Evaluation of whole blood viscosity and hematological data using scanning capillary tube viscometer in pigs
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Whole blood viscosity which is major determinants of hemorheology is associated with cardiovascular, endocrinal, and cerebral nervous disease. An acquiring accurate blood viscosity measurement has been major issues in clinical pathology not even in veterinary medicine, and new type of scanning capillary tube viscometer proposes solution with continuous measurement of viscosity over whole range of shear rates. The objective of this study is to evaluate the normal range of whole blood viscosity and the correlation between whole blood viscosity and hematological data. The blood samples were collected from jugular vein by venipuncture in pigs (n=130). Whole blood viscosity measured within 4 hours after collection using scanning capillary tube viscometer. Scanning capillary tube viscometer which is capable of measuring yield stress and viscosity of whole blood continuously over a wide range of shear rates from 1s$^{-1}$ to 1000s$^{-1}$ calculates viscosity using Casson fluid model. Mean diastolic and systolic blood viscosity of pigs were 34.66±7.84 and 4.88±0.85 respectively. Diastolic and systolic blood viscosity had a statistical significant correlation with the level of leukocyte (WBC), erythrocyte (RBC), hemoglobin (HGB), hematocrit (HCT), fibrinogen, alkaline phosphatase (ALP) and glucose in hematological examination (p<0.01). There were statistical significant differences of blood viscosity over whole range of shear rates among breeds and gender (p<0.05). The results suggested that correlation between whole blood viscosity and regular blood test such as complete blood cell count and serum chemistry in pigs and can be used as a reference data for further investigation.

Biography
Jun Koh is doing his graduate course in Department of Surgery, College of Veterinary Medicine, Chonbuk National University from 2012. His major is small animal general surgery and a field of research is related in general surgery and hemorheology.

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