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Original Article

# Five-Year study on renal outcomes in biopsy-proven focal segmental glomerulosclerosis patients in Shiraz, Iran

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## *Abstract*

***Background:*** Focal segmental glomerulosclerosis (FSGS) is a prevalent glomerular disease that often leads to nephrotic syndrome. It is characterized by consolidating a portion of the glomerular capillary tuft connected to Bowman's capsule. This retrospective cohort study aimed to determine the demographic characteristics, risk factors, and prognostic indicators associated with FSGS in Shiraz, Iran.

***Methods:*** The study included 53 primary FSGS patients aged over 18 years who were referred to clinics affiliated with Shiraz University of Medical Sciences. Data were collected through a comprehensive data-gathering sheet encompassing demographic information, medical history, laboratory test results, and histopathological findings. Statistical analysis was performed using SPSS 18, considering a significance level of $p<0.05$.

***Results:*** A five-year follow-up was conducted on the 53 patients, with the mean age of 41.0±13.3 years. The most common FSGS variants observed were "not otherwise specified" (NOS, 13.2%) and tip variant (7.5%). Older patients exhibited higher disease activity, whereas remission rates were higher among younger individuals (P=0.012). Patients achieving remission had lower creatinine and Pro/Cr ratios and higher glomerular filtration rates ($p<0.05$). Treatment involving a combination of corticosteroids and mycophenolate mofetil showed a significant correlation with remission (P=0.036).

***Conclusion:*** Older patients with higher creatinine levels, higher Pro/Cr ratios, and lower glomerular filtration rates at disease onset may require more aggressive treatment. Combination therapy with mycophenolate mofetil and corticosteroids yields better outcomes, leading to increased remission rates. These findings provide valuable insights for managing FSGS patients.

***Keywords:*** Focal segmental glomerulosclerosis, nephrotic syndrome, glomerular filtration rate, chronic kidney disease.

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Focal segmental glomerulosclerosis (FSGS) is a histological pattern of injury observed on light microscopy (LM) rather than a standalone disease. It is characterized by consolidating a segment of the glomerular capillary tuft connected to Bowman's capsule and accumulating an extracellular matrix involving a subset of glomeruli in the late stages (1, 2).

FSGS is recognized as one of the primary glomerular causes of end-stage kidney disease (ESKD) in most parts of the world. Recent studies have shown that FSGS has become the second most prevalent primary glomerular disorder. Data from various countries consistently reveal FSGS as the most commonly detected glomerulopathy through kidney biopsy (1-6). This increasing trend in FSGS frequency may be attributed to aging and obesity (7).

 

conducting further studies on this subject with a multi-center approach and larger sample sizes to overcome these limitations. It is essential to acknowledge that various confounding factors, including concomitant diseases, may have influenced the treatment response of our patients. Furthermore, the lack of genetic workup prevented the confirmation of familial cases, potentially affecting the response to treatment and achievement of remission.

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**Ethical considerations:** The authors have entirely observed ethical issues (including plagiarism, data fabrication, and double publication).

**Conflict of Interests:** The authors report no conflicts of interest. The authors are responsible for the content and writing of this paper.

**Authors' contribution:** MP contributed to the conception of the work, conducting the study, revising the draft, approving the final version of the manuscript, and agreeing to all aspects of the work. LM contributed to the conception of the work, drafting and revising the draft, approval of the final version of the manuscript, and agreeing on all aspects of the work. TT and AN contributed to the conception of the work, conducting the study, revising the draft, approving the final version of the manuscript, and agreeing on all aspects of the work. MB and SK contributed to the conception of the work, revising the draft, approving the final version of the manuscript, and agreeing on all aspects of the work.

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