# Comparison of the Effects of Three Different Combinations of General Anesthetics on the Electroretinogram of Dogs

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**Purpose:** To compare the effects of 3 different anesthetic combinations on the electroretinogram (ERG) in the same animals under similar laboratory conditions.

**Materials and Methods:** Thiopental-isoflurane (TI), medetomidine-ketamine (MK), and xylazine-ketamine (XK) were used on each of 12 healthy miniature schnauzers. The scotopic ERGs consisted of scotopic low stimulus strength (S) responses designated S1, S2, S3, S4, and S5, 1, 5, 10, 15, and 20 minutes after dark adaptation, respectively, and scotopic standard stimulus strength (S-ST) responses. The photopic ERGs included a photopic single flash (P) response and 31 Hz flicker (P-FL) responses.

**Results:** For S-ST, the amplitude of the a-wave using TI was significantly lower than that using and XK and the implicit time of the a-wave was significantly shorter than that using MK. For P, the amplitude of the b-wave using XK was significantly higher than that using MK. The implicit times of the b-wave using TI was significant longer and shorter than that of MK for S1, S2 and P-FL and for S4 and S-ST, respectively, and than that of XK for S2 and P-FL and for S5 and S-ST, respectively.

**Conclusion:** The results of the present study showed that TI affected both the amplitude and the implicit time of the a-wave for S-ST and the implicit time of the b-wave relatively more so than was the case when using XK or MK. Therefore, it appears that either XK or MK could be advantageous to use rather than TI for clinical studies.

**Key words:** electroretinography, medetomidine-ketamine, thiopental-isoflurane, xylazine-ketamine

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