

## The Effect of Cigarette Smoking on the Production of 20-Hydroxyeicosatetraenoic Acid in Human Platelet

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**Abstract :** Smoking has effect on platelet aggregation and the activity of anti-platelet drugs. The chemical 20-hydroxyeicosatetraenoic acid (20-HETE) is a cardiotoxic arachidonic acid metabolite which increases platelet aggregation. In this study, we investigated the influence of cigarette smoking on 20-HETE levels and protein expression of 20-HETE producing enzyme CYP4A11 in isolated platelets from smoker and non-smoker volunteers. The protein expression and 20-HETE levels were analyzed using immunoblot and High-Performance Liquid Chromatography with Mass Spectrometry (HPL-MS) assays. The results showed that 20-HETE level was higher significantly among smokers than non-smokers (t-test, p-value<0.05). The protein expression of CYP4A11 was significantly higher (t-test, p-value<0.05) among the platelets of smokers. We concluded that cigarette smoking increased the level of platelet activator 20-HETE through increasing the protein expression of CYP4A11. These findings may increase the understanding of smoking-drug interaction during antiplatelets therapy.

**Keywords :** smoking, 20-HETE, CYP4A11, platelet

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