

RENAL (Native) ARTERY STENOSIS SONOGRAM

Recommended transducer:

GE 700: 3.5 or 5 MHz curved linear probe

Acuson Sequoia: 4CI or 4VI

GE Logiq 9: 3.5 curved or 4 sector probe

Images:

Start the study with the RENAL SONOGRAM protocol.

Obtain the Acceleration Time (AT) and Acceleration Index (AI) of the interlobar arteries at the upper pole, mid segment and lower pole of the kidney. Several waveforms may be needed to get the "perfect" one for accurate AT and AI measurements. **Be patient!** Choose the waveform that clearly shows the early systolic peak.

Using color Doppler, survey the entire main renal artery and take the representative images. The arteries are often best seen in the coronal view, with the patient in the decubitus position. This view also gives the best Doppler angle for accurate velocity measurements. The vessel should be evaluated for focal color flow inhomogeneity, indicating an area of increase flow and/or turbulence (i.e. stenosis). If the flow looks homogenous, start lowering the velocity range until color inhomogeneity is seen in the entire vessel. With this process, any increase of flow velocity will be detected.

Measure the peak systolic velocity of the suspected stenotic area (don't forget to angle correct).

Measure the peak systolic velocity of the abdominal aorta adjacent to the main renal arteries.

NOTE: If no area of suspected stenosis is found on color Doppler, no spectral waveform of the main renal artery is needed.