Summary of Product Characteristics

1 NAME OF THE MEDICINAL PRODUCT

Miochol®-E, 20mg, Powder and Solvent for instillation solution for intraocular use.

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Each powder vial contains 20mg acetylcholine chloride.

Miochol-E contains 10mg/ml of acetylcholine chloride, (20mg in 2ml) upon reconstitution.

For a full list of excipients, see section 6.1.

3 PHARMACEUTICAL FORM

Powder and solvent for instillation solution for intraocular use.
Vial: white solid or powder
Ampoule: clear, colourless solution
Filter: syringe filter.

4 CLINICAL PARTICULARS

4.1 Therapeutic Indications

To obtain rapid and complete miosis after delivery of the lens in cataract surgery as well as in penetrating keratoplasty, iridectomy and other anterior segment surgery where rapid complete miosis is required.

4.2 Posology and method of administration

Miochol-E is for intraocular irrigation only. A freshly prepared 1% solution should be used in the anterior chamber of the eye during surgery.

Adults and Elderly
In most cases a satisfactory miosis, which will last for approximately 20 minutes, is produced by seconds by 0.5 - 2.0 ml. A second application may be made at the discretion of the surgeon if prolonged miosis is required.

Children
Safety and effectiveness in children has not been established.

Route of administration: Intraocular irrigation during surgery.

4.3 Contraindications

Hypersensitivity to any of the ingredients.

4.4 Special warnings and precautions for use

If miosis is to be obtained quickly and completely, obstructions to miosis such as anterior or posterior synechia may require surgery prior to administration of Miochol-E.
In cataract surgery Miochol-E should be used after delivery of the lens.

If blister or paper backing is damaged or broken, sterility of the Miochol-E vial cannot be assured. Aqueous solutions of Miochol-E are unstable. The solution should therefore be prepared immediately before use. Any remainder should be discarded.

4.5 Interaction with other medicinal products and other forms of interaction

Although clinical studies with acetylcholine chloride and animal studies with acetylcholine or carbachol revealed no interference, and there is no known pharmacological basis for an interaction, there have been reports that acetylcholine and carbachol have been ineffective when used in patients treated with topical non-steroidal anti-inflammatory agents.

4.6 Fertility, pregnancy and lactation

The safety and efficacy of Miochol-E in pregnancy and lactation have not been established. Miochol-E should not be used in pregnant or lactating patients.

4.7 Effects on ability to drive and use machines

Not applicable.

4.8 Undesirable effects

Adverse reactions, which are indicative of systemic absorption, have been reported rarely in the literature. Symptoms include bradycardia, hypotension, flushing, breathing difficulties and sweating. Isolated cases of corneal oedema, corneal clouding and corneal decompensation have been reported with the use of Miochol-E, although a causal relationship has not been established.

4.9 Overdose

The symptoms of overdosage are likely to be effects resulting from systemic absorption, i.e. bradycardia, hypotension, flushing, breathing, difficulties and sweating. Atropine sulphate (0.5 - 1mg) should be given intramuscularly or intravenously and should be readily available to counteract possible overdosage. Adrenaline (0.1 - 1mg subcutaneously) is also of value in overcoming severe cardiovascular or bronchoconstrictor responses.

5 PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Acetylcholine is a physiological neuromediator of postganglionic parasympathetic nerve fibres (muscarinic action), skeletal muscles and ganglia of the sympathetic system (nicotinic action).

The ocular parasympathetic receptors of the muscarinic type are very numerous and localised:

- At the level of the pupillary sphincter, whose contraction causes miosis.

- At the level of the ciliary muscle, whose contraction allows accommodation and facilitates the flow of the aqueous humor by opening of the trabecular meshwork. In addition, the acetylcholine can have an inhibitory effect on the aqueous secretion. These two last factors result in a decrease in the intraocular pressure at the level of the lacrimal glands, whose stimulation causes tearing.

