The effect of smoking, alcohol and coffee consumption on inflammation and the risk of Myocardial Infarction

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The aim of the study was to investigate the effect of smoking, alcohol and coffee consumption on the risk of myocardial infarction (MI) and on the generation of an inflammatory response. Data on 423 cases with MI and 465 controls was obtained through an interviewer-led questionnaire as part of the Maltese Acute Myocardial Infarction (MAMI) Study. Regular alcohol drinkers were subjects who had at least one drink/week for one year. Binge drinkers were those having ≥6 drinks on one occasion this last year. The effect of smoking and alcohol consumption on inflammation was investigated through hs-CRP levels and white blood cell (WBC) counts. Odds ratios are adjusted for the conventional risk factors of MI (AdjOR). Regular alcohol drinkers were protected against MI [AdjOR 0.6 (95% Confidence Interval (CI) 0.4-0.8)]. The risk of MI associated with binge drinking varied with the frequency. Current smokers had a 3.5-fold (95% CI 2.3-5.4) increased risk of MI. While no risk of MI was associated with ≤20 pack years, a higher number of pack years increased this risk. Ex-smokers had a lower risk of MI [AdjOR 1.8 (95% CI 1.2-2.6)]. The benefits of smoking cessation increased with increasing duration of smoking cessation. Hs-CRP and WBC counts were highest in current smokers. Regular alcohol drinkers tended to have lower WBC counts. Smokers who were regular alcohol drinkers had a 12.0% reduction in WBC counts compared with smokers who were non-drinkers. High consumption of daily cups of coffee was a risk factor of MI in smokers [AdjOR 7.4 (95% CI 1.7-31.5) vs AdjOR 1.2 (95% CI 0.4-4.1) in non-smokers and ex-smokers]. The effect of alcohol consumption on the risk of MI varies from protective to extremely deleterious depending on the frequency of drinking. Smoking is a strong risk factor of MI. This risk decreases with years of smoking cessation. At least part of the risk of MI associated with smoking is mediated through a higher inflammatory state. Regular moderate alcohol consumption has an anti-inflammatory effect. Smoking synergistically interacts with high coffee consumption, drastically increasing the risk of MI.