

Shear Wave Elasticity (SWE) Unreliable in Detection of Cirrhosis

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HYPOTHESIS

SWE correlates with the presence of cirrhosis (C).

AIMS

Identify a cohort of patients with established C or non-cirrhosis (NC) and determine the ability of shear wave velocity (SWV) and estimated METAVIR fibrosis score (eMFS) to detect cirrhosis..

METHODS

- US and SWV: All patients had a fasting US (GE LOGIQ E9) with SWE per manufactures instructions: shear wave velocity (SWV) and estimated METAVIR fibrosis score (eMFS: 0-4) were recorded. Surface nodularity, spleen length (SL) (cm) and ascites were recorded.
- Clinical data was abstracted from the records.

| | UA | C | NC |
|------------------|-----------|-----|-----|
| SWE unable | | 3 | 3 |
| HCV | | 2 | 19 |
| | Active | | |
| | SVR | 2 * | 10 |
| HBV | | | 21 |
| | Active | | |
| | Tx | 1 | 9 |
| ALD | | 3 | 2 |
| | Active | | |
| | Abstinent | 3 | |
| ACAH | | | 0 |
| | Pre-Tx | | |
| | Tx | 2 | 4 |
| CC | 2 | 11 | |
| PBC | | 1 | 6 |
| NASH | 2 | 8 | 26 |
| LT inactive | | | 4 |
| Acute LD | | | 6 |
| normal | | | 7 |
| misc | 2 | 13 | |
| NC-spleno megaly | | | 2 |
| total | | 46 | 147 |

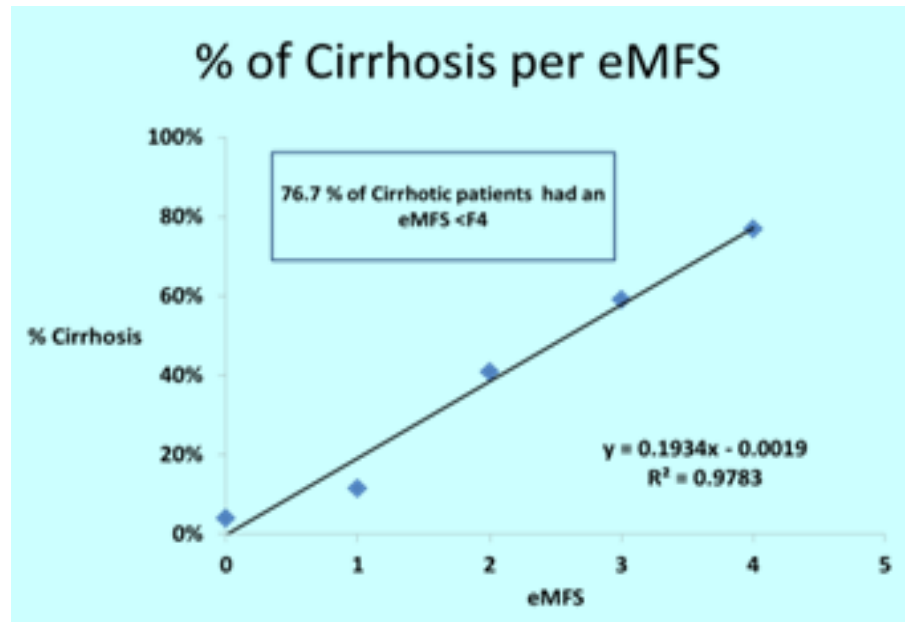
PATIENTS

- 193 sequential patients with US for HCC screening and/or initial evaluation of CLD had US with SWV: 147 NC and 46 C
- Liver Disease: see table
- Cirrhosis was defined based on current biopsy (LBx), distant prior LBx with continuing active liver disease, evidence of portal hypertension or nodular liver surface by MRI/CT, present or past ascites/variceal bleeding/HE thought to be due to CLD and those on liver transplant list.
- Patients with HCV, HBV, ACAH and ALD were treated, but still thought to have cirrhosis based on combinations of the above criteria.
- C categories based on clinical problems (ascites, VB, HE): **C1**: never had, **C2**: had previously and Recovered, **C3**: present requiring Tx, **C4** on LT list

| | Varices | Platelet | INR | Bilirubin | Creatinine |
|----|---------|----------|---------|-----------|------------|
| | | X1000 | | Mg% | Mg% |
| NC | 144 | 222(70) | 1(.1) | .7(.8) | .9(.6) |
| C1 | 7/15 | 146(62) | 1.1(.1) | 1.4(1.5) | 1.0(.4) |
| C2 | 13/15 | 129(57) | 1.1(.1) | 1.0(.6) | 1.2(.6) |
| C3 | 8/9 | 94(52) | 1.2(.2) | 1.7(1.3) | .9(.2) |
| C4 | 3/3 | 51(29) | 1.4(.3) | 3.3(1.7) | .8(.2) |

RESULTS

| | # | SWV | eMFS 0-4 | eMFS F3/F4 | Surface nodularity |
|----|-----|----------|-----------|------------|--------------------|
| NC | 144 | 1.5(.22) | .9 (.9) | 9/3 | 2/144 |
| C1 | 15 | 1.8 (.2) | 2.4 (1.1) | 6/2 | 8/16 |
| C2 | 15 | 1.9 (.3) | 2.7(1.4) | 1/7 | 14/17 |
| C3 | 10 | 1.8 (.3) | 2.6 (1.1) | 5/1 | 8/10 |
| C4 | 3 | 1.6 (.3) | 1.7(.6) | 0/0 | 2/3 |



CONCLUSIONS

- Measurement of SWV was not possible in 6/193 patients (3.1 %)
- The percent of patients with cirrhosis increased as the eMFS increased
- Surface nodularity is good indicator of C although it can not be used to dismiss cirrhosis as a consideration
- SWV is unreliable in the detection of cirrhosis in our population since most C had an eMFS <4.