



# **Transient elastography in diagnostic imaging of liver fibrosis in chronic viral hepatitis**

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Radiodiagnosis

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**Sara Nabil Aboel Anin Negm**

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## LIST OF ABBREVIATIONS

<b>A mode</b>	Amplitude mode
<b>AFP</b>	Alfa feto protein
<b>ALT</b>	Alanine aminotransferase
<b>Ao</b>	Abdominal aorta
<b>APA</b>	Arterio portal anastomosis
<b>APRI</b>	AST platelet ratio index
<b>AST</b>	Aspartate aminotransferase
<b>AUROC</b>	Area under the receiver operator characteristic curve
<b>BMI</b>	Body mass index
<b>c</b>	Caudate lobe
<b>CBD</b>	Common bile duct
<b>CD</b>	Cluster of differentiation
<b>CHD</b>	Common hepatic duct
<b>cmm</b>	Cubic centimeter
<b>CV</b>	Central venules
<b>ECM</b>	Extracellular matrix
<b>EDHS</b>	Egyptian Demographic Health Survey
<b>ELF</b>	Enhanced liver fibrosis
<b>FI</b>	Fibrosis index
<b>FT</b>	Fibro test

<b>g/dl</b>	Gram per dici litter
<b>GB</b>	Gall bladder
<b>GGT</b>	Gamma glutamyl transferase
<b>HA</b>	Hepatic artery
<b>HAI</b>	Histological activity index
<b>HARI</b>	Hepatic artery resistive index
<b>HBsAG</b>	Hepatitis B surface antigen
<b>HBV</b>	Hepatitis B virus
<b>HCC</b>	Hepatocellular carcinoma
<b>HCV</b>	Hepatitis C virus
<b>HIV</b>	Human immunodeficiency virus
<b>HMS</b>	Hepatic microcirculatory subunits
<b>HSCs</b>	Hepatic stellate cells
<b>HV</b>	Hepatic vein
<b>IFN</b>	Interferon
<b>IQR</b>	Inter quartile range
<b>IVC</b>	Inferior vena cava
<b>KPs</b>	Kilo pascals
<b>LSE</b>	Liver stiffness evaluation
<b>LSM</b>	Liver stiffness measurement
<b>m/s</b>	Meter per second
<b>MCL</b>	Mid clavicular line

<b>MHz</b>	Mega hertz
<b>mIU/L</b>	Mili litter unit per litter
<b>MMPs</b>	Matrix metalloproteinase
<b>MRE</b>	Magnetic resonance elastography
<b>NAFLD</b>	Non alcoholic fatty liver disease
<b>NASH</b>	Nan alcoholic staeato hepatitis
<b>ng/dl</b>	Nano gram per dici litter
<b>NPV</b>	Negative predictive value
<b>PBC</b>	Primary biliary cirrhosis
<b>PDGF</b>	Platelet derived growth factor
<b>PPV</b>	Positive predictive value
<b>PSC</b>	Primary sclerosing cholangitis
<b>PV</b>	Portal vein
<b>PVPV</b>	Portal vein peak velocity
<b>RAM</b>	Random accessory memory
<b>RBP</b>	Retinol binding protin
<b>RF</b>	Radiofrequency
<b>RNA</b>	Ribonucleic acid
<b>SEC</b>	Sinusoidal endothelial cells
<b>SMA</b>	Superior mesenteric artery
<b>SMV</b>	Superior mesenteric vein
<b>T-cell</b>	Thymus derived cell

<b>TE</b>	Transient elastography
<b>TIMPs</b>	Tissue inhibitors of metalloproteinase
<b>TM mode</b>	Time motion mode
<b>TSH</b>	Thyroid stimulating hormone
<b>U/L</b>	Unit per litter
<b>US</b>	Ultrasonography

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# **Introduction & Aim of the work**

## *Introduction & Aim of the work*

Chronic hepatitis is the most common cause of cirrhosis and hepatocellular carcinoma (HCC) and the leading indication for liver transplantation worldwide. Approximately 20% of chronically infected patients develop liver fibrosis and cirrhosis with subsequent progression to end stage liver disease or HCC (*Fontaine et al., 2007*).

Chronic hepatitis B and C (HBV&HCV) infections are characterized by high rates of chronicity as 70-85% of acute HCV cases evolve into chronic hepatitis (*Persico et al., 2000*).

Analysis of the surveillance data showed increasing trend of HBV and HCV infections (*Ninashvili et al., 2012*).

In 2002 prevalence rate of chronic HBV infection was 4.5 million, it began increasing in 2005 up to 10.2 million and reached 34.9 million in 2012 (7.5 times increase of the level of 2002). The same applies to chronic HCV infection, In 2002-2004 incidence rate of the infection ranged between 6.6-8.4 per 100 000 population. It began increasing in 2005 and reached 45.5 in 2012 (5 fold increase) (*Ninashvili et al., 2012*).

The published Egyptian Demographic Health Survey (EDHS) in 2009 was a national probability sample of the resident Egyptian population. This report estimated an overall anti-HCV antibody prevalence of 14.7%. The number of Egyptians estimated to be chronically infected was 9.8% (*Ismail et al., 2011*).

**HBV** can spread through sex (it is 100 times easier to spread through sex than HIV), blood transfusions (mostly before 1975), and needle sharing by intravenous drug users. The virus can pass from mother to child at birth or soon afterward; the virus can also pass between adults and children to infect whole families. Other people at risk include those with kidney failure who are undergoing hemodialysis a procedure that helps filtering the blood or those receiving a transplanted organ infected with HBV virus. Most adults