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GE Study Highlights Benefits of New Low Dose Imaging Solutions

GE Healthcare's Medical Diagnostics business (MDx) announced results of a pivotal study outlining the potential to use lower iodine concentration and reduced radiation exposure in an abdominal CT scanning procedure. The study showed that advanced CT reconstruction techniques such as ASiRTM or VeoTM, combined with the isosmolar contrast agent, VisipaqueTM (270 or 320mgI/ml) and low kVp, deliver equivalent or better contrast enhancement and improved diagnostic images when compared to iomeprol (400mgI/ml) injected at the same volume and rate (2ml/kg at 3,5ml/sec).

By lowering both the radiation and iodine dose, the image quality was not compromised, thus ensuring confident diagnosis. The results of this study carried out by Dr. Jean-Louis Sablayrolles, Chief of the CT and MRI Department, Centre Cardiologique du Nord, St. Denis, France, were presented at the European Congress of Radiology (ECR) 2012 on Sunday 4th March, 2012. High iodine concentration and dose, in addition to the radiation exposure associated with the use of contrast-enhanced (CE) CT scans, can be a concern for radiologists in patients more susceptible to cardio-renal complications after CE CT and for those CT scanned more regularly.1,2Dr Sablayrolles said that, "these types of protocols with low energy CT techniques which use a lower concentration of contrast could potentially help physicians in the future, enabling them to reduce both radiation exposure and the risk of cardio-renal related events, particularly in the more vulnerable population. Such improved contrast enhancement at low iodine concentration and/or lower radiation dose represents a clear opportunity to improve patient care in CT."

"The ability to reduce iodine concentration and radiation with our low dose CT technologies and isosmolar contrast agent, Visipaque, is just one of the many promising improvements for radiology patients. GE Healthcare is committed to continuing research in lowering iodine concentration in contrast media and radiation dose to improve patient care during diagnosis and treatment," said Clemens Kaiser, General Manager, Contrast Media, GE Healthcare, Medical Diagnostics. About the Study Dr Sablayrolles' study examined patients who underwent abdominal CT scans (at 80, 100 or 120 kVp) after the injection of Visipaque (270 or 320 mgI/ml, 2ml/kg at 3.5 ml/sec) or iomeprol (400 mgI/ml, 2ml/kg at 3.5 ml/s). CT scans were performed at 80, 100 and 120kVp to obtain arterial phase (25-35s) and portal phase (65-75s) data, and acquisition parameters were set according to the patient's body mass index (BMI). In both settings, projection data was reconstructed with filter back projection (FBP) and two types of iterative reconstruction (ASIR-50 percent and Veo). Researchers found that a reduction in kVp levels combined with noise reduction software such as ASiR and Veo, to counteract increased image noise, enabled both iodine concentration and radiation exposure to be reduced. Specifically, contrast enhancement with iomeprol 400mgI/ml was not superior to Visipaque 320mgI/ml when used in conjunction with ASiR and Veo. These reconstructions using ASiR and Veo improved overall image quality of parenchyma, edges and interfaces and vascular structures.

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