

## **Novel ARFI-based parameter in assessment of liver elasticity**

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### **Abstract**

**Background:** The diagnosis of chronic liver disease (CLD) leading to fibrosis, cirrhosis and portal hypertension had witnessed dramatic changes after the introduction of non-invasive easily accessible clinical tools over the past few years. Imaging techniques that are based on evaluation of the liver stiffness was particularly useful in this respect. Acoustic Radiation Force Impulse (ARFI) emerged as an interesting tool with reliable repute and high precision.

**Aims:** To evaluate liver stiffness measurement (LSM) and splenic stiffness measurement (SSM) in healthy volunteers as concluded by the ARFI technique and to find out a numeric calculated ratio that may reflect their correlation in the otherwise healthy liver.

**Methods & Material:** A ratio (splenic stiffness/liver stiffness in kPa) was determined in 207 consenting healthy subjects and was investigated with respect to age, gender, ethnic origin, body mass index (BMI), liver and spleen sizes, ALT, AST, platelet count (PLT).

**Results:** Data from this work led to computing an index of 4.72 (3.42-7.33) in the healthy persons in average. Females had a higher index (6.37) than males (4.92) (P=0.002). We have not found any significant difference of the ratio in different age groups, ethnic origins or any correlation between SSM/LSM ratio and BMI, liver and spleen sizes, ALT, AST, PLT.

**Conclusions:** A quantifiable numeric relation between splenic and liver stiffness in the healthy subjects could be computed to a parameter expressed as SSM/LSM ratio. We believe that this ratio can be a useful reference tool for further researches in CLD.

### **Biography**

Laura Kassym is pursuing her PhD program in Semey State Medical University, Republic of Kazakhstan.

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