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와파린 유발성 신병증의 발생률, 위험인자, 사망률에 대한 분석

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The incidence, Risk Factors, and Mortality Rate of Warfarin-related Nephropathy

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Introduction: Warfarin-related nephropathy (WRN) is a recently described disease entity, where excessive warfarinization (international normalized ratio (INR) ≥3.0) causes acute kidney injury. Little is known about WRN in our country. The incidence, risk factors, and mortality rate of WRN were analyzed using medical records from a single tertiary hospital.

Materials and Methods: Among patients treated with warfarin between March 2003 and December 2011 in Bundang Seoul university hospital, we recruited 643 patients who had at least one event of INR ≥3.0 (in case with multiple events, first event was used for analysis) and had serum creatinine (sCr) levels measured within 1 week after INR≥3.0 and within 6 months before INR≥3.0. WRN was defined as more than 50% or more than 0.3 mg/dL elevation of serum creatinine level measured within 7 days after INR≥3.0 over serum creatinine level measured within 6 months before INR≥3.0. CKD was defined as estimated GFR calculated by IDMS-traceable MDRD equation less than 60 mL/min/1.73m^2.

Results: WRN developed in 22.4% of all recruited patients. The presence of CKD did not influence the incidence of WRN (23.7% in CKD group and 21.9% in non-CKD group). The occurrence of WRN was significantly associated with malignancy and higher baseline eGFR. In laboratory findings after INR≥3.0, patients with WRN group had higher INR and lower hemoglobin and hematocrit than patients without WRN. More decrement in platelet count and more increase in INR were observed in patients with WRN. In multivariate analysis, the risk for the development of WRN increased as INR level increases and was strongly associated with malignancy. There was no significant difference in mortality rate which were 5.6% and 5.0% in patients with WRN and without WRN during mean follow-up duration of 19.1 months and 17.1 months, respectively.

Discussion: WRN developed in 22.4% of patients having excessive warfarinization (INR≥3.0). The presence of CKD did not influence the development of WRN. Higher INR level after warfarinization and malignancy were associated with the occurrence of WRN.

Key Words: 와파린 유발성 신병증, 유병률, 위험인자
Warfarin-related nephropathy, Incidence, Risk factors