Injection Device for Eye Disease

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Technology description

A device for easier delivery of therapeutic agents to the subconjunctival space of the eye
Background : Existing therapeutic agents are regularly delivered to the subconjunctival space of the eye, which requires a practitioner who is surgically trained. Further, a new class of sustained-release agents are being developed to treat glaucoma and will be deployed into the subconjunctival space. Glaucoma is the second most common cause of blindness, estimated to affect nearly 80 million people by 2020. Glaucoma has no cure, and all treatments seek to lower IOP (intraocular pressure) to slow or halt vision loss from the disease. Eye drops are currently the most used therapy, but users suffer from multiple drawbacks such as difficulty when self-administering and non-compliance. Adoption of a new sustained- release subconjunctival drug formulations will require a device for safe and easy injection for use in community ophthalmology and optometry offices.
Technology : Inventors at Georgia Tech have developed a device for delivering therapeutic agents to the subconjunctival space of the eye. The device is comprised of a needle, a therapeutic agent containing syringe, a single button, and a mechanical encasement. Drugs delivered to the subconjunctival space act as a depot for sustained-release. In one embodiment of the device, the mechanical encasement is non-actuating and uses suction to elevate the conjunctiva to a stationary needle and syringe. All embodiments of this device are disposable or semi-disposable.

Application area

Subconjunctival injections
Subconjunctival delivery of sustained-release glaucoma therapeutics

Advantages

Safer : Simplifies delivery and lowers the risk of complications
Easier : Device can be operated by a non-surgically trained individual using only a single hand
Increased Bio-availability : Less drug needed due to injection efficiency

Institution

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