

Comparison of the rebound tonometer (TonoVet[®]) with the applanation tonometer (TonoPen XL[®]) in normotensive cats

Wontae Kim, Manbok Jeong, Jaemin Chae, Youngwoo Park, Shinae Park,

Seeun Kim, Taehyun Kim, Jaesang Ahn, Jungtaek Ahn,

Jaeyoung Kim¹ and Kangmoon Seo*

Department of Veterinary Surgery and Ophthalmology,

College of Veterinary Medicine and BK21 Program for Veterinary Science,

Seoul National university, Seoul, Korea.
¹Taereung animal hospital, Jungnang-gu, Seoul, Korea.

Purpose: To compare the intraocular pressure (IOP) readings of the rebound tonometer (TonoVet[®]) with that of applanation tonometer (TonoPen XL[®]) and to study the feasibility of TonoVet[®] in normal cats.

Materials and Methods: Two hundred eyes of 100 clinically normal cats were used for this study. Complete ocular examinations, using slit-lamp biomicroscopy and indirect ophthalmoscopy, were conducted on each cat. The IOP was measured bilaterally using the rebound tonometer without applying topical anesthetic agent. After 30 seconds of topical anesthetic agent application, the IOP was measured by the applanation tonometer.

Results: The mean±SD IOPs measured by the rebound tonometer were 21.0±3.4 mmHg (range, 11 to 27 mmHg) and the applanation tonometer were 18.6±3.2 mmHg (range, 10 to 26 mmHg). There was a significant difference in the IOPs measured from both tonometer ($p < 0.001$). The linear regression equation describing the relationship between both tonometers was $y=0.736x + 7.258$ (y =rebound tonometer, x =applanation tonometer, $r^2=0.475$).

Conclusion: The results suggest that the rebound tonometer is feasible for IOP measuring compare with the applanation tonometer in cats.

Key words: intraocular pressure, rebound tonometer, applanation tonometer, cat

*corresponding author: kmseo@snu.ac.kr