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Lymphocyte-suppressing effect of simvastatin in mixed dyslipidemic patients but not impaired glucose tolerance patients

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Abstract:
This study compared the effect of simvastatin on lymphocyte secretory function between patients with impaired glucose tolerance (IGT) (n = 30) and mixed dyslipidemia (n = 29). Lipid profile, glucose metabolism markers (fasting and 2-h post-glucose challenge glucose levels, HOMA-IR and glycated hemoglobin), plasma CRP levels and the release of interleukin-2 and interferon-γ by phytohemagglutinin-stimulated T lymphocytes were determined before and after 30 and 90 days of simvastatin administration (20 mg daily). Phytohemagglutinin-stimulated T cells from both IGT and mixed dyslipidemic subjects released significantly higher amounts of both cytokines than lymphocytes of 30 dyslipidemia-free individuals with normal glucose tolerance. Despite improving the lipid profile, simvastatin produced no effects on glucose metabolism markers in either treatment groups. The drug normalized the lymphocyte cytokine release and plasma hsCRP in mixed dyslipidemic patients but not in IGT patients. Our study indicates that the presence of mixed dyslipidemia and IGT is associated with the enhanced secretory function of human lymphocytes. Simvastatin is an effective lymphocyte-suppressing agent in mixed dyslipidemic patients but not in IGT patients.

Key words:
simvastatin, mixed dyslipidemia, impaired glucose tolerance, lymphocytes, interleukin-2, interferon-γ