associated with other conditions such as inflammation, proliferative symptoms, infections etc. The tamponade actually used are not associated with active substances able to treat or prevent these conditions.

To avoid these drawbacks, several attempts have been made.

A polymer gel has been developed (WO 99/21512) as tamponade. This is a photodymanic polymer which will gel when exposed to light and push back the retina. However, there is concern regarding toxicity issues due to the photodynamic ingredients of this gel.

WO 2006/078458 describes the use of a hydrogel of hyaluronic acid made with deuterium water. In this patent application, tamponade with increased density, in comparison to water, by addition of deuterium water and hyaluronic acid is attempted.

A recent patent (WO 2009/037384) uses a plastic bag placed in the vitreous cavity to be filled with the silicone oils. This strategy should avoid remaining oil after withdrawal. However, this procedure necessitates a second surgery to withdraw the bag at the end of the treatment.

[Technical issue]

It is an object of the present ~~invention~~embodiments disclosed herein to address one or more drawbacks associated with the prior art compositions. The main object of the present ~~invention~~embodiments disclosed herein is to provide a tamponade solution having (1) a high tamponing power and (2) a high reapplication force, (3) the faculty to enhance healing of the retina, (4) which is not toxic even after long term exposure and (5) when the solution is removed, by

aspiration after treatment, the remaining solution bioresorbs spontaneously.

[Summary]

In one aspect, there is provided a composition comprising at least one fatty acid glycerol ester for use for injection in the vitreous cavity during or after a vitrectomy procedure to treat retinal detachment, said composition being not an emulsion, being bioresorbable, being injectable in the vitreous cavity, having a density below 1 or a density above 1; having a surface tension ranging from 0.02 to 0.05 N/m (20 to 50 dynes/cm), being not susceptible to disperse or emulsify when injected in the vitreous cavity.

[Description of the invention]

The Applicant hereby proposes a composition comprising at least one fatty acid glycerol ester (FAGE) for use after a vitrectomy procedure, in order to restore the retina, said composition being bioresorbable, being injectable in the vitreous cavity, having a density below 1, preferably comprised between 0.90 and less than 1, more preferably ranging from 0.94 and 0.95 or a density above 1, preferably comprised between 1 and 1.5; having a surface tension of less than 50 dynes/cm more preferably between 20 and 50 dynes/cm, more preferably between 25 and 30 dynes/cm. Preferably, the composition of the invention is not susceptible to emulsify into droplets when injected in the vitreous cavity, as evidenced by the in-vitro test of example 3 below.

The composition of the invention is for use for replacing the vitreous humour, ordinarily present in the vitreous cavity and substantially or totally removed by vitrectomy. By substantially is meant that at least 90%v/v of the vitreous humour is removed.

In a vitrectomy, the whole content in vitreous humour is usually removed and the vitreous cavity is emptied. It may happen that part (i.e. less than 10%v/v of the initial volume of the vitreous humour) of the vitreous humour may remain within the cavity. In such event, the composition of this invention behaves as if the cavity was empty, i.e. it does not break into droplet, it does not emulsify and does not blur the vision of the patient. This ability of remaining homogeneous may be linked to the very nature of the fatty

CLAIMS

1. Composition comprising at least one fatty acid glycerol ester for use for injection in the vitreous cavity during or after a vitrectomy procedure, said composition being bioresorbable, being injectable in the vitreous cavity, not being an emulsion and having a surface tension of less than 50 dynes/cm more preferably ranging from 20 and 30 dynes/cm.

2. Composition of claim 1 having a density below 1, more preferably comprised between 0.90 and 1.

3. Composition of claim 1 having a density above 1, more preferably comprised between 1 and 1.5.

4. Composition according to anyone of claims 1 to 3, having a dynamic viscosity ranging from 20 to 60 mPa.s at a temperature of 20°C, preferably from 25 to 55 mPa.s at a temperature of 20°C, more preferably from 27 to 33 mPa.s at a temperature of 20°C.

5. Composition according to claim 1 to 4, having a refractive index ranging from 1.40 to 1.50, more preferably from 1.44 to 1.46 and even more preferably from 1.449 to 1.451.

6. Composition according to anyone of claims 1 to 5, wherein the composition further comprises at least one lipophilic therapeutic agent.

7. Composition according to anyone of claims 1 to 6, wherein the composition comprises at least one lipophilic therapeutic agent and at least one bioresorbable fatty acid glycerol ester, preferably a non-water miscible C6-C20

glycerol ester, wherein the composition is a solution comprising at least 90% w/w of C6-C20 glycerol ester, in weight to the weight of total composition, a therapeutic agent in an amount of more than 0 to 5.9 % w/w, in weight to the weight of total composition, the therapeutic agent being dissolved in the fatty acid glycerol ester.

8. Composition according to anyone of claims **1** to **7**, wherein the fatty acid glycerol ester is medium-chain triglycerides.

9. Composition according to anyone of claims **1** to **8**, for use in the treatment of retinal disorders.

CLAIMS

1. Composition comprising at least one fatty acid glycerol ester for use for injection in the vitreous cavity during or after a vitrectomy procedure to treat retinal detachment, said composition being not an emulsion, being bioresorbable, being injectable in the vitreous cavity, having a density below 1 or a density above 1; having a surface tension ranging from 0.02 to 0.05 N/m (20 to 50 dynes/cm), being not susceptible to disperse or emulsify when injected in the vitreous cavity.

2. Composition for use according to claim **1**, having a density below 1, more preferably comprised between 0.90 and 1.

3. Composition for use according to claim **1**, having a density above 1 more preferably comprised between 1 and 1.5.

4. Composition for use according to anyone of claims **1** to **3**, having a dynamic viscosity ranging from 20 to 60 mPa.s at a temperature of 20°C, preferably from 25 to 55 mPa.s at a temperature of 20°C, more preferably from 27 to 33 mPa.s at a temperature of 20°C.

5. Composition for use according to anyone of claims **1** to **4**, having a refractive index ranging from 1.40 to 1.50, more preferably from 1.44 to 1.46, and even more preferably from 1.449 to 1.451.

6. Composition for use according to anyone of claims **1** to **5**, wherein the composition further comprises at least one lipophilic therapeutic agent.

7. Composition for use according to anyone of claims **1** to **6**, wherein the composition comprises at least one lipophilic therapeutic agent and at least one bioresorbable fatty acid glycerol ester, preferably a non-water miscible C6-C20 glycerol ester, wherein the composition is a solution comprising at least 90% w/w of C6-C20 glycerol ester, in weight to the weight of total composition, a therapeutic agent in an amount of more than 0 to 6 % w/w, in weight to the weight

of total composition, the therapeutic agent being dissolved in the fatty acid glycerol ester.

8. Composition for use according to anyone of claims **1** to **7**, wherein the fatty acid glycerol ester is medium chain triglycerides.

9. Composition for use according to anyone of claims **1** to **8** wherein the use is further characterized by being a method for treating retinal disorders, including removing the vitreous fluid, and then injecting from 0.1 ml to 10 ml, more preferably from 0.5 to 8 ml of said composition in the vitreous cavity, preferably with a 27 or 30 gauge needle.