

Nonalcoholic fatty liver disease (NAFLD), which is strongly and bidirectionally associated with metabolic syndrome and its individual features, encompasses a spectrum of liver diseases ranging from nonalcoholic fatty liver (NAFL) to nonalcoholic steatohepatitis (NASH) and carries the risk of developing cirrhosis and hepatocellular carcinoma in a proportion of cases [1]. The latter entity exhibits glomerular hypertrophy, focal dilatation of the afferent arteriole and glomerular perihilar capillaries, and perihilar segmental sclerosis; mildly increased mesangial matrix and the thickening of glomerular basement membranes (i.e., diabetes-like features), interstitial fibrosis, foot process effacement, and hypertrophy of podocyte cell bodies may also occur [20]. The pathogenesis of NAFLD involves a profound perturbation of metabolic homeostasis; a reprogramming of the interplay between hepatocytes, sinusoidal endothelial cells, and hepatic stellate cells; a rearrangement of the liver immune landscape; and a remodeling of the hepatic microvasculature and stromal microenvironment [7]. Interestingly, the metabolic pathways, cellular phenomena, and molecular mediators involved in NAFLD and CKD are similar to each other and include insulin resistance, ectopic fat deposition, and the activation of the insulin/PI3K/Akt/mTOR and transforming growth factor- β pathways [20,23]. To date, however, there are no systematic studies evaluating kidney histology among patients with NAFLD and, usually, in such cases a reference is rather made to the functional classification of CKD stages based on the estimated glomerular filtration rate (eGFR) and proteinuria, both in clinical practice and in the research arena [11]. New insights into liver cell-cell interactions will define the molecular pathways that culminate in hepatic fibrogenesis and identify novel targets to interrupt disease progression to adverse clinical outcomes [10]. These severe liver-related outcomes usually result from the progression of NAFLD diagnosed as NASH, although a subgroup of NAFLD patients diagnosed as NAFL may also develop liver fibrosis, indicating a propensity for progression [1].