

# Efek dilatasi pupil dan keamanan penambahan anestesi topikal terhadap penetesannya tropikamid 0,5% dan fenilefrin 2,5% pada mata neonatus = Efficacy and safety of pre instilling topical anesthetic on pupillary dilation in newborn eyes / Monika Ratnasari

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Abstrak

## **ABSTRAK**

**Tujuan:** Membandingkan ukuran, perubahan dilatasi, dan laju dilatasi pupil serta perubahan tekanan darah sistolik, diastolik, mean arterial pressure (MAP), dan frekuensi nadi pada neonatus yang diberikan tetes mata tropikamid 0,5% dan fenilefrin 2,5% dengan maupun tanpa penambahan tetrakain 0,5%.

**Metode:** Uji eksperimental acak tersamar ganda ini membandingkan dua kelompok, yaitu yang mendapat tetes mata tetrakain 0,5% 5 menit sebelum penetesannya prosedur standar midriatikum (tropikamid 0,5% + fenilefrin 2,5% - 3x penetesannya tiap 15 menit) atau artificial tears + prosedur standar midriatikum. Seratus mata neonatus aterm sehat dirandomisasi ke dalam masing-masing kelompok. Pemeriksaan diameter pupil, tekanan sistolik, diastolik, MAP, dan frekuensi nadi dilakukan pada baseline, menit ke-15, 30, 45, dan 60 pasca penetesannya obat.

**Hasil:** Penambahan tetrakain 0,5% setelah 60 menit menghasilkan diameter pupil dan selisih perubahan dilatasi lebih besar, serta laju dilatasi pupil lebih cepat yang secara statistik bermakna ( $p < 0,05$ ). Terjadi peningkatan tekanan sistolik dan MAP serta penurunan frekuensi nadi yang lebih rendah dengan penambahan tetrakain 0,5%, tetapi tidak berefek serupa terhadap peningkatan tekanan diastolik. Perbedaan tersebut tidak bermakna secara statistik.

**Simpulan:** Penambahan tetrakain 0,5% terhadap tropikamid 0,5% dan fenilefrin 2,5% menghasilkan efek dilatasi pupil yang lebih besar dan lebih cepat. Prosedur ini aman dilakukan pada neonatus.

**ABSTRACT**

**Objective:** To evaluate the efficacy and safety in pre-instilling tetracaine 0.5% over mydriatic agents in dilating the pupil of newborn eyes.

**Design:** Double-blind randomized-controlled experimental study.

**Methods:** The study was performed in 100 eyes of full-term healthy newborns. Each eye was randomized to receive either 0.5% tetracaine (intervention group) or artificial tears (placebo group) five minutes prior to 0.5% tropicamide + 2.5% phenylephrine - 15 minutes apart for 3 times. Pupil diameter, size changes and dilatation rate, as well as systolic, diastolic, mean arterial blood pressure and pulse rate were measured at baseline, 15, 30, 45 and 60 minutes after eye drops instillation.

**Results:** Pupil diameter and size changes were significantly larger, and the rate of pupillary dilatation

significantly faster in the intervention group compare to the placebo group after 60 minutes ( $p < 0.05$ ). Increasing systolic and mean arterial pressure, along with decreasing pulse rate in the intervention group were lower than the placebo group. Higher increase of diastolic blood pressure was observed in the intervention group, although the value was not statistically significant.

Conclusions: Pre-instillation of 0.5% tetracaine over 0.5% tropicamide and 2.5% phenylephrine effected in larger and faster pupillary dilatation; and it appears safe to administer in newborn eyes.