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Supplementation with alpha-lipoic acid, combined with other nutritionals in glaucoma patients

Submission date 28/11/2008	**Recruitment status** No longer recruiting	[_] Prospectively registered [_] Protocol
Registration date 30/01/2009	**Overall study status** Completed	[_] Statistical analysis plan [_] Results
Last Edited 30/01/2009	**Condition category** Eye Diseases	[_] Individual participant data [_] Record updated in last year

Plain English summary of protocol
Not provided at time of registration

Contact information

Type(s)
Scientific

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Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers
Protocol # 476

Study information

Scientific Title
Randomised, parallel, double-masked, placebo-controlled, pilot study of oral supplementation with alpha-lipoic acid (LA) 150 mg/d combined with other nutritionals in glaucoma patients

Study objectives
Primary open angle glaucoma (POAG) is a complex, chronic pathology, characterised by trabecular meshwork modifications, slowly progressive optic neuropathy resulting in visual field damage and in most of the cases, ocular hypertension (OHT). In glaucoma patients high levels of different markers of oxidative stress have been found. With regard to anti-oxidant defenses, low levels of glutathione in serum and aqueous humor and a decreased total reactive anti-oxidant potential in aqueous humor have been evidenced in glaucoma patients. Some publications suggest that antioxidants are important in maintaining cellular homeostasis relevant to the etiology of POAG. More studies are needed for a further precision of the real importance of nutritional factors in glaucoma.

A nutritional formula combining different antioxidants (alpha lipoic acid, vitamin C, vitamin E, bilberry extract) and vitamins B1, B12 is proposed to be tested in glaucoma patients. In this study two hypothesis has been tested:
Hypothesis 1: That a 6 month treatment with the antioxidant formulation at a dosage of 1 tablet (containing alpha-lipoic acid, vitamin C, vitamin E, bilberry extract, vitamin B1 and B12) twice a day versus placebo significantly increases the level of total antioxidant status in serum.
Hypothesis 2: That 6 month treatment with antioxidant formulation at dosage of 1 tablet twice a day versus placebo significantly reduces the level of oxidative stress marker (isoprostanes) in urine in patients with POAG.

In both cases the null hypothesis, expected to be rejected, is that there is no difference between the antioxidant formulation and placebo.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Freiburger Ethic Commission International gave approval on the 11th September 2006 (ref: 06 /1966). Amendment 1: 2nd June 2008.

Study design
Randomised parallel double-masked placebo-controlled single-centre pilot study

Primary study design
Interventional

Secondary study design
Randomised controlled trial

Study setting(s)
Other

Study type(s)

Treatment

Participant information sheet
Not available in web format, please use the contact details below to request a patient information sheet

Health condition(s) or problem(s) studied
Primary open angle glaucoma (POAG)

Interventions
This double-blind placebo controlled study has two study arms:
1. The placebo formulation contains lactose, cellulose and magnesium stearate as their sole components
2. The ingredients of the antioxidant formulation are (per tablet): alpha-lipoic acid (75 mg), vitamin E (alpha tocopherol, 18 mg), vitamin C (calcium ascorbate, 35 mg), vitamin B1 (thiamin, 1.8 mg), vitamin B12 (cyanocobalamine, 2.5 µg), bilberry extract (50 mg, containing at least 25% anthocyane). Further ingredients are cellulose (microcrystalline), lactose and magnesium stearate.

All subjects (placebo = 20 subjects and treatment = 20 subjects) take 1 tablet twice a day with a glass of cold water for 6 months. Study visits were at baseline and a 6 month exit visit. Two follow-up phone calls have also been done.

Intervention Type
Supplement

Phase
Not Applicable

Drug/device/biological/vaccine name(s)
Nutritional formula combining different antioxidants (alpha lipoic acid, vitamin C, vitamin E, bilberry extract), vitamin B1, vitamin B12

Primary outcome measure
Efficacy variables:
1. Variation of serum total antioxidant status, measured using Total Antioxidant Assay
2. Urine isoprostane values, measured using Prostaglandin Assay

The main criteria will be the changes from baseline until 6 months after start of supplementation. The efficacy analyses compare these two criteria in the two groups (supplemented and placebo group). For the analysis blood and urine samples have been drawn from each patient at baseline and after 6 months (180 days). All serum and urine samples have been sent and analysed in a centralised laboratory, with the same method, the same equipment and the same staff for better quality of results.

