The effects of steroids on endothelial function

To the Editor,

We read the article about the effects of high-dose steroid treatment used to treat acute demyelinating diseases on endothelial and cardiac functions entitled "The effect of highdose steroid treatment used for the treatment of acute demyelinating diseases on endothelial and cardiac functions." published in Anatol J Cardiol 2017; 17: 392-7 by Çaldır et al. (1) with great interest. The main argument of the authors was that steroids cause endothelial dysfunction. The authors used brachial artery flow-mediated dilatation (FMD) and carotid intima-media thickness (cIMT), which are indirect techniques, to measure endothelial dysfunction. They said that FMD changes that occurred 3 months after steroid treatment might indicate endothelial dysfunction. But we think that this result is not reliable, as FMD is not a valuable indicator without cIMT change. Endothelial dysfunction due to steroid use is related to arterial hypertension. It is not possible to diagnose endothelial dysfunction without a pathological examination performed after 3 months of steroid use. Also, inflammation is another important point of endothelial dysfunction. Inflammation involves the bonding of leukocytes from the bloodstream to the vessel wall via selectins, vascular cell adhesion molecules, intercellular adhesion molecules, chemokines, and interleukins (2). It has been demonstrated in many experimental and clinical studies that steroids have anti-inflammatory effects (2, 3). Certainly steroids, as strong anti-inflammatory agents, can have positive effects on endothelial dysfunction (2). Another study reported that steroids also have antiproliferative effects on smooth muscles (4). Inhibition of smooth muscle cell proliferation also decreases intimal hyperplasia, and so, endothelial dysfunction (2, 5). In this aspect, it is therefore projected that steroids are beneficial for endothelial dysfunction. We await the opinions of the authors on this topic.

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References

1. Çaldır MV, Çelik GK, Çiftçi Ö, Müderrisoğlu İH. The effect of highdose steroid treatment used for the treatment of acute demyelinating diseases on endothelial and cardiac functions. Anatol J Cardiol 2017; 17: 392-7.
2. Zakkar M, Luong le A, Chaudhury H, Ruud O, Punjabi PP, Anderson JR, et al. Dexamethasone arterializes venous endothelial cells by inducing mitogen-activated protein kinase phosphatase-1: a novel anti-inflammatory treatment for vein grafts? Circulation 2011; 123: 524-32.
3. Gökalp O, Yürekli I, Kıray M, Bağrıyanık A, Yetkin U, Yürekli BS, et al. Assessment of protective effects of pheniramine maleate on reperfusion injury in lung after distant organ ischemia: a rat model. Vasc Endovascular Surg 2013; 47: 219-24.
4. Park TG, Yoo HS. Dexamethasone nano-aggregates composed of PEG-PLA-PEG triblock copolymers for anti-proliferation of smooth muscle cells. Int J Pharm 2006; 326: 169-73.
5. Gökalp O, Yürekli I, Mavioğlu L, Kıray M, Bağrıyanık A, Kestelli M, et al. The effect of ascorbic acid on proliferation of vascular smooth muscle cells and intimal hyperplasia. Turkiye Klinikleri J Med Sci 2013; 33: 126-31.

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