Elastography assessment of liver fibrosis

REFERRER INFORMATION SHEET

Liver Elastography is an accurate, non-invasive and reproducible investigation of fibrosis in patients.

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About the procedure

Elastography, or ultrasound shear wave elastography (SWE) is an imaging technique that maps the elastic properties of soft tissues.

The speed of ultrasound wave transmission through liver parenchyma is measured in metres per second and the tissue deformability/elasticity is measured in kilopascals.

The stiffer the liver tissue (i.e. presence of fibrosis), the higher the median speed and elasticity.

Clinical indicators

SWE is useful in the staging of fibrosis in patients with chronic liver disease where the main objective is to determine the presence or absence of advanced fibrosis.

It may also be useful in the follow-up of patients with fibrosis to assess response to treatment and to potentially tailor further follow-up and therapy

Comparison of SWE to Fibroscan

SWE (unlike Fibrsoscan which uses transient elastography), samples the liver in real time and produces ultrasound images of the liver.

An SWE procedure also allows for a formal ultrasound study of the liver and upper abdomen at the same time.

In terms of accuracy, SWE compares well with Fibroscan and has been shown to be more reliable in obese patients and those with ascites.

SWE and Fibroscan results are not comparable due to the differences in technique and units of measure.

Follow up studies are therefore recommended to be performed with the same technique.

How are the results presented?

The median of ten measurements will be recorded for both speed and elasticity.

Thresholds for stages of fibrosis are provided using METAVIR stage F0 to F4. Cut-off values will indicate patients at:

a) **low risk** for clinically significant fibrosis. Patient does not require additional follow-up (F0)

b) **high risk** for advanced fibrosis or cirrhosis (some stage F3 and F4). Patient may require different management and prioritisation for therapy

c) **Indeterminate** range (some stage F2 and F3). Due to the substantial overlap of fibrosis stages, it may be that likelihood ratios will be a better tool for documenting risk for this group.

   For these patients, additional tests (blood tests +/- liver biopsy) and clinical evaluation will be needed to determine appropriate follow-up.

The report will also include the Interquartile range/median value as a measure of examination quality and reliability.

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Patient preparation

The patient will need to fast for six hours prior to the appointment. Small amounts of water may be taken.

Locations

This examination is performed at the following clinics:

- Ashford Specialist Centre
- Modbury Hospital
- Mount Gambier
- Gawler

Reference

RG Barr et al Elastography Assessment of Liver Fibrosis: Society of Radiologists in Ultrasound Consensus Conference Statement Radiology 276: (3) 845-861

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