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Yes, DS!

Dynamic Perfusion CT? With 22 cm field coverage?
At doses comparable to conventional multiphase exams?

Whole organ dynamic perfusion imaging using 128-slice CT?

In oncology, detailed information on dynamic parameters is vital for physicians to target tumor therapy more precisely and improve patient outcomes.

However, with conventional CT, small adenocarcinoma tumors with isodense presentation may be missed, whereas these tumors can be visualized by assessing dynamic perfusion CT – Dual Source CT can make the difference, a study conducted in Belgium concluded.*

Find out how Dual Source dynamic perfusion CT delivers added value in investigations of tumor vascularization.

More studies, cases and interviews about CT without compromises? Check out our Yes, DS webfeature.

*Assessment of tumor vascularization in pancreatic adenocarcinoma using 128-slice perfusion computed tomography imaging, Delrue L et al. J Comput Assist Tomogr 2011; 35: 434-438.

Title of paper

Assessment of tumor vascularization in pancreatic adenocarcinoma using 128-slice perfusion computed tomography imaging

Delrue L et al. J Comput Assist Tomogr 2011; 35: 434-438.
<http://www.ncbi.nlm.nih.gov/pubmed/21765297>

Summary of Study:

Whole-tumor perfusion imaging using 128-slice CT

In the study referenced below, perfusion CT was shown to deliver added value compared with image assessment based on tissue density measurements in investigations of tumor vascularization in pancreatic adenocarcinoma, suggesting that it may allow more accurate diagnosis. With conventional CT, small adenocarcinoma tumors with isodense presentation may be missed, whereas these tumors can be visualized by assessing perfusion. Perfusion CT is becoming more widely used for the diagnosis of pancreatic adenocarcinoma. Future applications may include aiding physicians in monitoring the response to therapy

More Information about this topic:

Achieving precise dynamic perfusion CT imaging at low doses

In oncology, the more detailed the information on parameters such as blood flow, blood volume, transit time, and permeability when detecting, treating, and monitoring tumors, the better the ability may be of physicians to target therapy more precisely for improved patient outcomes.

Until now, however, dynamic perfusion CT has typically required high doses of radiation resulting in a high dose burden and accumulation in follow-up scans. In addition, scan ranges have typically only led to limited coverage of larger organs such as the liver.

With third-generation DSCT, a dynamic perfusion scan can provide high diagnostic accuracy at doses comparable to conventional abdominal multiphase examinations – providing potential advantages for both competing imaging centers and oncology patients.

Dual Source CT supports excellent low-dose perfusion imaging

The ability of Dual Source dynamic perfusion CT to capture the function as well as the morphology of the tissue to be examined opens up the possibility of using local tissue perfusion as a marker in treatment monitoring – for example, in the diagnosis and treatment of hepatic and gastrointestinal tumors.

Dynamic perfusion CT on our 3rd generation DSCT scanners meets the diagnostic requirements for tissue lesion visualization in one scan at radiation doses similar to those of a conventional 120 kV multiphase abdomen scan. With the new Stellar^{Infinity} detectors of the SOMATOM Force, Siemens enables body perfusion suitable for use in clinical practice. The increased speed and coverage of two sets of 96 (192) rows allow a perfusion range of up to 22 cm, thus easily covering entire organs.

The key to bringing this breakthrough to everyday use is the full electronic integration of the Stellar^{Infinity} detector and the new Adaptive Dose Shield that together enable up to 50% dose reduction in 4D imaging in comparison with other state-of-the-art CT's. Further technical enhancements such as the Vectron™ tube combined with the integrated circuit detectors help reduce image noise in low kV scans and therefore allow for diagnostic image quality even at low kV settings.

Siemens Healthcare Headquarters

Siemens Healthcare GmbH

Henkestraße 127

91052 Erlangen

Germany

Phone: +49 9131 84-0

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