

5th Annual Congress on Gastroenterology & Hepatology | Webinar

Clinical Gastroenterology Journal Volume: 06

August 20-21, 2021 | Webinar

Insulin resistance or genetic polymorphism, the hidden secret of nonalcoholic fatty liver disease

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Background:

Insulin resistance is considered as the major contributor for the development of NAFLD, but it is evident that genetic polymorphism also contribute for the development of necroinflammation and subsequent progression of disease. This study was aimed to compare the effect of insulin resistance and genetic polymorphism on the development of nonalcoholic fatty liver disease.

Materials and methods:

Forty-seven subjects with NAFLD and thirty four controls were selected for the study after ultrasonography of eighty one consecutive apparently healthy subjects. Anthropometric profile [body mass index (BMI), waist circumference (WC) etc.], lipid profile, hepatic aminotransferases, fasting blood glucose (FBG), were recorded and value of homeostasis model assessment of insulin resistance (HOMA-IR) was analysed. PNPLA3 genotyping was also done. To see the association between insulin resistance, and genetic polymorphism with NAFLD was evaluated by multivariate logistic regression analysis after adjusting for potential confounding variables. Risk analysis was performed by calculating the odds ratio (OR) and the 95% confidence interval (CI)

Results: It was found that 62.5% individual having fatty liver had only insulin resistance without genetic polymorphism and 51.61% individual having fatty liver had genetic polymorphism without insulin resistance. Regarding PNPLA3 polymorphism 80% of the fatty liver group and 55% of the non-fatty liver group showed polymorphism. A subject with PNPLA3 polymorphism had 3.33 (95% CI 1.235% to 8.998%) times increase in odds having NAFLD. A subject with HOMA-IR >1.6 had 4.375 (95% CI 1.525% to 12.55%) times increase in odds having NAFLD.

Conclusion: Insulin resistance seems to be more responsible for the development of nonalcoholic fatty liver disease than genetic polymorphism. Individuals having both factors are mostly vulnerable.

Biography

Dr. Md. Saiful Islam has completed his MBBS from Sir Salimullah Medical College and then joined at Bangabandhu sheikh Mujib Medical University as a Research Assisntant. He completed his postgraduation on Hepatology last year. Already he has published 03 article in different reputed journal and also present his papers in INASL conference. He has a vast experience in gastroenterology and Hepatology and also great interest in the field of research.

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