

Short Communication

New Predictor of Non-Alcoholic Steatohepatitis (NASH) and Advanced Fibrosis

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Abstract

As liver biopsy is invasive and has poor patient acceptability. There is an unmet need for non-invasive biomarkers in NASH patients for prognostication, and identifying patients suitable for clinical trials for treatment and monitoring. The IGF-1 protein is associated with adiposity, insulin resistance and liver fibrogenesis. We assessed the performance of IGF-1 generation test in NAFLD patients after single SC Growth Hormone (GH) administration.

Keywords: NASH; NAFLD; Fatty liver; Fibrosis; IGF-1; Cirrhosis; Non invasive test

Methods

50 patients (43 ± 10 yrs., 36/24 M/F): Chronic viral hepatitis (HBV/HCV, 15), (NASH, 15), and NAFLD, 20) and Healthy controls, 10). NAFLD and NASH were diagnosed by liver biopsy according to NASH-CRN criteria. Serum levels of IGF-1 were measured before (Basal) and 24 hours (peak) after SC hrGH (0.06 mg/kg/body weight) injection by RIA (ng/ml). Metabolic markers of insulin resistance: TG/HDL ratio, HOMA, and LFTS were measured by standard tests.

Results

IGF-1 generation increased in patients with NAFLD as compared to chronic viral hepatitis and to healthy controls respectively (P<0.01). Peak IGF-1 serum levels and (percent (%) increase) were significantly lower in NASH patients and in chronic viral hepatitis as compared to Simple NAFLD and to healthy controls respectively (Table 1), P<0.001, [1,2]. A strong correlation was shown between Peak IGF-1 levels and insulin resistance Index (HOMA) (r=0.8, Figure 1) and advanced fibrosis >F3 (r=0.6) in patients with NAFLD). No correlation was found between peak IGF-1 levels and the extent of fatty infiltration. Combination of PeakIGF-1 generation and HOMA increase the diagnostic accuracy (AUC to 0.89) for identification of patients with advanced >F3 fibrosis.

Conclusion

IGF-1 generation test outperform commonly used non-invasive tests and may prove a useful tool in routine clinical practice. It's simple safe and effective.

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Conflict of interest statement

Conflict of interest .Authors' contributions: I wrote end edit the manuscript.

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Table 1: Median Baseline, median Peak stimulated IGF-1 levels, and percent increase % of all patients groups (P<0.001).

	Median Baseline (ng/ml)	Median Peak (ng/ml)	% Increase (ng/ml)
Healthy Controls (N=10)	166	407	(145%)
Fatty liver (N=20)	142	415	(192%)
NASH (N=15)	124	336	(171%)
Chronic Hepatitis (N=15)	120	275	(129%)

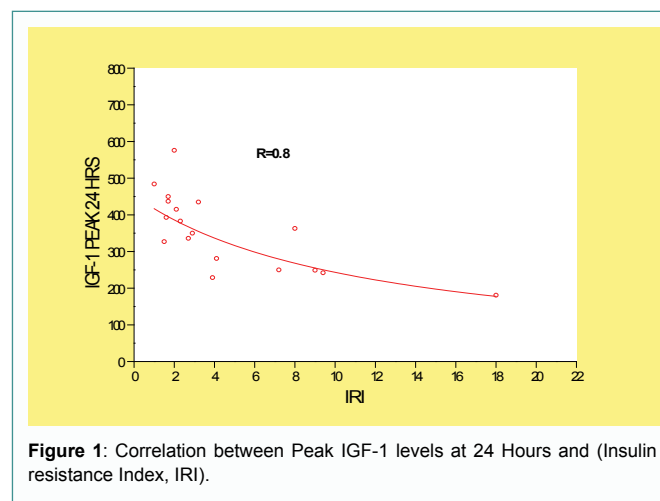


Figure 1: Correlation between Peak IGF-1 levels at 24 Hours and (Insulin resistance Index, IRI).