What’s New in the Patient Safety World

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Stroke: Doing Less Well Than You Think?

It’s human nature to think we are doing better at something than we really are when we don’t know the data. A number of years ago we asked caregivers at a community hospital how well they provided care for patients with acute MI. They weren’t really sure because they sent most of their acute MI patients to a tertiary hospital. But they thought most of their patients would have received percutaneous coronary angioplasty within the prescribed timeframes. When they finally got around to requesting the data from the tertiary hospital it turned out that almost none of the patients got the angioplasty within the recommended timeframe, mainly because of transport delays and delays on arrival. Their patient population would have been much better off receiving thrombolytic therapy at the community hospital before being transported to a tertiary hospital. Once the hospital recognized this problem they began initiating thrombolytic therapy on-site and did a good job achieving this therapy within the prescribed timeframes for most acute MI patients. The problem was clearly one of lack of data availability and lack of timely feedback on performance.

The same applies to acute stroke care. A recent study from hospitals participating in the American Heart Association’s “Get With The Guidelines” (GWTG) program found that hospitals often overestimate their ability to deliver timely tPA to patients treated with tPA (Lin 2015). Less than one third of all hospitals responding to a survey accurately identified their door-to-needle (DTN) time performance. Respondents from hospitals in middle- and low-performing hospitals in particular overestimated their DTN performance.

The key message is that to improve care you need to provide comparative provider performance data routinely to caregivers.

There are many factors that go into running successful stroke programs. We’ve discussed those in the several prior columns listed at the end of today’s column. But there are a few new considerations.

One important factor is coming to a correct diagnosis of stroke. Prior to administering tPA we need to exclude certain stroke “look-alikes” or “mimics” (eg. migraine, post-ictal Todd’s paralysis, etc.). However, we may also fail to diagnosis acute strokes in some patients. A recent study (Richoz 2015) looked at acute stroke “chameleons” presenting to a university hospital emergency department. They found that 2.1% of strokes were
missed initially. These were either misdiagnosed as other neurologic diseases (42%) or non-neurologic diseases (17%) or as unexplained decreased level of consciousness (21%) or as concomitantly present disease (19%). These strokes tended to be either very mild or very severe. At 12 months patients with these “chameleons” tended to have less favorable outcomes and higher mortality.

Another problem in thrombolytic therapy for acute stroke was recently noted by Bordoehl and colleagues (Bordoehl 2015). Because of the short half-life of tPA, it should be administered as a bolus followed by an immediate infusion. However, they note that in clinical practice there are sometimes delays between the application of the bolus and the start of the infusion. In addition, interruptions of the infusion may occur. They found that even 1-minute delays before the infusion is begun or interruptions of the infusion for more than 1-minute may affect serum tPA concentrations. Their results strongly suggest avoiding bolus-infusion delays by giving the bolus only when the infusion is ready. They went on to estimate the dosing of a potential second bolus depending on the duration of the delay/interruption to allow for the achievement of appropriate serum tPA concentrations. However, they stress that clinical safety data are needed to recommend the application of a second bolus.

Sustaining improvement is often difficult and another recent study illustrates the difficulties encountered in sustaining some components of good stroke care. Perhaps just as important as getting thrombolytic therapy to those eligible acute stroke patients is prevention of complications of stroke, such as UTI’s, pneumonia, and DVT. Williams and colleagues (Williams 2015) conducted a cluster-randomized quality improvement trial, randomizing hospitals to quality improvement training plus indicator feedback versus indicator feedback alone to improve deep vein thrombosis (DVT) prophylaxis and dysphagia screening. DVT prophylaxis improved more during the intervention period in the active intervention group but this improvement was not sustained afterward. For improving dysphagia screening quality improvement training was no better than feedback alone.

So, while we encourage you to make the major changes noted in our columns below, we also use the above examples to remind you that some of the other issues in stroke care also impact the outcomes for your patients.

Some of our previous columns on improving stroke care:
November 6, 2012 “Using LEAN to Improve Stroke Care”
March 18, 2014 “Systems Approach Improving Stroke Care”
September 23, 2014 “Stroke Thrombolysis: Need to Focus on Imaging-to-Needle Time”
May 12, 2015 “More on Delays for In-Hospital Stroke”
References:

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