

THE EFFECT OF CALCINEURIN INHIBITORS ON ADIPOCYTOKINES AND NECK CIRCUMFERENCE IN KIDNEY TRANSPLANT RECIPIENTS

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Objectives:

Fat tissue has biological activities related with energy metabolism, neuroendocrine and immune functions. There may have a relationship between obesity and fat tissue, which is a metabolic and endocrine organ. Prevention of the balance of the cytokines, secreted from fat tissue (adipocytokine) has an important role in homeostasis of glucose and lipid metabolism. Immunosuppressive drugs (especially corticosteroids and calcineurin inhibitors-CNI) that used after kidney transplantation (KT) leads to cardiovascular disease related morbidity and mortality by increasing development of obesity, HT, DM and dislipidemia. CNI's effects on adipocytokines are unknown. In this study, we compared the effects of CNIs (cyclosporine-CsA and tacrolimus-Tac) on adipocytokine levels in KT recipients.

Methods:

59 recipients that use CNI after KT were included in the study. Patients were divided into two groups as Tac (n=43) and CsA users (n=16). Demographic properties, blood pressures, antropometric measurements and glucose-lipid profiles and adipocytokine levels were measured.

Results:

Age, gender distribution, donor type, transplantation period, history and family history of smoking, HT, DM, CAD, obesity were similar. While number of diabetic patients were higher in CsA group (25% vs. 4.6%, $p<0.05$), dialysis duration prior to KT were longer in Tac group (51.1 ± 6.9 vs. 27.0 ± 5.9 month, $p<0.05$). No significant differences were found in BMI, blood pressures, waist-hip, wrist, mid arm and triceps circles, suprailiac and suprascapular fold thickness and body fat ratios. Neck circle was higher in CsA group (38.3 ± 0.5 vs. 40.5 ± 0.9 cm, $p<0.05$). Kidney functions, glucose, fibrinogen, homosistein, lipid and apolipoprotein profiles of the groups were comparable. No differences were observed in serum adipocytokine levels.

Table 1. Comparison of adipocytokine levels of recipients under CNIs

	Tac group (n:43)	CsA group (n:16)
Visfatin (ng/mL)	43.8 ± 3.1	38.2 ± 5.1
Leptin (ng/mL)	15.9 ± 2.9	9.5 ± 1.8
Resistin (ng/mL)	16.2 ± 1.0	28.0 ± 5.4
Adiponektin (mcg/mL)	8.5 ± 0.6	9.1 ± 1.0
Fibronectin (mcg/mL)	116.1 ± 3.9	105.9 ± 7.1
TNF- α (ng/mL)	0.1 ± 0.01	0.1 ± 0.04
IL-6 (ng/mL)	4.2 ± 1.4	3.0 ± 1.4
PAI-1 (ng/mL)	228.3 ± 22.3	156.7 ± 25.9
TGF- β (pg/mL)	8906.1 ± 1418.0	6739.7 ± 1162.0
IGF-1 (ng/mL)	239.2 ± 17.7	288.1 ± 25.8

Conclusions:

As a result, we did not observe any differences among the effect of CNIs on adipocytokine levels. Neck circle is another indicator of visceral obesity that has been more strongly associated with insulin resistance than waist circle. Further adequately designed prospective studies are needed to determine the relationship between CNIs and neck circle.

