Increased circulating soluble LR11 in normal pregnancy

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Background: LR11 (also called SorLA or SORL1), a member of the LDL receptor family, was originally discovered in 1996 from genes specifically expressed in the intimal smooth muscle cells of atherosclerotic plaques. The soluble form of LR11 (sLR11) as well as the membrane-bound form plays a key role in the phenotype conversion of medial smooth muscle cells into intimal smooth muscle cells through the activation of urokinase receptor/integrin-mediated intracellular pathways. The levels of sLR11 in serum or CSF are increased in patients with atherosclerotic diseases, Alzheimer's disease or malignant diseases including acute leukemias. The recently developed ELISA system using two specific antibodies against LR11 made it possible to measure sLR11 quantitatively and stably for many samples. Thus, a novel clinical examination is expected to detect the pathological immature cells important for the pathophysiology of the above diseases. The present study determines whether soluble LR11 (sLR11) is associated with pregnancy.

Methods: sLR11 was measured in 40 pregnant women during all three trimesters. Concentration of sLR11 was measured by sandwich enzyme-linked immunosorbent assay method.

Results: Circulating sLR11 was significantly increased in third trimester compared with first and second trimester (14.74±2.57 vs. 7.92±2.00, 10.25±3.48 ng/ml, p<0.01).

Conclusion: We studied the relationship between sLR11 in normal pregnant women. The increase in sLR11 is manifested during the third trimester.