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## Author's Reply

To the Editor,

We are pleased by interest and valuable comments by authors. They correctly pointed out some unclarities in our letter, as some information were not presented due to limited extend of scientific letter format (1). We are glad to supplement this information here.

The first remark was about the method used for blood sample collection. EDTA containing tubes were used for mean platelet volume and platelet count examination. All samples were processed in less than 2 hours. According to the literature (2) and our experience in such settings the mean platelet volume increase does not excess 10%. Moreover, using a citrate can result in changes of mean platelet count (2). Samples for aggregometry were collected in hirudine, which seems to produce better results than citrate or lepirudine and is generally available for this method (3).

Another remark concerned the potential bias caused by impact of comorbidities on mean platelet volume. In his letter a detailed summary of such confounding factors, namely smoking, obesity, hyperlipidemia, hypertension, coronary artery disease, metabolic syndrome, statin use and atrial fibrillation is presented. These associations correlate with finding that patients with higher mean platelet volume are in higher risk of ischemic heart disease (4) suggests that such bias must be excluded.

We analyzed the influence of smoking, diabetes, atrial fibrillation, left ventricle systolic dysfunction (5) [ejection fraction <40% and inflammation (6) (hs-CRP >20 mg/L (7)]. C-reactive protein was measured using CRPL3 Tina-quant C-Reactive Protein Gen. 3 assays by Roche Diagnostics, Germany. Statin use was not added in statistical analysis, because only three patients were not treated using these agents. None of risk factors mentioned above was associated with increased mean platelet volume (Table 1). Regression analysis was not beneficial either.

Therefore we expect that the relation of mean platelet volume to both high on-treatment platelet reactivity and increased mortality is rather based on alteration of platelet functions than by concomitant association with another risk factor. Unfortunately, number of patients is insufficient for detailed statistical evaluation. This study also cannot explain the exact etiology of platelet function impairment. Despite these limitations the study suggests that mean platelet volume can be used as marker of high on-treatment platelet reactivity and for risk stratification.

**Table 1. Mean platelet volume according to presence of comorbidities**

	Mean platelet volume (f)		P
	Risk factor present	Risk factor not present	
LV EF <40% (n=52)	10.9±0.8	10.7±1.2	NS
Atrial fibrillation (n=22)	11.1±0.9	10.6±1.2	NS
Diabetes mellitus (n=48)	10.8±1.7	10.6±0.9	NS
Smoking habit (n=104)	10.7±0.9	10.5±1.3	NS
hs-CRP <20 mg/L (n=27)	10.8±1.5	10.6±1.0	NS

LV EF - left ventricle ejection fraction

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## Factors influencing the use of ambulance among patients with acute coronary syndrome: results of two centers in Turkey

Dear Editor,

We have read article published in the Anatolian Journal of Cardiology about the use of ambulance among patients with acute coronary syndrome (ACS) by Demirkan et al. (1) with a great interest. In this article, it was determined that large proportion of patients with ACS were transported to hospitals in unsafe conditions instead of using ambulance. In the conclusion part; the importance of health educational programs for the formation of a behavioral changes in using ambulance and the need for a larger study were emphasized.

We are working in the Department of Paramedics, in our Eskişehir Osmangazi University, which had been founded 16 years ago. After reading the article; we decided to mention about paramedics, who are educated for working in ambulance services.

Paramedic profession was found in USA in 1970's in prehospital emergency settings. Paramedics work on the scene of emergencies to assess a patient's condition, provide medical care at an advanced life support level in the pre-hospital environment at the point of illness or injury and also transport the patient to a hospital if necessary (2).

In our country, Paramedic Education was began as a two-year degree program by the name of "Ambulance and emergency care technician" in Dokuz Eylül University in 1993. Nowadays, education is continuing under the name of "First aid and emergency care" in 69 university with 98 programs (3).

