Perbandingan efektivitas dan keamanan nukleofraksis 4 segmen terhadap 6 segmen pada fakoemulsifikasi katarak derajat sedang keras = Comparison of effectiveness and safety of 4 segments and 6 segments nucleofractis in stop and chop technique for moderate hard cataract

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Abstrak

Tujuan: membandingkan efektivitas yang dinilai berdasarkan Cumulative Dissipated Energy (CDE), Phaco Time, Best Corrected Visual Acuity (BCVA), dan Keamanan yang diukur berdasarkan Endothelial Cell Density (ECD), Central Corneal Thickness (CCT), dan Balanced Salt Solution. (BSS) volume yang digunakan, dari empat dan enam segmen nukleofraktis dalam teknik fakoemulsifikasi stop and chop untuk katarak sedang-keras.
Metode: Uji klinis prospektif yang melibatkan 42 dengan densitas nuklear derajat NO/NC 3-5 berdasarkan Lens Opacities Classification System III (LOCS III), dirandomisasi menjadi dua kelompok nukleofraksis, empat segmen (21 subjek) atau enam segmen (21 subjek). Pengukuran objektif dilakukan pre operatif, 1 hari, 1 minggu, dan 1 bulan pasca operasi yang meliputi ECD, CCT, dan TPDK. Intra- operatif dinilai CDE, phaco time, dan volume BSS yang terpakai.
Hasil: terjadi penurunan ECD (5.76 ± 29.08 m VS 2.33 ± 13.73 m) dan peningkatan CCT (346.42 ± 154.45 sel/mm2 VS 247.05 ± 160.40 sel/mm2) pada kedua kelompok pada satu bulan pasca operasi. Tidak ada perbedaan yang bermakna pada TPDK satu bulan pasca operasi kedua kelompok (logMAR 0.05 VS 0.04). Parameter intra-operatif dalam kelompok empat segmen (CDE 20.73 ± 6.46, phaco time 78.49 ± 23.63 detik, BSS 59.38 ± 12.04 ml) sebanding dengan kelompok enam segmen (CDE 20.46 ± 5.47, phaco time 78.62 ± 13.80 detik, BSS 58.86 ± 13.32 ml), dan tidak ada perbedaan yang bermakna secara statistik.
Simpulan: tidak terdapat perbedaan yang bermakna secara statistik parameter efektivitas dan keamanan antara kelompok nukleofraksis empat segmen dan enam segmen. Namun, pasca operasi nukleofraksis empat segmen mempunyai kecenderungan menimbulkan efek kerusakan endotel lebih banyak dibandingkan nukleofraksis enam segmen.
.....Objective: to compare effectiveness, assessed by cumulative dissipated energy (CDE), phaco time, best corrected visual acuity (BCVA), and safety which were observed by endothelial cell density (ECD), central corneal thickness (CCT), and balanced salt solution (BSS) volume used, of four and six segments nucleofractis in stop and chop phacoemulsification technique for moderate-hard cataract.
Methods: This prospective study comprised forty-two subjects with NO/NC 3-5 nuclear density according to the Lens Opacities Classification System III (LOCS III) system. Patients were equally randomized into four segments or six segments nucleofractis group. Stop-and-chop technique were applied in all subjects. The objective measurements of ECD, CCT, and BCVA were performed pre-operative, 1 day, 1 week, and 1 month post-operative. Phaco time, CDE and BSS volume were measured intraoperatively.
Results: The mean ECD were reduced (5.76 ± 29.08 m VS 2.33 ± 13.73 m) and CCT increased (346.42 ± 154.45 cells/mm2 VS 247.05 ± 160.40 cells/mm2) in both groups after 1 month follow-up. No statistically difference was found between mean BCVA at 1 month follow-up in both group (logMAR 0.05 VS 0.04). All intraoperative parameters of four segments group (CDE 20.73 ± 6.46, phaco time 78.49 ± 23.63 second,

BSS 59.38 ± 12.04 ml) were comparable with six segments group (CDE 20.46 ± 5.47, phaco time 78.62 ± 13.80 second, BSS 58.86 ± 13.32 ml).
Conclusions: No effectiveness and safety difference between four and six segments nucleofractic in stop and chop phacoemulsification technique for moderate - hard cataract. However, our study demonstrates the tendency of higher endothelial cell loss in four segments nucleofractis.