

Efek pemberian tetes mata hydroxypropyl-guar terhadap densitas sel goblet, stabilitas lapisan air mata, dan interleukin 6 pasca peritomi konjungtiva 360 derajat = The effect of hydroxypropyl-guar on goblet cell density, tear film stability, and interleukin 6 after conjunctival peritomy 360 degree

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Abstrak

Latar Belakang: Tindakan peritomi konjungtiva meningkatkan penanda inflamasi pada permukaan okular dan menyebabkan penurunan densitas sel goblet yang berimplikasi pada ketidakstabilan lapisan air mata. Pemberian HP-guar diharapkan mampu memperbaiki keadaan permukaan okular pasca peritomi konjungtiva 360° dibandingkan kontrol.

Tujuan: Untuk menilai efektivitas artificial tears HP-guar dalam melindungi permukaan okular pasien pasca peritomi konjungtiva 360°.

Desain: Penelitian prospektif, uji klinis open label.

Hasil: Terdapat 23 subjek yang berpartisipasi dalam penelitian ini. Kelompok HP-guar menunjukkan hasil yang lebih baik dibandingkan dengan kelompok kontrol secara signifikan dalam hal TFBUT ($9,43 \pm 2,20$ vs $5,95 \pm 1,93$, $p=0,001$), densitas sel goblet ($68,73 \pm 97,49$ vs $10,00 \pm 22,09$, $p=0,012$), skor epitel ($1,73 \pm 1,00$ vs $4,55 \pm 1,57$, $p=0,000$). Tidak terdapat perbedaan bermakna antara kedua kelompok dalam hal skor lissamine green ($1,33 \pm 1,55$ vs $2,18 \pm 1,72$, $p=0,146$) dan IL-6 air mata ($60,32 \pm 17,86$ vs $57,44 \pm 24,67$, $p=0,782$).

Kesimpulan: Pemberian HP-guar lebih memperbaiki nilai TFBUT, densitas sel goblet dan epitel konjungtiva dibandingkan kontrol. HP-guar tidak berpengaruh terhadap skor lissamine green dan kadar IL-6 air mata.

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Background: Conjunctival peritomy, a step commonly done in ocular surgery, increases ocular surface inflammation and decreases goblet cell density (GCD) that could lead to tear film instability.

Hydroxypropyl-guar (HP-guar) is expected to improve ocular surface related to conjunctival peritomy.

Purpose: To evaluate HP-guar effectiveness in protecting ocular surface after conjunctival peritomy.

Methods: Randomized controlled trial, open label study, on subjects underwent scleral buckling surgery.

Result: Twenty-three participants were involved in this study. The HP-guar group showed statistically better results compared to the control group regarding Tear-film break-up time (TFBUT) ($9,43 \pm 2,20$ vs $5,95 \pm 1,93$, $p=0,001$), GCD ($68,73 \pm 97,49$ vs $10,00 \pm 22,09$, $p=0,012$), and epithelial score ($1,73 \pm 1,00$ vs $4,55 \pm 1,57$, $p=0,000$). No statistical differences were found between groups in lissamine green score ($1,33 \pm 1,55$ vs $2,18 \pm 1,72$, $p=0,146$) and IL-6 tear fluid level ($60,32 \pm 17,86$ vs $57,44 \pm 24,67$, $p=0,782$).

Conclusion: The addition of HP-Guar to regular treatment after conjunctival peritomy increases TFBUT, goblet cell density, and improves conjunctival epithelial cells. HPguar has no effect on ocular surface inflammation.