performed. We will carry out subgroup analysis if there is high level of heterogeneity. In addition, we will report descriptive summaries for study results.

2.7. Additional analysis

Subgroup analysis will be employed based on different study characteristics, patient demographics, study types, study methods, and interventions and controls. If sufficient data are available, sensitivity analysis will be carried out to explore the stability of merged outcome data by removing low quality study. Reporting bias will be examined by funnel plot and Egger regression test if over 10 studies are included.

3. Discussion

PD (including depression and anxiety) is a common issue in patients with HTRP. Interest in the use of ANC as a management for this disorder has developed over the past decade. Several studies have reported to utilize ANC for the treatment of PD in HTRP. However, there is no relevant systematic review specifically investigating this topic.

The present study firstly yields high quality evidence on the effect of ANC for the treatment of PD in HTRP. It will provide a comprehensive summary of the current evidence of ANC on PD in patients with HTRP and will merge new evidence as it is available. Its results will provide solid data and robust evidence of ANC on PD in HTRP either for the clinical practice or for health policy makers.

Author contributions

Conceptualization: Xiao-fang Wang, Lin-juan Liu.

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References

- [1] Harjasouliha A, Raiji V, Garcia Gonzalez JM. Review of hypertensive retinopathy. *Dis Mon* 2017;63:63–9.
- [2] Wong TY, Mitchell P. Hypertensive retinopathy. *N Engl J Med* 2004;351:2310–7.
- [3] Stryjewski TP, Papakostas TD, Vavvas D. Proliferative hypertensive retinopathy. *JAMA Ophthalmol* 2016;134:345–6.
- [4] Barar A, Apatachioaie ID, Apatachioaie C, et al. Hypertensive retinopathy—assessment. *Oftalmologia* 2008;52:3–12.
- [5] Yoshimoto H, Ganka Y. Hypertensive retinopathy. *Nihon Rinsho* 2004;62(suppl):381–5.
- [6] Erden S, Bicaçci E. Hypertensive retinopathy: incidence, risk factors, and comorbidities. *Clin Exp Hypertens* 2012;34:397–401.
- [7] Wegmann-Burns M, Gugger M, Goldblum D. Hypertensive retinopathy. *Lancet* 2004;363:456.
- [8] Chatterjee S, Chattopadhyay S, Hope-Ross M, et al. Hypertension and the eye: changing perspectives. *J Hum Hypertens* 2002;16:667–75.
- [9] Wong TY, Klein R, Couper DJ, et al. Retinal microvascular abnormalities and incident stroke: the Atherosclerosis Risk in Communities Study. *Lancet* 2001;358:1134–40.
- [10] Kabedi NN, Mwanza JC, Lepira FB, et al. Hypertensive retinopathy and its association with cardiovascular, renal and cerebrovascular morbidity in Congolese patients. *Cardiovasc J Afr* 2014;25:228–32.
- [11] Del Brutto OH, Mera RM, Viteri EM, et al. Hypertensive retinopathy and cerebral small vessel disease in Amerindians living in rural Ecuador: the Atahualpa Project. *Int J Cardiol* 2016;218:65–8.
- [12] Reichhart N, Haase N, Crespo-Garcia S, et al. Hypertensive retinopathy in a transgenic angiotensin-based model. *Clin Sci (Lond)* 2016;130:1075–88.
- [13] Suri MF, Qureshi AI. Hypertensive retinopathy and risk of cardiovascular diseases in a national cohort. *J Vasc Interv Neurol* 2008;1:75–8.
- [14] Uckaya G, Ozata M, Sonmez A, et al. Is leptin associated with hypertensive retinopathy? *J Clin Endocrinol Metab* 2000;85:683–7.
- [15] Zhang Y, Zhao L, Li H, et al. Risk factors for hypertensive retinopathy in a Chinese population with hypertension: The Beijing Eye study. *Exp Ther Med* 2019;17:453–8.
- [16] Rasdi AR, Nik-Ahmad-Zuky NL, Bakiah S, et al. Hypertensive retinopathy and visual outcome in hypertensive disorders in pregnancy. *Med J Malaysia* 2011;66:42–7.
- [17] Ramírez-Montero C, Lima-Gómez V, Anguiano-Robledo L, et al. Preeclampsia as predisposing factor for hypertensive retinopathy: participation by the RAAS and angiogenic factors. *Exp Eye Res* 2020;193:107981.
- [18] Araújo J, Tavares-Ferreira J, Penas S, et al. Malignant hypertensive retinopathy as a presenting sign of an occult dead fetus. *Clin Ophthalmol* 2015;9:971–5.
- [19] Gong CB. Nursing care of pregnant women with pregnancy-induced hypertension and retinal detachment. *J Pract Gynecol and Endocrinol* 2018;5:144–54.
- [20] Song Y. Clinical nursing experience and analysis of severe pregnancy-induced hypertension complicated with retinopathy. *Chin J Ophthalmol* 2015;5:160–1.
- [21] Wang BM. The nursing experience of 58 cases of cesarean section with hypertension during pregnancy. *Guizhou Med* 2014;38:287.
- [22] Li YJ. Nursing education and education of pregnancy-induced hypertension syndrome with fundus lesions. *Chin Med Herald* 2010;7:140–3.
- [23] Li RQ. Postpartum nursing care of pregnant women with hypertension of pregnancy and retinal detachment. *Hainan Med* 2009;20:152–60.
- [24] Pan ZL. Nursing of severe pregnancy-induced hypertension complicated with retinal detachment. *J Qiqihar Med Coll* 2009;30:127.
- [25] Ai HW, Li LQ. Nursing care of severe pregnancy-induced hypertension complicated with retinal detachment. *Occup Health* 2007;8:674–5.
- [26] Shamseer L, Moher D, Clarke M, et al. PRISMA-P Group. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. *BMJ* 2015;349:g7647.
- [27] Stang A. Critical evaluation of the Newcastle-Ottawa scale for the assessment of the quality of nonrandomized studies in meta-analyses. *Eur J Epidemiol* 2010;25:603–5.