

INCIDENCE OF AT1R ANTIBODY IN LIVER TRANSPLANT CANDIDATES WITH FIBROSIS

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Aim: Liver fibrosis occurs as a result of deposition of collagen in response to an injury. Activation of the renin-angiotensin-system increases angiotensin II levels in chronic cirrhosis. Angiotensin II promotes deposition of fibrous tissue and functions through the angiotensin II type 1 receptor (AT1R) which is expressed on hepatic stellate cells (HSC). AT1R antibodies have a similar agonistic effect when bound to the receptor and may be involved in the development of liver fibrosis. The presence of AT1R antibody in liver disease has not been investigated to date. The aim of this study is to determine the prevalence of AT1R antibody in liver transplant patients with fibrosis

Method: Stored pre-transplant samples from sixty three (63) liver transplant candidates and 40 normal healthy controls were tested for presence of AT1R under approved IRB using a sandwich ELISA (One Lambda as part of Thermofisher Scientific). Serum was incubated onto 96 well plates precoated with full length AT1R. Binding of antibody to AT1R was detected by horseradish peroxidase (HRP)-labeled goat anti-human IgG. Standard samples provided in the ELISA kit were tested in parallel in each run to generate a standard curve correlating optical density to AT1R antibody level. Each sample was tested in duplicate and the results expressed as a mean value.

Results: The average optical density (OD) in the liver group was 0.659 compared to an average OD of 0.354 in the control group (unpaired Student's t test; p value < 0.05). When subjects were categorized as positive (> 17 units/ml) or negative (< 10 units/ml), for AT1R antibody, there was a significant difference in the distribution of these groups in the liver fibrosis patients compared to the control group (p=0.0009).

Conclusion: Preliminary data show that there is a high incidence of AT1R antibody in liver transplant candidates with fibrosis or cirrhosis. This may suggest a link between AT1R antibody and liver fibrosis. The clinical relevance of this antibody will need to be further assessed. Liver fibrosis is usually detected by biopsy; however, tests of a fibrosis-associated serum marker would be less invasive and have a lower risk of complications. Furthermore, these patients may benefit from treatment with an angiotensin receptor blocker.