

Pathology 2015: Histo morphometric findings may help predict response to antiviral therapy at an early fibrosis grade in patients with chronic HCV infection - Maison Abu Raya - Rappaport Faculty of Medicine the Technion, Israel.

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Background: HCV is a leading cause of cirrhosis and hepatocellular carcinoma and is the primary indication for liver transplantation in the United States. In the United States, genotype 1 is most prevalent, especially in the HIV-HCV infected population and the African American population. Several viral and host factors linked to the viral response have been reported. Histomorphometry is a quantitative method for studying changes in shape, size and orientation of cells in tissue. Morphometry has been used in various fields to predict the phenotype of the disease and the prognosis of patients.

Objective: To usage high-tech histomorphometry to enumerate the histological changes that occur in liver biopsies obtained from patients with chronic HCV, in order to predict the response to medical treatment in these patients.

Methods: Patients with chronic HCV genotype 1, with Metavir F1 and F2 scores monitored in our hepatic unit were selected and grouped according to the response to treatment {SVR (sustained viral response) and not SVR} in 30 patients by group. Histomorphometric analysis was not identified by patient identification or previous histological information. Histological slides from pretreated liver biopsies were scanned using the virtual slide microscopy system (Olympus). 3-4 representative images were captured per slide. Each liver biopsy contained on average 6 to 8 representative portal spaces. The ImagePro plus 7.0 program (Media cybernetics USA) was used to quantify the amount of collagen fibers, the number of inflammatory cells, and the changes in texture of the liver parenchyma, to simplify. Mat labs software (Math works, USA) was used to calculate the fractal and lacunar dimensions of the hepatic parenchyma in order to capture any structural change in the general architecture of the liver.

Hepatitis means inflammation of the liver. Once the liver is inflamed or injured, its role can be affected.

Heavy consumption of alcohol, toxins, certain medications and certain medical conditions can all cause hepatitis. However, hepatitis is often caused by a virus. In the United States, the maximum mutual hepatitis viruses are hepatitis A virus, hepatitis B virus and hepatitis C virus. Hepatitis A, hepatitis B and I C are infections of the liver caused by three different viruses. Although everyone can cause similar symptoms, they spread in different ways and can affect the liver differently. Hepatitis A is usually a short-term infection. Hepatitis B and hepatitis C can also start as short-term infections, but in some people the virus stays in the body and causes a chronic (lifelong) infection. There are vaccines to prevent hepatitis A and hepatitis B; however, there is no hepatitis C vaccine.

Hepatitis C is a contagion of the liver triggered by the hepatitis C virus. Hepatitis C can range from mild illness lasting a few weeks to severe and permanent illness. Hepatitis C is often described as "acute", which means new infection or "chronic", which means infection for life.

Acute hepatitis C occurs in the first 6 months after someone has been exposed to the hepatitis C virus. Hepatitis C can stand a short-term infection, but for furthestmost people, acute infection chiefs to chronic infection. Chronic hepatitis C can be an enduring contagion with the hepatitis C virus if left untreated. If left untreated, chronic hepatitis C can cause serious health problems, including liver damage, cirrhosis (scarring of the liver), liver cancer, and even death

Transmission / Exposure

Hepatitis C usually spreads when the blood of a person infected with the hepatitis C virus enters the body of an uninfected person. Today, most people get the hepatitis C virus by sharing needles or other equipment to prepare or inject drugs. Prior to 1992, hepatitis C was also commonly transmitted through blood transfusions

and organ transplants. Afterwards, widespread transmission of the blood source in the United States virtually eradicated this source of infection.

The hepatitis C virus is not feasted by allotment of utensils, breastfeeding, hugging, kissing, and holding hands, coughing or sneezing. It also ensures not blowout over food or water. Some major research studies have not shown that hepatitis C is spread in licensed commercial tattoo centers. However, diffusion of hepatitis C (and other infectious diseases) is probable when poor contamination control practices are used throughout tattooing or piercing. Unregulated tattooing and piercing are known to occur in prisons and other informal settings and can put a person at risk of infection.

About 6 in 100 infants born to mothers with hepatitis C are infected with the hepatitis C virus. However, the risk increases if the mother has both HIV and hepatitis C. The external icon of the American Red Cross does not accept blood donations from anyone with current signs or symptoms of hepatitis, or if you have previously tested positive for hepatitis C. According to online information from the United States Department of Health and Human Services on organ donation and transplantation, external icon, very few conditions would prevent someone from being an organ, eye or tissue donor. Even with acute or chronic hepatitis C, you may be able to donate your organs or tissues. The transplant team will determine which organs or tissues can be used based on clinical evaluation, medical history and other factors.

Results: The histomorphometry variables, counting the density of collagen fibers, the segment of inflammatory cells per portal space area and the texture parameters were found to be statistically significant and could be combined together in a mathematical formula, in order to predict response to treatment in HCV patients, with 93% sensitivity and 100% specificity.

Conclusions: Our study indicates that computerized histomorphometry can be used to quantify the level of fibrosis, the amount of inflammation and changes in parenchymal texture and complexity in chronic HCV patients. The method of histomorphometry is promising and can contribute to the development of a new

automatic system guided by experts predicting the response to treatment in chronic HCV patients, already at an early stage when the histological changes are minimal, which can affect the choice of an appropriate treatment for each patient. Morphometry could be used in the future to study liver diseases due to different etiologies.

Biography: The Abu Raya House is a motivated young doctor who has completed his MD (cum laude) and graduated from the Technion Institute of Technology, Rappaport Faculty of Medicine, Haifa, Israel, one of the prestigious medical schools of Israel. Currently, she is the chief resident of internal medicine at the Carmel Medical Center in Haifa.