In First Aid and Emergency Care Programs, paramedic education starts with a background program of anatomy, physiology and pharmacology. Then paramedic students are trained to use ambulance equipments, initiate intravenous infusions, calculate medication dosages and administer appropriate medications, perform detailed physical examinations and advanced levels of prehospital care for medical emergencies and trauma. Paramedic training focused on many of the advanced skills such as interpreting electrocardiograms, performing endotracheal intubation, defibrillation and advanced cardiac life support (2).

Paramedics authority and responsibilities are appointed by the Ministry of Health (MoH) in our country with Emergency Health Services Guidelines in 2000. Paramedics are employed by MoH in 112 Emergency Health Services in 2004 (4).

According to the Emergency Health Services Guidelines, paramedics provide advanced pre-hospital emergency care under medical command authority to acutely ill or injured patients and transport patients by ambulance or other appropriate emergency vehicles. Some of the paramedic responsibilities are, twelve-lead ECG monitoring and interpretation, performing advanced airway management, tracheal intubation, oxygen administration, intravenous fluid replacement, cardiopulmonary resuscitation including intubation, drug administration (includes antiarrhythmics), ECG interpretation (may be limited to three-lead), semi-automatic and/or manual defibrillator, trauma stabilization and administer permitted drugs to include any drug in a practicing protocol or ordered online.

In our country, Ambulance Services are activated by Emergency Call Center by receiving the emergency call which is made from 112 free telephone number. The ambulance team that reached the scene provides emergency medical care and if necessary, transport the patient to a hospital. Treatment can also be continued en route to a hospital if more definitive care for the patient is required.

Beyond being a team of health care services, we think that being knowledgeable about the new health professions as an important role in the planning and the execution of community education.

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## Radiation safety awareness and practice among Iranian cardiology and radiology residents/fellows

To the Editor,

There are limited reports in the literature addressing radiation safety awareness and practice in post-graduation educational groups including cardiology and radiology residents/fellows (1, 2). In this target population, there are some unanswered questions about their awareness/practice of radiation protection. These include the educational courses offered by the universities for residents about radiation exposure and its risks, the current state of safety devices usage, awareness about hazardous radiation risks, being familiar with international guidelines in this regard, and the like. Hence, we decided to study the awareness and practice of a sample of Iranian cardiology and radiology fellows/residents about radiation safety protocols and using protective devices against radiation. For this reason, we gathered the required data using a pre-designed questionnaire from 725 cardiology or radiology residents/fellows.

Only ten percent of the sample had attended radiation protection training programs. Eight percent had information about the amount of radiation they received during the preceding year. Only less than four percent (3.7%) of the participants reported that complete blood cells (CBC) checking had been performed in their educational centers and 18.1% of them personally checked their CBC. Thyroid collars, lead shielding and radiation badges were commonest radiation protection devices. Most (67%) of them advocated that in their journal clubs they did not have any discussion about radiation protection. Just 0.8% reported that such discussions are made regularly in their academic meetings and 30.5% reported this as being occasional. They reported that 17.9% of their professors usually did not respect to international protocols such as ALARA (as low as reasonably achievable) strategy. Only 21.7% of them were aware about radiation rules within pregnancy period. A few numbers of residents/fellows (11.7%) were aware of any radiation protection guidelines in the textbooks and among them 38% used the Iranian Atomic Energy Organization guideline for radiation protection. Near to one third (29.8%) of the survey respondents read some references about radiation impact on human life themselves. Among the respondents, only 7.9% reported that there was "a defined instruction document about dealing with radiation and its protection" in their center and most of them (65.8%) were not aware about radiation protection instruction in their center.

Radiation exposure might lead to major adverse impacts on clinical practitioner especially clinical cardiologists and radiologists. Cardiology and radiology residents/fellows are exposed to higher levels of radiation than faculty members due to their educational role in health care system (3). Some researchers reported that in addition to inadequate training, some other causes such as discomfort of using protective devices and fear of impairment of image quality due to reduced time of radiation process were responsible for lower awareness of cardiology and radiology residents/fellows (4). Awareness/practice of Iranian cardiology/radiology residents/fellows about radiation exposure safety issues is not