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Drug Delivery Device in Ophthalmic Therapeutic: Ocular Implant

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Eye is a sensitive, vital organ of our body and if any complication is there than it can lead to serious effect on the visual activity of the individual. Development of novel drug delivery technologies is effective for treatment of ocular diseases. Effective drug delivery from ocular route remains a biggest challenge due to its complex anatomy & physiological structure. Controlled release formulation of various carrier system like nanoparticle, nanoemulsion, micro emulsion, dendrimers and microparticles has been emerged as novel strategies in ophthalmic. Various biodegradable as well as non-biodegradable polymers used in ocular implantable devices & the technological development of implants as a therapeutic device in the treatment of various ocular disorders has been discussed in this paper. Non-biodegradable intraocular implants present the advantages of controlling drug release with predicted kinetics over a long period of time. However, in contrast to biodegradable implants, these devices must be removed after complete drug release, representing a risk for patients. Biodegradable implants do not have to be removed as they are degraded or absorbed. Finally, there are many challenges to consider & overcome in order to develop biodegradable implants able to provide prolonged drug release within the therapeutic range for effective treatment of ocular diseases. The main characteristics of the implants and their potential clinical application is also highlighted in this paper.