Molecular Targets for Therapeutic Intervention in Patients with Nonalcoholic Fatty Liver Disease (NAFLD)

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Abstract

Pathogenesis of nonalcoholic fatty liver disease (NAFLD) is multi factorial; hence there is no single treatment for this disease entity. Multiple molecules involved in the pathogenesis thus become important targets for therapeutic intervention in NAFLD. Insulin resistance plays most important role in the pathogenesis of NAFLD. Interplay of adipokines like tumor necrosis factor alpha (TNF-á), adiponectin and leptin is involved causing insulin resistance. Life style interventions, drugs and bariatric surgery which are used for weight reduction in NAFLD have been shown to be beneficial by improving the insulin sensitivity by changing the adipokine profile. Similarly various anti oxidant drugs like vitamin C, vitamin E, betaine, probucol and metadoxine used in NAFLD have been shown to be beneficial by acting at molecular level. Unchecked, some of the patients with NAFLD can progress on to develop hepatic fibrosis and cirrhosis. Renin angiotensin system (RAS) and leptin have been thought to be involved in liver fibrosis. Treatment by angiotensin II receptor antagonist (losartan) has been shown to be effective in reducing hepatic fibrosis in patients with NAFLD. In future, anti apoptotic drugs and manipulation at genetic level may be beneficial in patients with NAFLD because of role of apoptosis and various genes in the pathogenesis of NAFLD.