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Successful Management of Presumptive Obesity-Related Secondary FSGS with Semaglutide and SGLT2 Inhibitor: A Case Report

Soyoung LEE
Department of Internal Medicine-Nephrology, Eulji University Hospital, Korea, Republic of

Case Study : Obesity-related glomerulopathy (ORG) typically presents as secondary focal segmental glomerulosclerosis (FSGS). In clinically clear cases with morbid obesity and non-nephrotic range proteinuria, a presumptive diagnosis is often made when kidney biopsy is technically challenging or carries high risks. We report a case where a combination of semaglutide and an SGLT2 inhibitor (SGLT2i) effectively managed a patient with presumptive secondary FSGS and chronic kidney disease. A 31-year-old male with a body mass index(BMI) of 36.12 kg/m² presented with persistent proteinuria and declining renal function. Hypertension and dyslipidemia were present, but there was no history of diabetes. Laboratory findings showed a urine protein-to-creatinine ratio (uPCR) of 4.014 g/g Cr and an estimated glomerular filtration rate (eGFR) of 22.93 ml/min/1.73m^2. Kidney biopsy was deferred due to the high risk of complications associated with truncal obesity. Based on the clinical presentation—massive obesity, absence of hypoalbuminemia, and slow progression of proteinuria—he was presumptively diagnosed with secondary FSGS. Despite the use of maximal tolerable dose of valsartan, proteinuria remained suboptimal. A dual regimen of semaglutide (titrated to 2.4 mg/week) and dapagliflozin (10 mg/day) was initiated as add-on therapy. After 6 months, the patient achieved a 34.11% weight loss (Table 1). Proteinuria significantly decreased to 0.770 g/g Cr, and eGFR increased. This case suggests that the synergistic combination of a GLP-1 receptor agonist and an SGLT2i can be a potent non-invasive therapeutic strategy for presumptive obesity-related secondary FSGS, effectively reducing proteinuria and improving renal function with significant weight reduction.

Table1.jpg

	Baseline	6 Months Post-Treatment	Change (%)
Weight (kg)	107	70.5	-34.11%
BMI (m^2)	36.12	23.88	-33.89%
uPCR (g/g Cr)	4.014	0.770	-80.82%
eGFR (ml/min/1.73m^2)	22.93	28.55	+24.51%