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## Relationship between the free thyroxine (FT4) and monocyte chemo-attractant protein-1 (MCP-1) serum levels, which is a marker for atherosclerosis studied in postmenopausal and obese women without manifest thyroid disease

Ildikó Molnár

EndoMed Debrecen Kft., Hungary

A strong evidence has been demonstrated for an increased risk of stroke in patients with autoimmune thyroiditis. Monocyte chemoattractant protein-1 (MCP-1) plays an active role in vascular disease leading to stroke in consequence of acute thrombosis. The relationship between free thyroxine (FT4) and MCP-1 serum levels was investigated in 72 postmenopausal, 37 obese and 16 healthy, control women without manifest thyroid disease. Serum levels of MCP-1 were measured with enzyme-linked and FT4 with chemiluminescence immunoassays. The results were evaluated according to age, body mass (BMI) index and thyroid gland volume (TGV) of patients. An inverse correlation between FT4 and MCP-1 serum levels was found in the whole group ( $P < 0.018$ ,  $r = -0.4648$ ), and a positive correlation between FT4 and age ( $P < 0.003$ ,  $r = 0.5177$ ). In detail, MCP-1 levels inversely correlated with FT4 levels in postmenopausal ( $P < 0.01$ ,  $r = 0.5586$ ), and positively with BMI index ( $P < 0.04$ ,  $r = 0.5788$ ) in obese women. In controls, FT4 serum levels showed a strong association with TGV ( $P < 0.02$ ,  $r = 0.7918$ ). MCP-1 serum levels increased in postmenopausal and obese women compared with those in controls ( $17.46 \pm 2.96$  and  $19.55 \pm 3.03$  ng/ml vs.  $15.93 \pm 0.56$  ng/ml,  $P < 0.043$  and  $P < 0.0001$ , respectively). Surprisingly, FT4 levels were significantly decreased ( $13.9 \pm 2.58$  vs.  $15.61 \pm 2.81$  pmol/l,  $P < 0.003$ ) and MCP-1 levels increased ( $P < 0.01$ ) in obese women compared with those in postmenopausal women. In summary, elevated MCP-1 serum levels are present in postmenopausal and obese women without manifest thyroid disease. MCP-1 levels were inversely associated with FT4 in postmenopausal and positively with BMI index in obese women. In postmenopausal and obese women without manifest thyroid disease, the reduced FT4 serum levels can be regarded as a marker of risk for atherosclerosis via elevated MCP-1 levels.

### Biography

Ildikó Molnár has completed PhD in the special field of Graves' ophthalmopathy at the Candidate of Science Course (PhD) of Hungarian Academy of Science. Work and research connected her to Kenézy County and Teaching Hospital from 1977 to 2008. Her research activities exerted on field of internal medicine, endocrinology, immunology and allergology participating at international congresses gave guest lectures or was invited speaker. Now she is the Chief of EndoMed Debrecen Kft., Immunoendocrinology and Osteoporosis Centre in private outpatient clinic. She is an expert in laboratory methods and DXA measurement. She is interested in the immunoendocrine patho-mechanisms, particularly in Graves' orbitopathy; allergy in autoimmune thyroid diseases; thyroid hormonal metabolism; postmenopausal osteoporosis. She has published more than 69 papers in reputed journals, 16 chapters and 4 books.

molilendomed@gmail.com