

The Quality and Safety of Sedation and Monitoring in Adults Undergoing Non-Operative Transesophageal Echocardiography

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October 15, 2022

Abstract

Background: Sedation is an essential component of the transesophageal echocardiography (TEE) procedure for patient comfort. Utilization and the clinical implications of cardiologist-supervised (CARD-Sed) versus anesthesiologist-supervised sedation (ANES-Sed) are unknown. **Methods:** We reviewed non-operative TEE records from a single academic center over a five-year time period and identified CARD-Sed and ANES-Sed cases. We evaluated the impact of patient comorbidities, cardiac abnormalities on transthoracic echocardiogram (TTE), and the indication for TEE on sedation practice. We analyzed the use of CARD-Sed versus ANES-Sed in light of institutional guidelines, the consistency in the documentation of pre-procedural risk stratification, and the incidence of cardiopulmonary events including hypotension, hypoxia and hypercarbia. **Results:** A total of 914 patients underwent TEE, with 475 (52%) receiving CARD-Sed and 439 (48%) ANES-Sed. The presence of obstructive sleep apnea ($p=0.008$), a BMI greater than 45kg/m^2 ($p<0.001$), an EF of less than 30% ($p<0.001$) and pulmonary artery systolic pressure of more than 40 mm Hg ($p=0.015$) were all associated with the use of ANES-Sed. Of the 178 (19.5%) patients with at least one caution to non-anesthesiologist-supervised sedation by the institutional screening guideline, 65 (36.5%) underwent CARD-Sed. In the ANES-Sed group, where intraprocedural vital signs and medications were documented in all cases, hypotension ($n = 91, 20.7\%$), vasoactive medication use ($n=121, 27.6\%$), hypoxia ($n= 35, 8.0\%$), and hypercarbia ($n= 50, 11.4\%$) were noted. **Conclusions:** This single-center study revealed that 56% of the non-operative TEE utilized ANES-Sed over five years. Sedation-related hemodynamic changes and respiratory events were not infrequently encountered during ANES-Sed.

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