



Dec 26, 2020

Hepatorenal index protocol

fabio10stahl¹, Fabio Lucio Stahlschmidt¹¹Pontificia Universidade Católica do Paraná**1** Works for me dx.doi.org/10.17504/protocols.io.bq2jmycn

Radiochir Gruppe

fabio10stahl

DOI

dx.doi.org/10.17504/protocols.io.bq2jmycn

PROTOCOL CITATION

fabio10stahl, Fabio Lucio Stahlschmidt 2020. Hepatorenal index protocol. **protocols.io**
<https://protocols.io/view/hepatorenal-index-protocol-bq2jmycn>

LICENSE

This is an open access protocol distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited

CREATED

Dec 26, 2020

LAST MODIFIED

Dec 26, 2020

PROTOCOL INTEGER ID

45867

- 1 Each patient fasted for 4 h before the examination. First, the radiologist performed a comprehensive thoracic and abdominal ultrasound examination using the same ultrasound machine for all patients (S2000 HELX; Siemens, Erlangen, Germany). For all examinations, the conditions were as follows: frequency of 4.00 MHz, dynamic range of 70, grayscale map "D", the software Advanced SieClear™ for spatial compounding at a level 5, and the software Dynamic TCETM for speckle reduction at a level "HIGH."
- 2 Next, a photo containing the longitudinal axis of the right kidney and the liver was obtained after automated gain adjustment in the dorsal decubitus position or in the left lateral decubitus position using the subcostal or intercostal window.
- 3 A single focal zone was placed near the center of the image containing both the liver and the middle third of the kidney.
- 4 The workstation for all analysis using Osirix MD version 1.6 (Pixmeo Sarl, Swiss) after taking a 0.10 to 0.30 cm² region of interest (ROI) brightness measurement in the liver and renal cortex. The site of the renal cortex ROI was outside or between the renal pyramids in the center of the image, not crossing a limit of 1.0 cm from the focal zone line. The liver's ROI also did not cross a limit of 1.0 cm from the focal zone line in the center of the image. The measurements were not taken within or near the nodules and visible vessels (Fig. 1, 2).

Fig 1.tif

Fig. 1: Hepatorenal index measurement in a fatty liver using the subcostal window. Green: region of interest in the liver. Blue: region of interest in the renal cortex. Orange: renal pyramid. Author's source.

Fig 2.tif

Fig. 2: Hepatorenal index measurement in a fatty liver using the intercostal window. Green: region of interest in the liver. Blue: region of interest in the renal cortex. Orange: renal pyramid. Author's source.

- 5 Three ROIs each were obtained for the liver and renal cortex.
- 6 The hepatorenal index was calculated for each sequence of ROI measurements.
- 7 The difference between the closest indexes must be less than 0.20 hepatorenal index units, and the arithmetic mean of these closest values was then used for further analysis.