# Comparison of the treatment effect of preservative-free vs preserved eye drops in patients with dry eye syndrome

Submission date	Recruitment status	<ul><li>Prospectively registered</li></ul>
20/01/2014	No longer recruiting	☐ Protocol
Registration date	Overall study status	Statistical analysis plan
05/02/2014	Completed	Results
Last Edited	Condition category	Individual participant data
17/02/2014	Eye Diseases	<ul><li>Record updated in last year</li></ul>

## Plain English summary of protocol

Background and study aims

Studies show that preservatives in eye drop can trigger an inflammatory response. To the best of our knowledge, there is no report comparing the effects of preservative-free and preserved eye drops in dry eye syndrome. This study compares the antioxidants and inflammatory responses in tears of patients with dry eye syndrome treated with preservative-free eye drops versus eye drops with preservatives.

Who can participate?

21 years of age and over and diagnosed with dry eye syndrome.

What does the study involve

Participants were randomly allocated to receive either preservative-free eye drops or eye drops with preservatives. Various assessments will be carried out at the start of the study and at 1, 2 and 3 months after treatment.

What are the possible benefits and risks of participating? Both preservative-free and preserved eye drops treatments may lead to significant improvement in symptoms of dry eye. There is no risk to participants.

Where is the study run from? Bucheon St Mary's Hospital, South Korea.

When is the study starting and how long is it expected to run for? The study started in September 2012 and ran until December 2013.

Who is funding the study? National Research Foundation of Korea (NRF).

Who is the main contact?. Professor Eun Chul Kim

# Contact information

### Type(s)

Scientific

#### Contact name

Prof Eun Chul Kim

#### Contact details

Bucheon St. Mary's Hospital #2, Sosa-Dong, Wonmi-Gu Bucheon, Kyungki-Do Bucheon Korea, South 420-717

# Additional identifiers

EudraCT/CTIS number

**IRAS** number

ClinicalTrials.gov number

Secondary identifying numbers

N/A

# Study information

#### Scientific Title

Comparison of antioxidant and inflammatory cytokine activities in tears of patients with dry eye syndrome treated with preservative-free vs preserved eye drops

# **Study objectives**

Dry eye syndrome is recognized as a highly prevalent inflammatory disease of the lacrimal functional unit caused by multifactorial reasons. Increase of the oxidative stress status in the conjunctiva of Sjogren syndrome patients appears to have a role in the pathogenesis of dry eye disease. Preservatives in eye drops can induce oxidative stress and inflammatory response in conjunctival epithelial cells and the rabbit dry eye model.

# Ethics approval required

Old ethics approval format

# Ethics approval(s)

Institutional Review Board at the Bucheon St. Mary's Hospital, 21/08/2013

# Study design

Randomized comparative clinical trial

#### Primary study design

Interventional

#### Secondary study design

Randomised controlled trial

#### Study setting(s)

Hospital

## 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

Dry eye syndrome

#### **Interventions**

Permuted blocks were obtained using a computer-based random code generator (Research Randomizer; http://randomizer.org/).

50 patients (Group 1) were treated four times with preservative-free 0.1% sodium hyaluronate and 0.1% fluorometholone for the first month and preservative-free 0.1% sodium hyaluronate and 0.05% cyclosporine for the second and third month.

50 patients (Group 2) were treated four times with preserved 0.1% sodium hyaluronate and preserved 0.1% fluorometholone for the first month and preserved 0.1% sodium hyaluronate and 0.05% cyclosporine for the second and third month.

Following instillation of the eye drops, symptoms and signs of dry eye are measured.

Total duration of treatment and follow-up for each study arm: 3 months

## Intervention Type

Other

#### Phase

Not Applicable

#### Primary outcome measure

- 1. Ocular surface disease index (OSDI)
- 2. Corneal fluorescein staining
- 3. Schirmer tear test (without anesthesia)
- 4. Tear film break-up time (tBUT)
- 5. Symptom score of dry eye
- 6. Impression cytology

Measured at baseline, 1, 2 and 3 months.

#### Secondary outcome measures

Antioxidant and Inflammatory cytokine activities in tears measured by ELISA at baseline, 1, 2 and 3 months.

#### Overall study start date

01/09/2012

#### Completion date

01/12/2013

# Eligibility

#### Key inclusion criteria

Eligible patients were at least 21 years of age and had a diagnosis of dry eye syndrome refractory to conventional management. Inclusion criteria were:

- 1. Schirmer test (without anesthesia) of 5 mm/5 minutes in at least one eye
- 2. Low tear film break-up time (tBUT) (<5 seconds)
- 3. Mild superficial punctate keratitis, defined as a corneal punctate fluorescein staining score of ≥1 in either eye (scale 0 [none] to 3 [severe]); and one or more moderate (≥2) dry eye related symptoms, including itching, burning, blurred vision, foreign body sensation, dryness, photophobia, soreness, or pain.

#### Participant type(s)

Patient

#### Age group

Adult

#### Sex

Both

#### Target number of participants

Group 1 (50 patients) was treated with preservative-free eye drops and group 2 (50 patients) was treated with preserved eye drops.

## Key exclusion criteria

Patients were excluded if they had:

- 1. A history of any ocular disorder including injury, infection, non-dry-eye ocular inflammation, trauma, or surgery within the prior 6 months
- 2. Were receiving concurrent treatment that could interfere with interpretation of the study results
- 3. Had any uncontrolled systemic disease or significant illness; or were pregnant, lactating, or considering becoming pregnant.
- 4. Patients could be discontinued before the completion of the study because of adverse events, pregnancy, protocol violations, lack of efficacy, or administrative or personal reasons.

#### Date of first enrolment

01/09/2012

#### Date of final enrolment

# Locations

#### Countries of recruitment

Korea, South

Study participating centre Bucheon St. Mary's Hospital Bucheon Korea, South 420-717

# Sponsor information

#### Organisation

Bucheon St. Mary's Hospital (Korea, South)

#### Sponsor details

c/o Eun Chul Kim #2, Sosa-Dong, Wonmi-Gu Bucheon, Kyungki-Do Bucheon Korea, South 420-717

#### Sponsor type

Hospital/treatment centre

#### **ROR**

https://ror.org/01fpnj063

# Funder(s)

## Funder type

Government

#### **Funder Name**

The National Research Foundation of Korea (NRF) (Korea, South)

# **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