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Permalink

https://escholarship.org/uc/item/4sb9h3cp

Journal

Nephrology Dialysis Transplantation, 36(Supplement_1)

ISSN

0931-0509

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Publication Date

2021-05-29

DOI

10.1093/ndt/gfab087.0033

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Peer reviewed

MO513 **CLINICAL AND ECONOMIC BURDEN OF FOCAL SEGMENTAL GLOMERULOSCLEROSIS (FSGS) IN THE UNITED STATES: A RETROSPECTIVE, OBSERVATIONAL COHORT STUDY**

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BACKGROUND AND AIMS: The burden of disease associated with FSGS has not been well characterized, especially with regard to health care resource utilization (HCRU) and related costs. The aim of this study was to evaluate all-cause HCRU and estimate associated costs in patients with FSGS compared with a matched non-FSGS cohort; a secondary aim was to evaluate the impact of nephrotic range proteinuria on these outcomes.

METHOD: Data were from the Optum Clinformatics® Data Mart Database. Patients with ≥ 1 claim (1st claim = index event) for FSGS between April 2016 and December 2018 were identified based on ICD-10-CM codes and matched 1:2 (FSGS:controls) on index date, age, sex, and race to non-FSGS controls; continuous enrollment 6 months pre- and 12 months post-index was required. FSGS nephrotic range (either UPCR >3000 mg/g or ACR >2000 mg/g) and non-nephrotic subpopulations were also identified. Quan-Charlson Comorbidity Index (CCI) and individual comorbidities at baseline, and 12-month post-index all-cause HCRU and associated costs (per patient per year [PPPY]) as well as medication prescriptions related to FSGS treatment were compared between the matched cohorts and between the FSGS subpopulations; t-tests were used for continuous variables and chi-square tests for categorical variables.

RESULTS: 844 patients with FSGS were matched with 1688 non-FSGS controls; 57.4% male, 56.9% white, mean (SD) age 54.7 (18.4) years. Mean (SD) CCI was higher in the FSGS cohort relative to matched controls (2.72 [2.12] vs 0.55 [1.29]; P < .0001), with prevalence of most individual comorbidities higher in the FSGS cohort. Only 308 FSGS patients (36.5%) had UPCR or ACR tests with available results during the review period; 112 (36.4%) were in the nephrotic range and 196 were non- nephrotic (63.6%). The FSGS cohort was characterized by higher rates of all-cause HCRU across resource categories (all P < .0001) (Table 1); outpatient visits was the most frequently used category (99.1% vs 69.0%), followed by prescription medications. Among patients who used these resources, units of use were significantly higher in FSGS vs matched controls except for length of stay (Table 1). Readmission rates following 1st post-index hospitalization were higher in the FSGS cohort vs matched controls at 30 days (16.1% vs 6.0%; P < .05) and 365 days (39.1% vs 22.9%; P < .05). Glucocorticoids were the most frequently prescribed FSGS-related medication in both cohorts, with a higher rate in FSGS vs matched controls (50.6% vs 23.3%; P < .0001); other FSGS-related medications were infrequently prescribed (< 14%). Inpatient, outpatient, and prescription costs were higher in the FSGS cohort vs matched controls (all P < .0001) resulting in mean total annual medical costs of $59,753 vs $8,431 PPPY (P < .0001) that were driven by outpatient costs (Fig. 1A). Nephrotic range proteinuria was associated with higher all-cause inpatient, outpatient, and prescription costs vs non-nephrotic patients (all P < .0001; Fig. 1B), resulting in higher total costs ($70,481 vs $36,099 PPPY; P < .0001). A higher proportion of nephrotic range patients were prescribed FSGS-modifying medications (73.2% vs 54.1%; P = 0.001), with

glucocorticoids the most frequent medication. However, 26.8% of nephrotic range patients were not prescribed any FSGS-related medications.

Table 1. 12-Month post-index all-cause health care resource utilization in FSGS and matched non-FSGS cohorts.

Resource	Percent of patients		Units of use among patients who used resource category, mean (SD)	
	FSGS (n = 844)	Matched controls (n = 1688)	FSGS	Matched controls
Outpatient visits	99.1*	65.0	10.6 (7.9)*	3.6 (4.6)
Home health care visits	7.2*	2.0	0.6 (3.4)†	0.2 (2.6)
Skilled nursing facility[a]	4.7*	0.8	17.3 (11.9)	12.0 (7.7)
Emergency room	43.0*	16.6	1.2 (2.6)*	0.3 (0.8)
Hospitalizations[a]	28.8*	4.6	6.0 (5.8)	5.3 (2.9)
Surgical procedures	65.2*	27.4	2.8 (3.8)*	0.7 (1.9)
Prescriptions	94.2*	71.9	42.5 (36.0)*	17.0 (24.3)

*P < .0001 and †P < .05 vs matched controls
[a]Units of use expressed as length of stay in days

Figure 1. Annual all-cause medical costs per patient. A) FSGS and matched non-FSGS cohorts. B) Nephrotic range and non-nephrotic FSGS patients.
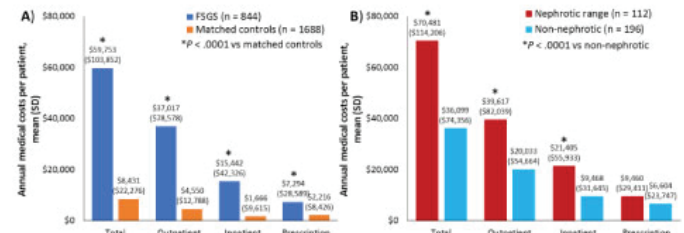
MO513 Figure 1: Annual all-cause medical costs per patient. A) FSGS and matched non-FSGS cohorts. B) Nephrotic range and non-nephrotic FSGS patients.

CONCLUSION: FSGS is associated with significant clinical and economic burdens with total annual medical costs > 7-fold higher than matched controls that were driven by outpatient costs. The presence of nephrotic range proteinuria substantially and significantly increased the economic burden. New treatment modalities leading to lower rates of proteinuria may help improve patient outcomes while reducing HCRU and their associated costs.