Secondary outcome measures
1. Total glutathione status in serum, measured using Glutathione Assay Kit
2. Uric acid status in serum
3. Status of ascorbic acid in serum, determined by individual HPLC

4. Status of tocopherol in serum, determined by individual HPLC
5. Contrast sensitivity
6. Analysis of safety of oral supplementation

Serum of blood samples, drawn at baseline and visit 2 (6 months after baseline) of each patient, will be kept frozen for optional analysis of the antibody pattern. Safety was assessed by means of the adverse event report and an ophthalmic examination. In the ophthalmic examination a slit lamp examination was performed, the visual acuity has been assessed, the IOP has been measured using applanation tonometer (always at 8 o'clock in the morning for all patients), a funduscopy was carried out (examination of macula, optic nerve head and cup/disc ratio) and the visual field was analysed. The ophthalmic examination has been performed for the study and the fellow eye.

Overall study start date
14/02/2007

Completion date
30/08/2007

Eligibility

Key inclusion criteria
1. Adult patients (men or women) suffering from bilateral or unilateral POAG with intraocular pressure (IOP) less than 20 mmHg (treated with local therapy). POAG is defined as primary open angle glaucoma with a cup/disc ratio (CDR) greater than 0.5 and visual field defect of at least the parameters of an automated perimeter (MD, PSD) outside the normal range.
2. Aged between 40 and 60 years
3. IOP controlled only with local anti-glaucomatous medication
4. Visual acuity of at least 0.5 (decimal fractions)
5. Patients have given their written informed consent

Participant type(s)
Patient

Age group
Adult

Sex
Both

Target number of participants
40 (20 per group)

Key exclusion criteria
1. Any concomitant medication
2. Vasospastic syndrome (migraine, Raynaud's syndrome)
3. Coronary heart disease
4. Stroke
5. Obesity (body mass index [BMI] greater than 30 kg/m^2)
6. Cardiovascular risk factors: HTN (systolic greater than or equal to 140 mmHg, diastolic greater

than or equal to 90 mmHg), known hyperlipidaemia, diabetes mellitus, smokers (greater than 3 cigarettes/day)
7. Severe systemic or ocular disease
8. Autoimmune disease
9. Secondary glaucoma and angle closure glaucoma
10. Exfoliation syndrome
11. Other ocular degenerative disease (cataract, diabetic retinopathy, age-related macular degeneration [ARMD])
12. History of eye surgery (including laser), trauma
13. Drug, alcohol abuse
14. Known sensitivity to the tested ingredients
15. Supplementation with antioxidants within the previous 3 months
16. Any concomitant nutritional supplementation
17. Involvement in the last 30 days in any other investigational drug study
18. Pregnant and lactating women
19. Patients for whom, in the physician's opinion, any of the protocol procedures may pose a special risk not outweighed by the potential benefits of participating in the study
20. Patients who are unlikely to comply with the study protocol or who are likely to be moving and lost to follow up in the study period
21. Patients who plan to start a diet or to change their diet during the course of the study

Date of first enrolment
14/02/2007

Date of final enrolment
30/08/2007

Locations

Countries of recruitment
France

Romania

Study participating centre
5B, rue Jules Guesde
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91031

Sponsor information

Organisation
Dr. Mann Pharma GmbH, Bausch & Lomb Group (Germany)

Sponsor details

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Sponsor type
Industry

Website
http://www.bausch-lomb.de/

ROR
https://ror.org/049ncrn81

Funder(s)

Funder type
Industry

Funder Name
Dr. Mann Pharma GmbH, Bausch & Lomb Group (Germany)

Results and Publications

Publication and dissemination plan
Not provided at time of registration

Intention to publish date

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not provided at time of registration