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COR Analyzer Transforming cCTA Use at Galichia Heart Hospital

Galichia Heart Hospital in Wichita, Kansas was founded nearly ten years ago based on a commitment to both quality and efficiency in cardiac care. The hospital is an accredited chest pain center with a credited ACR certified CT program. The hospital acquired a Siemens 64 slice CT scanner in 2006 as part of its effort to provide state of the art cardiac care, patient safety and service. Galichia is the first hospital in Kansas to begin using The COR Analyzer® System to help speed evaluation of patients who enter the emergency department ("ED") with chest pain. Since its installation in early 2010, the COR Analyzer has demonstrated significant benefits to patients and the hospital, particularly in increasing use of Coronary CT Angiography ("cCTA") to rapidly rule out acute coronary events in low to mid risk chest pain patients entering the ED.

Dr. Mark Bowles, the leading cCTA expert reader at Galichia Heart, believes that cCTA is a superior technique for coronary artery disease ("CAD") detection that has the potential to provide quality patient care at reduced cost. His view is supported by clinical studies such as the CT-STAT trial, presented at the American Heart Association Scientific Sessions in 2009, which found that cCTA is cost effective in triaging chest pain patients coming to the ED.

However, the CT scanner was underutilized because there were not enough experienced expert readers available on a routine basis in the group. The situation at Galichia is not uncommon. "We were sending chest pain patients to Galichia Medical Group for a nuclear stress test when we had a 64 slice CT installed at Galichia Heart," said Dr. Bowles. "These low to mid risk patients could spend 24-36 hours in the hospital to undergo observation and a stress test instead of 3-6 hours with cCTA. Patients had to wait for a nuclear test until 7 a.m. the next day and even then isotope was not always available, causing further delays in their evaluation."

Immediate Signal of Patient Status

When Bill Wild, Galichia's COO, was introduced to the COR Analyzer System, he immediately understood that it presented an opportunity to realize the potential of the hospital's investment in the CT scanner for evaluating chest pain patients in the ED. The COR Analyzer System provides fully automated analysis of cCTA to assist in detecting CAD.

"The COR Analyzer is a very unique system that is assisting our physicians in making immediate decisions in what are sometimes life threatening situations," said Wild. "cCTA analysis requires special expertise, and we do not always have an expert reader on site. The COR Analyzer provides a preliminary cCTA interpretation and immediately signals whether there is a patient at risk who may need urgent care ("Red Heart") or identifies the patient as negative ("Green Heart"), allowing him or her to be removed from consideration for admission.

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High Confidence in Rule-Out

The COR Analyzer plays on the strength of cCTA in ruling out CAD. For Dr. Bowles the system's ability to rule out patients with significant stenosis is impressive. Recent studies have shown that the COR Analyzer's "reads" are comparable to those of an expert reader. One study by clinicians at Boston's Beth Israel Deaconess Hospital, reported at the 2009 meeting of the Radiological Society of North America (RSNA), found that 98 percent of ED patients determined by the COR Analyzer System to not have significant stenosis were in agreement with the expert readers."If the COR Analyzer displays a "Green Heart,"* I have great confidence that CAD is not an issue and we can either discharge the patient or focus on non-cardiac causes for the chest pain symptoms," he says. He added that reduction in use of the observation unit from "Green Heart" patients has already yielded significant cost savings.

"In more than 200 cases I have read so far with the system, it has never missed a patient who had significant (50% or more) coronary artery stenosis. However, the system is conservative and overcalls. I believe that is a good thing and it increases confidence in my reads. Our less experienced readers already know to look at the automatically generated Curved MPRs and make a decision on whether the marked lesion is 'real' or may be a cCTA artifact. In case an immediate second opinion is needed, I can always look at the report that includes summary of findings and curved MPR views. The curved MPRs are readily accessible either at the hospital workstation or PACS. The report can also be accessed through e-mail or a blackberry. The final read is done by an expert reader. As an expert reader, the COR Analzyer, makes me more efficient, allowing me to focus on more complex cases and quickly release those patients who are not having a coronary event."

Immediate Patient Care and Economic Benefits

The benefits of the COR Analyzer have been immediate and substantial for patients and the hospital. Since the COR Analyzer was installed early in 2010 utilization of cCTA in the ED has jumped significantly. The number of patients undergoing cCTA increased from three in January 2010 to 18 in February 2010, 38 in March to 40 or more per month since April 2010.

For patients the evaluation is much more rapid. "We're no longer referring patients to our sister center for nuclear stress tests," says Dr. Bowles. The increased utilization is both reducing costs and increasing revenue at the hospital. The hospital incurs a considerable cost for each patient referred to another center for nuclear stress tests. The resulting cost reduction, including reduced hospitalization time, is 70 percent. With the new CPT codes for cCTA in the ED that became effective in 2010, we are reimbursed by CMS and private insurers.

For further information about the COR Analyzer® System:
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*"Green Heart" - no significant (50% or more) stenosis detected