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Monocytic Paraoxonase 2 (PON 2) Lactonase Activity Is Related to Myocardial Infarction

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Abstract : Background: Total cholesterol (TC), low-density lipoprotein cholesterol (LDL-C), very low-density lipoprotein cholesterol (VLDL-C), Apo B, and lipoprotein(a) was found as atherogenic factors while high-density lipoprotein cholesterol (HDL-C) was anti-atherogenic. Methods and Results: The study group consists of 40 MI subjects as cases and 40 healthy as controls. Monocytic PON 2 Lactonase (LACT) activity was measured by using Dihydrocoumarine (DHC) as substrate. Phenotyping was done by method of Mogarekar MR et al, serum AOPP by modified method of Witko-Sarsat V et al and Apo B by Turbidimetric immunoassay. PON 2 LACT activities were significantly lower ($p < 0.05$) and AOPPs & Apo B were higher in MI subjects ($p > 0.05$). Trimodal distribution of QQ, QR & RR phenotypes of study population showed no significant difference among cases and controls ($p > 0.05$). Univariate binary logistic regression analysis showed independent association of TC, HDL, LDL, AOPP, Apo B, and PON 2 LACT activity with MI and multiple forward binary logistic regression showed PON 2 LACT activity and serum Apo B as an independent predictor of MI. Conclusions- Decrease in PON 2 LACT activity in MI subjects than in controls suggests increased oxidative stress in MI which is reflected by significantly increased AOPP and Apo B. PON 1 polymorphism of QQ, QR and RR showed no significant difference in protection against MI. Univariate and multiple forward binary logistic regression showed PON 2 LACT activity and serum Apo B as an independent predictor of MI.

Keywords : advanced oxidation protein products, apolipoprotein-B, myocardial infarction, paraoxonase 2 lactonase
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