Association Between Hospital Imaging Use and Venous Thromboembolism Events Rates Based on Clinical Data

Conclusions: Venous thromboembolism (VTE) rates when examined with clinically ascertained outcomes and detailed risk adjustment reflect hospital imaging use rates and therefore perhaps are more of an indicator of vigilant high-quality care and not poor performance.

Summary: The Centers for Medicare & Medicaid Services (CMS) have declared VTE a “never event” that is not additionally reimbursed following certain operations. VTE performance may also be eventually tied to financial penalties through the 2015 CMS Hospital Value-based Purchasing program. However, the validity of VTE as a quality and safety indicator has been questioned. There’s a real possibility of a co-called surveillance bias or “the more you look, the more you find”. It may be that hospitals that are more vigilant and look more frequently for VTE find more VTE, and therefore are potentially penalized for having high VTE rates. Using Medicare administrative claims data limited to patients ≥65 years of age or older, the authors previously found evidence supporting this “the more you look, the more you find” phenomenon (Blimora KY et al, JAMA 2013;310:1482-9). However, such data was limited to the inpatient period only and many VTE events may occur following hospitalization.

To address these limitations and to encompass a wider variety of patients, the authors used data from the American College of Surgeons National Surgical Quality Improvement Project (NSQIP) to further investigate the “more you look, the more you find” phenomenon with respect to VTE. Data from 208 hospitals (2009 to 2010) were used for analysis. Hospitals were divided into quartiles according to VTE imaging use rates (Medicare claims). Observed and risk-adjusted postoperative VTE rates (regression models using the NSQIP data) were examined across VTE imaging use rate quartiles. Multivariable linear regression models were developed to assess the impact of hospital characteristics (American Hospital Association) and hospital imaging use rates on VTE event rates. The mean risk-adjusted VTE event rates at 30 days after surgery increased across VTE imaging use rate quartiles: 1.13% in the lowest quartile to 1.92% in the highest quartile (P < .001). The trend was statistically significant and remained when examining only the inpatient period. Hospital VTE imaging use rate was the dominant driver of reported VTE event rates (P < .001). No other hospital characteristics had significant associations.

Comment: The data further cast doubt on the use of VTE rates as a measure of hospital quality and as a valid patient safety indicator. Use of VTE rates in pay-for-performance may have the unintended consequence of decreasing VTE imaging rates and subsequent decreased treatment of VTE because it is not discovered and as a consequence, worse patient outcomes.

Improved Quality of Life After 1 Year With an Invasive Versus a Noninvasive Treatment Strategy in Claudicants: One-Year Results of the Invasive Revascularization or Not in Intermittent Claudication (IRONIC) Trial

Conclusions: An invasive treatment strategy improves intermittent claudication (IC) distance and health-related quality of life at 1 year in patients with IC. Unselected patients with IC after clinical and duplex ultrasound assessment, requesting treatment for IC were randomly assigned to invasive (n = 79) or noninvasive (n = 79) treatment groups. The primary end point was health-related quality of life after 1 year, assessed with the Medical Outcomes Study Short Form 36 version 1 and the Vascular Quality of Life Questionnaire. Secondary end points included walking distance on a graded treadmill. The SF 36 version 1 physical component summary (P < .001) and Medical Outcomes Study Short Form 36 version 1 physical sub-scales improved significantly more in the invasive vs the noninvasive treatment group. Overall, vascular quality of life questionnaire score (P < .01) in 3 of 5 domain scores improved significantly more in the invasive vs noninvasive treatment group. IC distance improved significantly more in the invasive vs the noninvasive (±50 m) group (P = .005). Change in maximum walking distance was not significantly different between groups. In the invasive group both endovascular and open procedures were performed with 28 procedures above the inguinal ligament in 1 year.

Conclusion: The study results cannot be generalized to patients with mild or very severe symptoms. In addition, patients in the noninvasive group received only advised exercise and a structured but not a supervised program. Therefore, one may argue that optimal treatment was not provided to the noninvasive group although the same recommendations were given. In addition, the number of patients was too small to perform subgroup analysis on the effect of open vs endovascular treatments and above and below the inguinal ligament treatments on health quality of life parameters. However, with the more you look, the more you find” phenomenon it is unclear as to the magnitude of benefit with the invasive treatment strategy, it does not appear that the patients were harmed to a significant extent, at least in this study out to 1 year. The Impact of Acute Renal Failure on Early and Late Outcomes After Thoracic Aortic Endovascular Repair

Conclusions: Acute kidney injury (AKI) is an important risk factor for both early and late mortality following thoracic aortic endovascular repair (TEVAR).

Summary: Acute kidney injury (AKI) is a well-known and important source of morbidity after thoracic aortic surgery. Most of the debate however has been derived from open thoracic aortic repair, and there is a limited and conflicting data on the frequency of AKI following TEVAR.

The authors note that a recently popularized consensus criteria termed RIFLE (Risk-injury, failure, loss, end-stage) is a consistent standard by which to evaluate perioperative renal insufficiency (Bellomo R et al. Intensive Care Med 2007; 33:409-13). The purpose of this study therefore was to review the incidence and risk factors that impact AKI occurring after TEVAR over a 20-year period. There were 350 patients without prior dialysis requirement who underwent TEVAR (1993 to 2013). Mean age was 68.7 years (54% male). The mean preoperative glomerular filtration rate was 76.5 ± 37.6 mL/min, with 39 patients (11.7%) in chronic kidney disease stage 3 or 4. TEVAR was performed for rupture in 20.6%. Mean contrast volume administered was 95.7 ± 52.9 mL. 4.9% of patients (n = 17) had early mortality. AKI defined as RIFLE classes risk, injury or failure was seen in 59 (17%) patients (risk = 36, injury = 14, failure = 9). Independent predictors of AKI included history of a saccular aneurysm, postoperative renal failure, use of perioperative red blood cell transfusion and the percutaneous inferior vena cava crossing technique (odds ratio 9.8). Ten-year survival was 38.1%. Both injury and failure AKI RIFLE classes independently predicted late mortality (P < .05). Length of stay was markedly increased with occurrence of AKI (mean, 16.8 ± 15.5 days vs no AKI, P < .001). Occurrence of renal failure was also independently associated with an increased risk of late mortality and when stratified by class of AKI both the injury and the failure stages independently predicted late mortality (injury odds ratio, 4.0, P < .001; failure odds ratio, 2.8, P = .039).