International Platform of Registered Systematic Review and Meta-analysis Protocols

INPLASY

Comparison of therapeutic effects of different femtosecond laser platforms in age-related cataracts

INPLASY202480118

doi: 10.37766/inplasy2024.8.0118

Received: 26 August 2024

Published: 26 August 2024

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ADMINISTRATIVE INFORMATION

Support - Natural Science Foundation of China under Grant (No. 82171026);the Fundamental Research Funds for the Central Universities, ZYGX2021YGLH214;Sichuan Science and Technology Program (2022NSFSC0385).

Review Stage at time of this submission - Preliminary searches.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202480118

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 26 August 2024 and was last updated on 26 August 2024.

INTRODUCTION

Review question / Objective To compare the therapeutic effects of different femtosecond laser platforms in age-related cataracts.

Condition being studied Phacoemulsification is a common method to treat cataract. Since the accuracy of traditional phacoemulsification cataract surgery is closely related to the surgical skills of the surgeon, more and more doctors currently choose femtosecond laser-assisted cataract phacoemulsification surgery. Therefore, we want to compare the efficacy of different femtosecond laser platforms in the treatment of age-related cataract through existing literature reports.

METHODS

Participant or population Patients diagnosed with age-related cataracts.

Intervention Cataract surgery assisted by a femtosecond laser platform.

Comparator Cataract surgery is assisted by another femtosecond laser platform or conventional phacoemulsification cataract surgery.

Study designs to be included Randomized controlled trial(RCT) or cohort study.

Eligibility criteria Inclusion criteria (1)Disesse:Age-related cataracts(the nuclear hardness of the lens is grade II to IV);(2)Intervention: femtosecond laser assisted phacoemulsification cataract surgery;

(3)Outcome parameters: UDVA, CDVA, IOP, corneal endothelial density(CED), central corneal thickness(CCT), negative pressure suction time, anterior capsule incision time, lens nucleus splitting time, anterior capsule incomplete incision cases, subconjunctival hemorrhage cases, cumulative dissipated energy(CDE), actual phacoemulsification time, effective phacoemulsification time(EPT).(4)Type of study: Randomized Controlled study (RCT) and cohort study.
Exclusion criteria (1)The patient had corneal disease, significant irregular corneal astigmatism, glaucoma, uveitis, retinal detachment, macular disease, and a history of fundus surgery and refractive surgery;(2)Non-randomized controlled trial(RCT) or cohort study;(3)Republished literature, reviews, meta-analyses, or conference abstracts; (4)Literature that does not indicate the type of femtosecond laser platform;(5)Data suitable for meta-analysis could not be provided.

Information sources Pubmed, embase, cochrane, CNKI, WanFang, vip, sinomed databases.

Main outcome(s) UDVA, CDVA, IOP, corneal endothelial density(CED), central corneal thickness(CCT), cumulative dissipated energy(CDE), effective phacoemulsification time(EPT).

Additional outcome(s) Negative pressure suction time, anterior capsule incision time, lens nucleus splitting time, anterior capsule incomplete incision cases, subconjunctival hemorrhage cases, actual phacoemulsification time.

Quality assessment / Risk of bias analysis Jadad scale, Cochrane tool,NOS scale.

Strategy of data synthesis Mesh meta-analysis.

Subgroup analysis no,Mesh meta-analysis, subgroup analysis could not be performed.

Sensitivity analysis no,Mesh meta-analysis, subgroup analysis could not be performed.

Country(ies) involved China(University of Electronic Science and Technology of China· Sichuan Provincial People's Hospital).

Keywords Age-related cataracts,femtosecond laser, phacoemulsification cataract surgery,meta analysis.

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