



Filamentous Actin In The Role of Diagnosing Seronegative Type 1 Autoimmune Hepatitis

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Introduction

- Autoimmune Hepatitis (AIH) is an inflammatory liver disease which, without timely diagnosis and treatment, can progress to cirrhosis.
- There are no distinguishing clinical features to discriminate this from other liver pathology
- Diagnosis is made by the presence of circulating autoantibodies, elevated serum globulin levels, and histologic examination.



Case Presentation

- 65-year-old female with no significant PMH who presented with non-specific abdominal complaints subsequently found to have unexplained liver cirrhosis



Case Description

- Pertinent negatives: No evidence of past or present alcohol abuse. Viral hepatitis panel nonreactive. HFE gene were negative. Autoantibodies including antinuclear, liver/kidney microsomal, soluble liver antigen, and anti-microsomal were nonreactive.
- Pertinent positives: IgG was greater than 3x the upper limit of normal. *ELISA for filamentous actin (FA) was tested and resulted positive; however, reflex to smooth muscle antibody (SMA) was negative.*
- Without adequate evidence of autoantibodies, treatment was withheld until liver histopathology confirmed Type 1 AIH (AIH-1).



Discussion

In AIH, SMA-T binds to FA.

- To test for AIH, ELISA for FA is tested first and if positive reflexes to SMA-T immunofluorescence

There are a few issues with these tests:

- Immunofluorescence can be difficult to visualize when titers are low.
- ELISA for FA not been fully standardized leading to varying cutoff values depending on assay/laboratory.
- There is poor correlation between FA ELISA and SMA-T immunofluorescence

For our patient, FA levels were significantly elevated yet reflex to smooth muscle antibody was negative.



Conclusion

- Development of reliable testing for FA with improved correlation to SMA-T has the potential to provide earlier diagnosis and treatment of AIH-1 in patients where SMA titers are negative.

