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Retinal and corneal neuroprotective effects of qiming granules or calcium dobesilate in patients with non-proliferative diabetic retinopathy

Submission date
28/02/2023

Recruitment status
No longer recruiting

Registration date
04/03/2023

Overall study status
Completed

Last Edited
03/03/2023

Condition category
Eye Diseases

[_] Prospectively registered
[X] Protocol
[_] Statistical analysis plan
[_] Results
[_] Individual participant data
[_] Record updated in last year

Plain English summary of protocol

Background and study aims
Diabetic retinopathy (DR) is a complication of diabetes caused by high blood sugar levels damaging the back of the eye (retina). It is usually diagnosed and treated at a late stage when blood vessel changes occur, leading to poor effectiveness. Therefore, a new concept of DR treatment, which is targeted at nerve injury, needs to be established. This study aims to assess the effectiveness and safety of Qiming granules and calcium dobesilate (CAD) as an early intervention for nerve injury associated with non-proliferative DR (NPDR).

Who can participate?
Patients with NPDR

What does the study involve?
Participants are randomly allocated to receive Qiming granules or CAD or only basic treatment for 24 weeks. Peripapillary retinal nerve fiber layer (pRNFL) and corneal nerve fiber length (CNFL) are measured before and after 24 weeks of treatment.

What are the possible benefits and risks of participating?
It is expected that the participants can effectively control diabetic retinopathy and improve their quality of life. The important information obtained in this study may provide a theoretical basis for retinal nerve injury in patients and help to increase their own or other patients' treatment options. Participants may suffer side effects from the examination and drugs (for example, gastrointestinal adverse effects).

Where is the study run from?
The First Affiliated Hospital of Harbin Medical University (China)

When is the study starting and how long is it expected to run for?
September 2019 to January 2023

Who is funding the study?
The First Affiliated Hospital of Harbin Medical University (China)

Who is the main contact?
Prof Hongyu Kuang, ydykuanghongyu@126.com (China)

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Additional identifiers

Clinical Trials Information System (CTIS)
Nil known

Protocol serial number
Nil known

Study information

Scientific Title
Effects of qiming granules or calcium desolate on the peripapillary retinal nerve fiber layer thickness and corneal nerve parameters in patients with non-proliferative diabetic retinopathy

Study objectives
Qiming granules or calcium dobesilate can improve retinal neurodegeneration and microvascular changes as well as corneal nerve injury in patients with non-proliferative diabetic retinopathy (NPDR).

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approved 20/12/2019, Ethics Committee of the First Affiliated Hospital of Harbin Medical University (No. 23 Postal Street, Nangang District, Harbin City, Heilongjiang Province, China; +86 (0)451-85552350; black9090@163.com), ref: 2019152

Study design
Single-center single-blinded randomized active-controlled study

Primary study design
Interventional

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Non-proliferative diabetic retinopathy

Interventions
The participants were randomized approximately 1:1:1 to three groups by a random number table. The participants in the Qiming granule group receive Qiming granules (Zhejiang Wansheng Pharmaceutical Co., Ltd., Hangzhou, China, 4.5 g) mixed with boiling water three times a day for 24 weeks. The participants in the CAD group receive calcium dobesilate capsules

(Ebewe Pharma GmbH, Unterach am Attersee, Austria, 0.5 g) three times a day for 24 weeks. The participants in the control group only receive basic treatment such as controlling blood glucose, blood pressure and blood lipid for 24 weeks.

Intervention Type
Drug

Phase
Not Applicable

Drug/device/biological/vaccine name(s)
Qiming granules, calcium dobesilate capsules

Primary outcome(s)
1. Peripapillary retinal nerve fiber layer (pRNFL) thickness measured using optical coherence tomography angiography (OCTA) at baseline and 24 weeks
2. Corneal nerve fiber length (CNFL) measured using corneal confocal microscopy (CCM) at baseline and 24 weeks

Key secondary outcome(s))
1. Corneal nerve fiber density (CNFD) and corneal nerve branch density (CNBD) measured using CCM at baseline and 24 weeks
2. Foveal avascular zone (FAZ) area measured using OCTA at baseline and 24 weeks
3. Best corrected visual acuity (BCVA) measured using international standard vision chart at baseline and 24 weeks

Completion date
31/01/2023

Eligibility

Key inclusion criteria
1. Aged 18-70 years old (including boundary value)
2. Patients diagnosed with Type 2 diabetes(according to 1999 WHO criterion)
3. Patients with non-proliferative diabetic retinopathy (NPDR) (According to fundus photography and International Clinical Classification Standard for diabetes Retinopathy (2002))
4. Subjects were treated with stable hypoglycemic drugs for at least 3 months
5. Subjects signed informed consent

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 years

Upper age limit
70 years

Sex
All

Total final enrolment
33

Key exclusion criteria
1. Subjects with other non-diabetic eye diseases interfering with fundus examination results (such as glaucoma, cataract, non-diabetic hemorrhagic eye disease, uveitis, retinal detachment, optic nerve disease, refractive stromal abnormalities, etc.)
2. Subjects with proliferative retinopathy (PDR)
3. glycosylated hemoglobin (HbA1C)8.0%
4. Subjects with diabetic retinopathy caused by type 1 and special types of diabetes
5. Subjects who underwent eye surgery or treatment within 6 months
6. Subjects with central nervous system diseases
7. Subjects suffering from allergic diseases or allergic to this medicine
8. Subjects participated in other drugs trials within 3 months
9. Subjects were treated with drugs for diabetic retinopathy
10. Uncontrolled hypertension or untreated hypertension(defined as systolic blood pressure (SBP)160mmHg or diastolic blood pressure(DBP)100mmHg during screening)
11. Severe systemic diseases (such as cardiovascular system, respiratory system, digestive system, nervous system, endocrine system, genitourinary system diseases, etc.), malignant tumors, mental diseases and other diseases that may interfere with the results of this study
12. Impaired liver function, alanine aminotransferase (ALT) or aspartate aminotransferase (AST) level ≥ 2.5 times the upper limit of normal value
13. Renal insufficiency (eGFR<45ml/min)
14. Women who are pregnant, breastfeeding or preparing for pregnancy
15. Subjects suffering from cancer requiring treatment in the past five years or expected to die within five years
16. Unwilling to sign informed consent
17. Subjects who cannot take medication as planned, and those who are unwilling or unable to accept regular visits

Date of first enrolment
01/02/2020

Date of final enrolment
30/09/2022

Locations

Countries of recruitment
China

Study participating centre

The First Affiliated Hospital of Harbin Medical University
Harbin City
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Sponsor information

Organisation
First Affiliated Hospital of Harbin Medical University

ROR
https://ror.org/05vy2sc54

Funder(s)

Funder type
Hospital/treatment centre

Funder Name
First Affiliated Hospital of Harbin Medical University

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study are not expected to be made available due to the principle of informed consent which indicated that the patient's personal data will not be public.

IPD sharing plan summary
Not expected to be made available

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Protocol file	version 1.0	01/09/2020	03/03/2023	No	No