Podocytopathies associated with secondary polycythaemia: A case series review

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Abstract

An unusual manifestation of nephrotic syndrome is its rare connection with secondary polycythaemia. Secondary polycythaemia exhibits a limited correlation with parenchymal renal diseases and is primarily associated with conditions involving increased renal mass, such as renal tumours, polycystic kidney disease, hydronephrosis, or disorders with renal hypoxia like renal artery stenosis and following renal transplantation. However, a few case reports have been published regarding an association of polycythaemia with nephrotic syndrome (NS), but no conclusive pathogenesis has been elucidated.

We present three patients with focal segmental glomerulosclerosis (FSGS) and persistent polycythaemia requiring routine venesection. Their polycythaemia was characterized by normal serum erythropoietin levels, which excluded polycythaemia vera and primary familial and congenital polycythaemia. These individuals also had a negative workup for other secondary causes. After reviewing the literature, we postulate that this may be associated with increased sensitivity to erythropoietin. Additionally, we review the relationship between polycythaemia vera-associated haemodynamic alterations and their potential role in the development of FSGS.

These cases underscore the importance of recognizing less common causes of secondary polycythaemia in patients with NS and the necessity for thorough investigation to ensure timely and effective treatment. Future research should focus on further elucidating the pathophysiological mechanisms linking NS and polycythaemia and developing standardized protocols for diagnosis and management.