Transient Elastography for Evaluating Hepatic Fibrosis in Thai Healthy Volunteers, Nakhon Ratchasima Province

Abstract

Transient elastography using Fibroscan is easy, non invasive and painless. Nowadays, there has been no data about transient elastography in Thai healthy volunteers. **Aim:** To evaluate the hepatic elastography in Thai healthy volunteers by Fibroscan. **Patients & Method:** Transient elastography using Fibroscan was performed in Thai healthy volunteers of Maharat Nakhon Ratchasima Hospital in November 2008. Fibroscan® 502 from Echosens, France with M single 3.5 MHz central frequency ultrasound probe was used to evaluate hepatic elastography by the well trained doctors and the result was delivered at the end of the 10 acquisitions as transient elastography with record in median score (kilopascal; kPa), interquartile ratio (IQR). The interpretation was compared with the normal stiffness of liver of 5.5 ± 1.6 kPa. **Results:** One hundred and ninety two healthy volunteers were recruited. The majorities of them were female 130 patients (67.71%) and mean age was 44.1 ± 10.9 years (age range 21-71 years). Their mean body mass index (BMI) was 23.2 ± 3.9 kg/m². Their last liver function tests were within normal range. Transient elastography were done with success rate 67-100% and fibrosis score was within normal limit; 5.5 ± 3.4 kPa with IQR 1.11 ± 0.07. **Conclusion:** One hundred and ninety two Thai healthy volunteers in Nakhon Ratchasima Province who had normal liver function test, had transient elastography 5.5 ± 3.4 kPa by Fibroscan.
Patients & Methods

Transient elastography using Fibroscan were performed in Thai healthy volunteer of Maharat Nakhon Ratchasima Hospital in November 2008. All of them gave the consent for this study. Demographic data were recorded. Fibroscan® 502 from Echosens, France with M single 3.5 MHz central frequency ultrasound probe was used to evaluate the hepatic fibrosis by the well.
trained doctors and the result was delivered at the end of
the 10 acquisitions as transient elastography with record
in median score (kilopascal; kPa), interquartile ratio
(IQR). The interpretation was compared with the normal
stiffness of liver of $5.5 \pm 1.6$ kPa$^8$. Validity of transient
elastography due to IQR should not exceed 30% and
the success rate should be at least 60%.

Results

One hundred and ninety two healthy volunteers
were recruited. The majorities of them were female 130
patients (67.71%) and mean age was 44.1$\pm$10.9 years
(age range 21-71 years), as in table 1. Their mean body
weight was 59.4$\pm$11.6 kg, mean height was 1.6$\pm$0.8 m
and mean body mass index (BMI) was 23.2$\pm$3.9 kg/m$^2$.

Their last liver function test were within normal
range; AST 25.0$\pm$10.3 (0-50 U/ml), ALT 27.8$\pm$19.4 (0-
50 U/ml), as in table 2.

Transient elastography were done with success
rate 67-100% and fibrosis score was within normal limit
as compared with Castera L$^8$, 5.5$\pm$3.4 kPa with IQR
1.11$\pm$0.07, as in table 2.

Table 1 Demographic data

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<th>Case (%)</th>
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<td>N=192</td>
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| Female       | 130 (67.7) |
| Mean Age$\pm$SD (yr) | 44.1$\pm$10.9 |
| Age range (yr)       | 21-71      |
| Mean body weight (kg) | 59.4$\pm$11.6 |
| Mean height (m)      | 1.6$\pm$0.8 |
| Body mass index (kg/m$^2$) | 23.2$\pm$3.9 |

Table 2 Liver function test and transient elastography

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<th>Liver function test</th>
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<td>AST (U/ml)</td>
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<th>Transient elastography</th>
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<td>Fibrosis score (kPa)</td>
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<td>IQR</td>
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<td>Success rate (%)</td>
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Discussion

Transient elastography using Fibroscan is a new
acceptable technologic method in evaluating hepatic
fibrosis and no data about transient elastography in Thai
health volunteer. In this study, the most of volunteer
were 67.7% female, mean age 44.1$\pm$10.9 years, normal
body mass index. Liver function test of these volunteer
were normal and also transient elastography of them
were normal (fibrosis score 5.5$\pm$3.4 kPa) and no
difference when compared with foreign healthy
volunteers$^8$. This study showed good correlation
between normal liver function test and normal transient
elastography.

Transient elastography by Fibroscan was shown
to be normal in Thai healthy volunteers who had normal
liver function test.

Conclusion

One hundred and ninety two Thai healthy
volunteers in Nakhon Ratchasima Province who had
normal liver function test, had normal transient
elastoghaphy by Fibroscan (fibrosis score 5.5$\pm$3.4 kPa).
Reference


