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Systematic review on wound modulation agents in ocular surgeries

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Aim: Wound healing is a complex process which involves hemostasis and inflammatory phase, proliferation, repair phase and finally a remodeling phase. Ocular surgeries particularly glaucoma filtration surgeries favor towards minimal fibrosis to ensure patency of the new pathway were sustained. Therefore, finding a precise agent for this purpose is critical. This systematic review is aimed to identify agents that are being used to modulate wound healing process in ocular surgeries.

Methods: Medline and Medline in process were systematically searched (to June 2015) for English publication of observational, experimental and interventional human studies. Two independent reviewers evaluated studies for eligibility criteria and quality assessed the content.

Results: Eight groups of modulation agents were identified: anti-metabolite, anti-growth factor, Rho kinase (ROCK) inhibitor, gene therapy, laser therapy, herbs, barrier and miscellaneous agents. A total of 34 agents were retrieved. Most of these agents were used for glaucoma filtration surgeries, while other surgeries include dacryorhinostomy, strabismus and pterygium. Agents that were most frequently used in glaucoma surgeries were anti-metabolite agents. Potential modulating agents for future use in glaucoma surgeries was anti-growth factor agents such as anti-vascular endothelial growth factor like bevacizumab and ranibizumab.

Conclusion: A number of existing modulation agents which work at different pathways has been identified to have the potential to overcome the extensive fibrosis that occurred in ocular surgeries. However, there is not enough evidence yet to recommend the most effective modulating agents for glaucoma use other than the standard anti metabolites.

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