EFFECTS OF ATORVASTATIN TREATMENT ON THE MODULATION OF LEUKOCYTE FUNCTION IN PATIENTS UNDERGOING PERIPHERAL VASCULAR INTERVENTION: A LONGITUDINAL STUDY

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Background: In the last decade, compelling evidence has supported the idea that vascular inflammatory processes are the key mechanisms in early atherosclerosis (ATH) as well as in the evolution and destabilization of the atheromatouse plaques [1]. Therefore, attention is being focused to systemic inflammatory markers which may reflect the flogistic activity in the atheromatouse plaques. It is well known that statins, beyond their lipid-lowering properties, exert pleiotropic effects on different cell types as immune cells (for example T lymphocytes) [2]. Available experimental evidences, thus, suggest that the down-regulation of AT_1R-operated pathways may represent a primary mechanism to interfere with the processes leading to ATH and reduce the cardiovascular risk [3; 4]. **Aim and Methods:** The pourpose of this study was to investigate whether the treatment with statin may affect some key functional responses in isolated PBMC of patients undergoing to peripheral vascular interventions. We evaluated the levels of pro- and anti-inflammatory cytokines produced (in resting and LPS-stimulated cells: IFNγ, IL-10 and TGFβ) and the pattern of expression of angiotensin II type receptor (AT_1R) in isolated PBMC obtained from venous blood of patients during long-term administration of atorvastatin. As a secondary end point we compared PBMC functions and production between different treatment regimen (any, lower (10 mg/die) and intensive (80 mg/die) dose of atorvastatin). For this purpose 12 patients (2 F, 10 M; age (mean±SD: 67,7±6,8 years), with peripheral artery disease were randomized: 0 – 10 – 80 mg/die of atorvastatin. PBMC were isolated from these subjects one month before (visit 1), the day of the peripheral vascular intervention (visit 2), three and six months after (visit 3 and 4). The cytokines levels were measured with Elisa technique and the expression of AT_1R was evaluated by means of flow cytometric analysis. **Conclusion:** We have observed that atorvastatin treatment influences the cytokine production in PBMCs of patients. Interestingly, atorvastatin dose regimen differently modulates this response. This modulatory effect on PBMC function can result in a different interference on plaque progression, suggesting that lipid-lowering treatment (statins) may be effective in limiting plaque development.

References

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