Warfarin and blood viscosity: The role as a 'blood thinner'
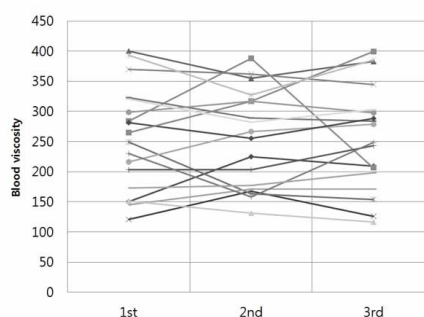
전북대학교병원

*소재경, 정래영

Background/Aims: People who simplistically call all anticoagulants "blood thinners" do our profession and the patients it serves are done a great disservice. However, there hasn't been definitive evidence for relationship between warfarin and blood viscosity yet. This study was to investigate the effect of warfarin on blood viscosity in real world patients. **Methods:** Consecutive sixty seven patients with atrial fibrillation who was taking a warfarin were enrolled (65.71±10.69, 40 males). INR level and blood viscosity were measured at these patients. The Pearson product moments correlation coefficients between blood viscosity and various blood factors include INR level were estimated. Eighteen patients with cerebral infarction who newly started taking a warfarin were enrolled. Baseline blood samples for blood viscosity were collected prior to warfarin administration. 2–3 days later after warfarin administration, blood viscosities were measured again and 2-3 days later after that, blood viscosity measured finally. Low-shear blood viscosities were measured at shear rates of 1 s-1, by a scanning capillary tube viscometer (Bio-Visco Inc., South Korea). **Results:** Baseline hematocrit, RBC aggregation, total protein, and albumin showed the highest linear associations with the baseline blood viscosity in the correlation analysis. However, INR level was not related to blood viscosity (R=0.012, *p*=0.925). Also, blood viscosity levels did not show linear correlation with INR level from consecutive measurement in warfarin naïve group after warfarin administration. **Conclusions:** INR level was not related to blood viscosity in patients who take a warfarin. Such result suggests that warfarin had no effect on the blood viscosity, but work in many different ways at various levels of the coagulation system.
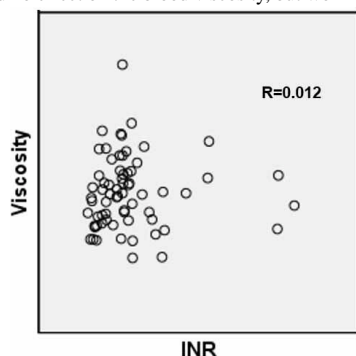
A. Relation between INR and blood viscosity   B. Change of blood viscosity after warfarin administration

Spontaneous intermuscular hematoma in a patient receiving Ticagrelor and Aspirin

한전 병원

*강현아, 홍지연

The patient of a 65-year-old man heavy drinker with a clinical history of hypertension and dyslipidemia underwent Percutaneous Coronary Intervention (PCI) due to unstable angina diagnosed our hospital. He was administered with aspirin, ticagrelor, b-blocker, calcium channel blocker and statin after PCI. After a month of his discharge, He presented to the emergency department with right back pain and bruise that suddenly occurred. Because his hemoglobin level dropped over 4 g/dl, we expected massive bleeding by trauma. In computed tomography (CT) imaging, He was diagnosed with Intermuscular hematoma in the right subcutaneous lesion (A) and fracture at the 4, 5, 6 and7th ribs (B) nevertheless he assured no traumatic history himself. Immediately, emergency thoracic angiogram was performed but there was no evidence of active arterial bleeding(C). We compared previous chest x-ray (CXR) (D) with the current one. There was already bone deformity in the previous CXR. Therefore, intermuscular hematoma at right chest wall was thought to be caused by spontaneous bleeding. It is a pretty rare event. It was concluded that the drug was the cause of spontaneous bleeding if it was not for trauma. He was discharged one week after discontinuation of aspirin and ticagrelor. After 4 months, there were no ischemic symptoms and no bleeding event at the time of his visit. There was another similar reported case in china that spontaneous hematoma under right scapular site in the setting of dual antiplatelet with ticagrelor without no traumatic history. Recently, there is concern that Asian people have a high bleeding risk compared with Caucasian people when using strong antiplatelet agents such as ticagrelor. Therefore, physicians must consider bleeding event when prescribing ticagrelor in Asian people.