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5.2 Pharmacokinetic properties

Topical: not applicable.

5.3 Preclinical safety data

The active ingredient of Miochol-E is acetylcholine, a natural neurohormonal transmitter the pharmacological activity and toxicity of which have been clearly defined. The effect of Miochol has been demonstrated in several animal studies. The addition of electrolytes in Miochol-E resulted in very good local tolerability in the cat. Given that a low single dose of acetylcholine is administered by the intraocular route, the risk of systemic toxicity is very low.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Vial:
Mannitol (E421)

Ampoule:
Calcium chloride dihydrate
Magnesium chloride hexahydrate
Potassium chloride (E508)
Sodium acetate trihydrate
Water for injection

6.2 Incompatibilities

Not applicable

6.3 Shelf life

Unopened: 24 months.
Opened: Use immediately after reconstitution.

6.4 Special precautions for storage

Do not store above 25°C. Do not freeze.

6.5 Nature and contents of container

Miochol-E is supplied as packs containing 1 blister and 1 filter hub.

Packs are subjected to antimicrobial treatment with ethylene oxide.

One blister contains:
- Vial containing powder; clear, colourless type 1 glass with rubber stopper and plastic cap.
- Ampoule containing solvent: clear, colourless type 1 glass ampoule with one point cut (OPC).

One filter hub with 5 micron filter, luer lock (CE marking number : CE 0123).

6.6 Special precautions for disposal of a used medicinal product or waste materials derived from such medicinal product and other handling of the product

The reconstituted preparation is a clear, colourless solution.

Warning: Do not use if blister or peelable backing is damaged or broken. Open under aseptic conditions only. The contents of the blister can be guaranteed as sterile.

Directions for preparing Miochol-E

1. Inspect unopened blister to ensure that it is intact. Peel open blister.
2. Aseptically transfer the ampoule, vial and syringe tip filter hub to sterile field. Maintain asepsis during preparation of solution.
3. Aseptically attach a sterile 18 to 20 gauge, bevelled needle to the luer tip of a sterile disposable syringe with twisting motion to assure secure fit.
4. Break open the ampoule containing the solvent. The One Point Cut (OPC) ampoule must be opened as follows: Hold the bottom part of the ampoule with the thumb pointing to the coloured point. Grasp the top of the ampoule with the other hand, positioning the thumb at the coloured point and press back to break at the existing cut under the point.
5. Remove the needle protector and withdraw the solvent from the ampoule into the syringe. Discard ampoule.
6. Remove and discard plastic cap from top of vial.
7. Insert the needle through the centre of the vial stopper.
8. Transfer the solvent from the syringe to the vial.
9. Shake gently to dissolve drug.
10. Slowly withdraw the solution from the vial through the needle into the syringe.
11. Discard needle.
12. Aseptically open tip filter hub pouch.
13. Aseptically attach filter hub onto luer tip of syringe with a twisting motion to assure secure fit.
14. Aseptically attach a sterile blunt tip irrigation cannula to male luer of filter prior to intraocular irrigation.
15. Discard appropriately after use. Do not reuse the filter hub.

The solution must be mixed just before use since aqueous solutions of acetylcholine are unstable. Only clear and colourless solutions should be used.

Miochol-E should not be re-sterilised. The Filter Hub is recommended only for use with Miochol-E. Aspiration through the filter is not recommended. However, if utilised, discard needle and syringe filter to prevent recontamination of fluids during injection.

Do not aspirate and inject through the same filter.

Do not use unless a clear and colourless solution is produced.

For single use only. Discard any unused solution.

7 MARKETING AUTHORISATION HOLDER

Dr. Gerhard Mann Chem-Pharm. Fabrik GmbH
Brunsbuetteler Damm 165-173
13581 Berlin
Germany

8 MARKETING AUTHORISATION NUMBER

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10 DATE OF REVISION OF THE TEXT

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