Comparison of Accuracy of Systemic Blood Pressure using High Definition Oscillometry (HDO) monitor in anesthetic dogs

Jong-Sung Lee, Changbaig Hyun[1]*

[1]Section of Small Animal Internal Medicine, School of Veterinary Medicine, Kangwon National University, Chuncheon 200-701, South Korea

Purpose: The present study compared 2 indirect methods (ie. Doppler sphygmomanometry and high definition oscillometry) and a direct method

Materials and Methods: After 10 dogs were anesthetized with an intravenous injection of 5 mg/kg propofol, systolic blood pressure were method using three different methods: 1. Doppler sphygmomanometry (Parks Doppler 811B, Parks Inc, USA), 2. High definition oscillometry (MD15, medVet, Germany), 3. Direct measurement using a micromanometer-tipped catheter (Microtip catheter transducer SPC-350, Millar Instruments, Inc.)

Results: The mean systemic blood pressure values, measured by Doppler sphygmomanometry, high definition oscillometry and direct invasive measurement on 5 consecutive readings, were 131 - 9.7 mmHg, 139 - 11.3 mmHg and 142.94 - 11.3 mmHg, respectively. Five consecutive systemic blood pressure readings were obtained for each dog within 3 min using Doppler sphygmomanometry. More than 5 min was required to complete 5 consecutive systemic blood pressure readings by high definition oscillometry for all dogs.

Conclusion: This study revealed blood pressure measurement in Doppler sphygmomanometry was ~10 mmHg lower, while only ~ 3 mmHg lower in high definition oscillometry, compared to direct invasive measurement. The standard deviations among the 5 readings by measured by 3 different methods were all lower than 15 mmHg, suggesting all methods were acceptable for monitoring systolic blood pressure in anesthetic dogs.

Key words: Systolic blood measurement, oscillometry, doppler, dog

This study was supported by Careside® Korea

*Corresponding author: hyun5188@kangwon.ac.kr