**GSI: Delivering Value Based Care**

*Example findings from peer reviewed GSI publications*

**ANGIOGRAPHY**
- Low keV images can reduce iodine load by at least 50% for patients with compromised renal function.
- Pulmonary Angiography: Total Iodine, g:
  - Conventional CT: 22.2 g
  - GSI: 11.1 g
- CT Aortography (no difference in CNR or SNR): Total Iodine, g:
  - Conventional CT: 50 g
  - GSI: 15 g

**HEAD AND NECK TUMOR VISIBILITY**
- 2.3x higher average tumor attenuation for increased tumor conspicuity and improved tumor evaluation.

**RENA L STONE CHARACTERIZATION**
- 100% Sensitivity and 99.7% Specificity for uric acid stones, & atomic number for stone composition for faster and simplified diagnosis workflow.

**ABDOMEN – ONCOLOGY**
- Improves liver lesion detection 17% and kidney lesion characterization 12%.
- Liver Lesion Detection after transarterial chemoembolization (TACE), Specificity:
  - Conventional CT: 77.8%
  - GSI: 94.4%
- Kidney Lesion Characterization, Specificity:
  - Conventional CT: 81%
  - GSI: 93%

**ORTHOPEDICS - REDUCED METAL ARTIFACT**
- 6x reduction in non-diagnostic scans with GSI MAR.
- 6x reduction in non-diagnostic scans with GSI MAR, enhancing evaluation of metal implants and adjacent bone or tissue.

**GOUT**
- 100% detection by uric acid (calcium) mapping for non-invasive diagnosis.

*The example findings cited are limited to the referenced studies only and may not be broadly applicable to your clinical practice.*
Compared with conventional CT, GSI could significantly improve the detection of tophi. Using multiple lines of evidence, our results suggest that 40 keV VMIs objectively assess the concentration of uric acid deposits in tophaceous gout. Low-contrast agent dose DECT monochromatic imaging in pulmonary angiography accommodates superior intravascular enhancement and contrast in pulmonary arteries, and improves diagnostic confidence with compatible radiation dose. However, understanding principles of dual-energy CT data processing and image generation is necessary to derive maximum benefit from the dual-energy CT generation is necessary to derive maximum benefit from the dual-energy CT.

The ability to obtain VMS images gives dual-energy CT potential advantages compared to standard iodine SECT aortography in the same patient. CNR, SNR, and lower although acceptable subjective image scores when compared to standard iodine SECT aortography in the same patient.

The study results demonstrate that analysis of contrast-enhanced dual-energy material attenuation significantly improves the specificity for characterization of small (1–4 cm) renal lesions compared with that of conventional attenuation measurements. This improvement in specificity may decrease the frequency of unnecessary work-up for small indeterminate renal lesions.

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The quantitative measurement of the tophi concentration provides a new imaging method for quantitatively monitoring clinical outcomes of tophi. Patients. The quantitative measurement of the tophi concentration provides a new imaging method for quantitatively monitoring clinical outcomes of tophi.

Review clinical experience

The ability to obtain VMS images gives dual-energy CT potential advantages over conventional CT in reducing metal artifacts and improving image quality and diagnostic value. Evaluation of metal implants and adjacent bone or tissue is enhanced with VMS images reconstructed from dual-energy CT datasets. However, understanding principles of dual-energy CT data processing and image generation is necessary to derive maximum benefit from the dual-energy CT datasets.

Dual-energy spectral CT can detect gout tophi within the peripheral joints of the patients. The quantitative measurement of the tophi concentration provides a new imaging method for quantitatively monitoring clinical outcomes of tophi.

Using multiple lines of evidence, our results suggest that 40 keV VMIs objectively improve tumor visibility compared with SECT and, furthermore despite the increased noise levels, are preferred for targeted tumor evaluation subjectively. These conclusions seem suitable both for specialized centers as well as in general practice settings where head and neck cancer imaging is performed.