Letter to the Editor

Female gender, menstrual cycle and estradiol affect plasma levels of monocyte chemotactic protein-1 (MCP-1) in humans

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Received 8 May 2002; accepted 29 May 2002

With great interest we have read the publication by Störk et al. [1] showing that hormone replacement therapy (HRT) decreased plasma levels of monocyte chemotactic protein-1 (MCP-1) in humans: HRT lowered MCP-1 levels by approximately 17% in hypercholesterolemic women with borderline hypertension after 12 months of therapy (treatment consisted of 1 mg/d estradiol plus 25 µg gestodene for 12 days either every month or every 3 months).

In their list of limitations the authors state that no comparison has been made between premenopausal women and men. Yet, this is not a limitation since we have reported, even before the submission of their manuscript, that premenopausal women have significantly lower MCP-1 levels than men [2]. In addition, MCP-1 levels decrease by approximately 15% from the follicular to the luteal phase of the menstrual cycle. This diminution in MCP-1 is of similar magnitude as the estradiol effects on MCP-1 levels in postmenopausal women [2]. Taken together, these studies suggest that female sex hormones decrease MCP-1 levels, which could have cardioprotective effects.

Administration of angiotensin converting enzyme inhibitors also decreases MCP-1 levels in humans with coronary artery disease [3] or hypertension [4]. As both estrogens and ACE-I have been suggested to increase nitric oxide (NO) production, it will be interesting to see whether a synergistic effect can be observed between estrogens and ACE-I on MCP-1 plasma levels.

References


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