Value of neutrophil-to-lymphocyte ratio and its combination with GRACE risk score in predicting PCI outcomes in acute coronary syndrome

To the Editor,

I have read the article by Zhou et al. (1) entitled "A combination of the neutrophil-to- lymphocyte ratio and the GRACE risk score better predicts PCI outcomes in Chinese Han patients with acute coronary syndrome" with great interest which was published in Anatol J Cardiol 2015; 15: 995-1001. In their study, authors reported that patients with higher neutrophil-to-lymphocyte (NLR) had a higher incidence of MACE than those with lower NLR. Authors divided patients into three groups according to the tertiles of baseline NLR level and reported that during the follow-up period the MACE rate was 44.57% in the highest NLR group ($p<0.01$). This is a well-written study; I would like to draw attention to the antiplatelet therapy used by patients that can affect the results of the present study.

In total, 142 patients had MI and 908 patients had unstable angina pectoris in the present study (1). In patients with non-ST elevation acute coronary syndromes (NSTE-ACS), dual antiplatelet therapy (DAPT) with aspirin and clopidogrel has been recommended for 1 year over aspirin alone irrespective of stent type, according to current guidelines (2). In addition, it has been showed that DAPT with ticagrelor significantly reduced the MACE in patients with NSTE-ACS in contrast with the patients treated with aspirin and clopidogrel (3, 4). In the study by Zhou et al. (1), no information regarding the dual antiplatelet therapy has been provided. Authors should comment on the DAPT usage rates and the type of DAPT in both high NLR and low NLR groups and then compare the groups with respect to the GRACE risk scores. It would be helpful if the authors can provide this information.

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Author`s Reply

Authors of the aforementioned article did not send any reply for this Letter to Editor, despite our insistent requests.

Current studies about the energy drinks may not simulate the real life

To the Editor,

We have read the article of Hajsadeghi et al. (1), entitled "Effects of energy drinks on blood pressure, heart rate, and electrocardiographic parameters: An experimental study on healthy young adults" with great interest. Authors evaluated the effects of energy drink consumption on cardiovascular parameters in healthy young individuals. They reported a significant decline in heart rate and ST-T wave changes in subjects but no significant change in systolic and diastolic blood pressure, PR interval, QRS duration, and QTc interval following the consumption of energy drink.

Studies on the effects of energy drink on health have been increasing. Recently, a study investigated the acute effects of Red Bull energy drink on ventricular repolarization and could not find any significant alterations in ventricular repolarization by assessing the Tp-e interval and Tp-e/QT ratio (2). Hajsadeghi et al. (1) similarly reported that the QTc, an indirect representative of ventricular arrhythmia risk, did not alter significantly.

However, there are some conflicted data in the literature. Hajsadeghi et al. (1) reported that the heart rate significantly decreased and SBP and DBP did not change whereas Steinke et al. (3) reported that daily consumption of energy drink caused the HR, SBP, and DBP to rise not only on the 1st day but also on the 7th day. The main difference in those studies were the

volumes of energy drinks given to the participants; 250 mL in the study by Hajsadeghi et al. (1) vs. 500 mL in the study by Steinke et al. (3) We suggest that energy drinks may pose a dose-related risk when consumed excessively. Ammar et al. (4) had reported that caffeine-naïve subjects suffered persistent elevations of SBP and DBP after a single shot, and they recommended that longer period of caffeine abstinence was required to evaluate the real effects of caffeinated energy drinks on hemodynamic variables (4). In addition, caffeine content of energy drinks found in the marketing widely ranges from 50 mg to 500 mg (5), but caffeine content of the energy drink preferred in the study by Hajsadeghi et al. (1) only was 80 mg and may not exert the hazardous effects of an energy drink with high caffeine and other stimulants and energetics. Moreover, the consumption of energy drinks during heavy alcohol drinking may increase the risk of caffeine overdose and alcohol toxicity particularly in children and teenagers (5). Alcohol-induced atrial fibrillation was closely associated with reduced vagal tone, increased serum levels of catecholamine, and electrolyte imbalance, and those effects may be more prominent when energy drinks and alcohol are consumed together (5). High caffeine content may worsen the clinical effects of binging alcohol and energy drinks together not only by triggering atrial arrhythmias but also by causing ventricular arrhythmias.

In our opinion, these studies with low-volume and low-dose caffeinated energy drinks may not clinically simulate the harmful effects of high volume of energy drinks and high dose of caffeine particularly when consumed with alcohol or illicit drugs. Effects of different volumes of energy drinks with different caffeine content should be evaluated in further studies.

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Author`s Reply

To the Editor,

First of all, we thank the authors for their great interest in our work entitled "Effects of energy drinks on blood pressure, heart rate, and electrocardiographic parameters: An experimental study on healthy young adults" published in Anatol J Cardiol 2016; 16: 94-9 (1). In accordance to our discussion, they also notified the disparities between results of different studies on hemodynamic effects of energy drinks. For example, according to the literature, although Alford et al. (2) found no significant change in blood pressure (BP) after taking energy drinks, Steinke et al. (3) reported a significant BP rise. In addition, post-drink heart rate (HR) was reported to be significantly dropped by Bichler et al. (4), whereas it was reported to be significantly increased by Steinke et al. (3). We mentioned that factors such as different fitness state and lifestyle of the study subjects, different types of energy drinks or different amounts of the same type of energy drink, and/or the different duration of post-consumption patient monitoring all might be playing a role for those discrepancies.

Considering the caffeine content of marketing energy drinks ranging from 50 mg to 500 mg (5), the authors of the letter stated that studying on doses as low as 80 mg caffeine (used in our study) may not exert the hazardous effects of an energy drink with higher caffeine contents and other stimulants. As we have discussed in the article, we agree that different caffeine contents have different hemodynamic effects and thus the results of studies on low-caffeine energy drinks are not fully applicable to the cardiovascular effects of high-caffeine content beverages. Nevertheless, as we have mentioned in the article, a lower dose of caffeine has some specific hemodynamic effects itself, i.e., HR is diminished after <5 mg/kg caffeine but is increased after higher doses. Moreover, we have described three literature-based possible explanations for HR decline after energy drink consumption, which confirms the importance of studying the cardiovascular effects of low-dose caffeine.

Finally, it is not possible to disagree with the authors of the letter mentioning that concurrent alcohol drinking or illicit drug abuse may increase the risk of consumption of caffeine-containing beverages. In our study, we excluded subjects with regular alcohol intake or those with a history of substance abuse but that issue might be focused on future investigations.