

Increased platelet serotonin levels in hypertensive patients already taking antihypertensive drugs

Antihipertansif tedavi alan hastalarda artmış trombosit serotonin seviyeleri

Serotonin (5'-hydroxy tryptamine; 5-HT) is a bioamine, which is synthesized from L-tryptophan mainly in enterochromaffin cells of the gastrointestinal tract and central nervous system. It has been implicated in various disorders including pulmonary hypertension and essential hypertension (1). However, there is paucity of data about the effect of antihypertensive therapy on platelet serotonin levels.

Ninety-one patients with previous diagnosis of hypertension and already taking antihypertensive drugs were included in the study. We further subdivided these patients into "uncontrolled" (Group A, n=44, mean age: 48±10 years, male/female ratio: 26/18) and controlled groups (Group B, n=47, mean age: 51±13 years, male/female ratio: 29/18) according to whether their average 24-hour blood pressure value is higher (uncontrolled group) or lower (controlled) than 135/85 mmHg. Thirty-three healthy volunteers were also included in the study as Group C (mean age: 46±12 years, male/female ratio: 19/14). The platelet serotonin levels were determined in venous blood samples of the participants by using a high performance liquid chromatography system (Agilent 1100 Series; CA, USA). Continuous variables were expressed as mean ± 1 SD. The statistical comparisons among groups were done by one-way ANOVA test. Chi-square test was used for comparison of categorical data. The significance of p value was set at 0.05.

There were no statistically significant differences among groups in terms of age, gender distribution, weight and height. Antihypertensive drug use in Group A and B patients was as following: diuretics (23% vs. 19%, p=0.186), calcium channel blocker (20% vs. 28%, p=0.142), angiotensin converting enzyme inhibitors (30% vs. 34%, p=0.161), angiotensin II receptor blockers (20% vs. 17%, p=0.194) and beta-blockers (6% vs. 4%, p=0.308). Our results showed that although mean platelet 5-HT concentrations did not differ significantly between Group A (5.9±4 nmol/10⁹) and group B (6.2±2.9 nmol/10⁹), control patients had significantly lower mean platelet 5-HT concentration (1.4±0.3 nmol/10⁹) than patients in Group A and B (p<0.001 for both). Contrary to our results, platelet serotonin uptake and consequent platelet serotonin levels have been found to be decreased in essential hypertension (2, 3). We thought that the presence of antihypertensive therapy may be the underlying cause for high platelet serotonin levels in our study. Indeed, antihypertensive with isradipine increased platelet serotonin content (4). Such an effect can consequently decrease plasma serotonin levels as previously shown by Huang et al. in 68% of their hypertensive patients treated with quinapril (5).

In conclusion, antihypertensive therapy was associated with higher platelet serotonin levels in hypertensive patients than in control subjects. However, further controlled trials are needed for both confirmation and evaluation of our results.

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doi:10.5152/akd.2010.022

Acute stress-induced late drug-eluting stent thrombosis leading to hyperacute myocardial infarction

Hiperakut miyokard infarktüsüne yol açan akut stres ilişkili geç ilaç kaplı stent trombozu

Drug-eluting stents (DES) have been proven to reduce restenosis and reintervention compared with bare-metal stents (BMS). However, a number of analyses have recently shown increased rates of late stent thrombosis in patients with DES. The exact mechanisms leading to stent thrombosis remain unclear. It can occur at any point during the follow-up period, not necessarily triggered by interruption of dual antiplatelet therapy.

A 55-year-old man presented with acute onset of central chest pain. He had undergone percutaneous coronary intervention (PCI) with the DES deployed in the proximal left anterior descending (LAD) and right coronary artery in August 2007, and had not had any health problems or cardiac complaint since then. He was on the following medications: aspirin 150 mg/day, clopidogrel 75 mg/day, simvastatin 40 mg/day, lisinopril 10 mg/day, and metoprolol 50 mg/day. He was readmitted with acute chest pain in February, 2008. The chest pain was preceded by severe emotional distress following a car accident, where the patient ran into an elderly pedestrian and thought that he killed the man. This event caused extreme anxiety in the patient. Immediately afterwards, the central chest patient started. An electrocardiogram obtained at the ambulance revealed extensive anterior ST-segment elevation. Emergency coronary angiography revealed the complete stent occlusion