

CIDEB Gene Mutation and Non Alcoholic Fatty Liver Disease: The Potential Role of Oleic Acid

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Background

Nonalcoholic liver disease (NAFLD) can develop into nonalcoholic steatohepatitis (NASH), an aggressive form of fatty liver disease, which is marked by liver inflammation and may progress to advanced scarring (cirrhosis) and liver failure. With the growing epidemic of obesity and metabolic syndrome, nonalcoholic fatty liver disease (NAFLD) and in some countries is the leading causes of cirrhosis [1].

As recently cited in New England Journal of Medicine, germline mutations in CIDEB have been shown to protect against liver disease providing potential therapeutics. Verweij et al found that loss of function variants and missense CIDEB encodes a structural protein found in hepatic lipid products that have a protective effect and decreased liver transaminase levels with a with 33% lower odds of liver disease of any cause (odds ratio per allele, 0.67; 95% CI, 0.57 to 0.79; $P=9.9 \times 10^{-7}$). Rare coding variants in CIDEB were associated with a decreased risk of liver disease across different underlying causes and different degrees of severity, including cirrhosis of any cause (odds ratio per allele, 0.50; 95% CI, 0.36 to 0.70). In human hepatoma cell lines challenged with oleate, CIDEB small interfering RNA knockdown prevented the buildup of large lipid droplets [2].

Currently, guidelines recommend reducing weight, prohibiting drinking, managing other risk factors for progressing to cirrhosis, and antifibrosis are fundamental treatments. The prognosis of

NAFLD cirrhosis is poor. More cost effective therapeutics are needed and more thought toward oleic acid should be considered. Lab grade oleic acid can be found naturally in olive oils (80%), almond oil (80 percent) and other foods in the diet however these can be highly caloric and lead to more obesity which is risk factor proven to increase the chance and worsening of NAFLD. However lab grade oleic acid can be obtained at twenty dollars out of pocket, with a low risk factor profile, low caloric profile, and is proven to decrease inflammatory markers, aid in weight loss, and now most importantly has been shown to help CIDEB mutations prevent build-up of large lipid droplets as above, amongst other effects.

In summary, with the new evidence as reported above in NEJM that oleic acid on a molecular level has positive effects on the CIDEB mutation that decreases liver disease and its ability to help decrease insulin resistance and obesity Oleic Acid should strongly be considered a therapeutic for NAFLD. Studies will be needed looking at serial fibrosis scores for more evidence with little downside considering the lower cost and side effect profile.

Bibliography

1. Li. (2018, July 2). Can J Gastroenterology Hepatology. Retrieved from ncbi.nlm.nih.gov: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6051295/#B14>
2. <https://www.nejm.org/doi/full/10.1056/NEJMoa2117872>

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