

## Oral Communication Abstract

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### The impact of obesity on glomerulonephritis: A multicenter cohort study of kidney biopsy over 40 years

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**Objectives:** Worldwide obesity has increased by almost three times between 1975 and 2020. Many studies reported that obesity related kidney disease was increasing. Most of them were focal segmental glomerulosclerosis (FSGS). However, little was known about the prevalence and outcome of other type of glomerulonephritis (GN) in obesity.

**Methods:** A total of 14,833 adult patients who underwent kidney biopsy and had body mass index (BMI) were identified in 18 tertiary hospitals during 1979-2018. Obesity was defined as BMI $\geq$ 30 kg/m<sup>2</sup>. We analyzed the prevalence of specific forms of glomerulonephritis in obese patients and effect of obesity on mortality and end stage kidney disease (ESKD).

**Results:** Obese patients in glomerular disease have increased about 12.8-fold over 40 years between 1979-1988 (0.6%) and 2009-2018 (7.7%). In GN patients with obesity, prevalence of IgA nephropathy (IgAN) is the most common (33.7%) followed by FSGS (13.3%), minimal change disease (MCD) (10.8%), membranous nephropathy (10.6%), diabetic nephropathy (DMN)(6.0%), lupus nephritis (LN) (2.7%), and hypertensive nephropathy (HT-N) (2.6%). The prevalence of FSGS (HR 1.60, 95%CI 1.24-2.06), DMN (HR 1.46, 95%CI 1.01-2.12) and HT-N (HR 2.14, 95% CI 1.29-3.54) were significant higher in obese patients compared than non-obese patients. Obesity had a 1.39-fold increased risk for ESKD progression in total patients (95%CI 1.11-1.73). Obesity had higher risks for progression of ESKD in MCD (HR 2.48, 95%CI 1.02-6.04) and LN (HR, 3.28, 95% CI 1.30-8.31). In patients with FSGS, DMN, and HT-N, obesity wasn't associated with ESKD. Obesity wasn't associated with mortality in GN patients although obesity was related to mortality only in MCD patients (HR 2.48, 95% CI 1.02-6.04)

**Conclusions:** Obesity are increasing in GN patients. The prevalence of FSGS, DMN, and HT-N are significantly higher in obese patients although IgAN is the most common. Obesity had significant risks for progression of ESKD in patients with GN, especially MCD and LN patients