ECG image quality ($n = 1$, 20%), and cardiology request for ED evaluation ($n = 1$, 20%).

Conclusion: Prehospital ECG transmission and ED physician review were associated with shorter door-to-Cath Lab times, though this study was underpowered for statistical significance. Missed activations were primarily due to modifiable communication and data-quality barriers, rather than failure to recognize STEMI.

192 | Prospective Validation of the Canadian Syncope Risk Score in a United States Community Setting: An Interim Analysis

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Background and Objectives: The Canadian Syncope Risk Score (CSRS) can be used to identify which emergency department (ED) patients with unexplained syncope are likely to develop a serious post-ED event but has not been widely validated in U.S. community EDs. We sought to address this evidence gap.

Methods: We undertook a prospective pragmatic observational study to validate the CSRS in 5 U.S. community EDs from 03/2022 through 10/2024 (30 of 32 months have been analyzed). We included health plan members ≥16 years of age with syncope whose treating physician activated a clinical decision support tool. We excluded patients with a serious cause identified in the ED (e.g., intestinal bleeding). The tool helped calculate the CSRS, assigned a risk category with an estimated 30-day incidence of serious outcomes (our primary outcome, adopted from the original CSRS studies), and provided risk-based recommendations for monitoring and consultation. Serious outcomes were collected using extraction from clinical databases combined with manual health records review and were each adjudicated. We calculated calibration and discrimination characteristics for CSRS validation.

Results: We included 3642 patients with median age 68 years (IQR 51–79); 2031 (55%) were female. Overall, 98 (2.7%) experienced a 30-day composite outcome, including 6 patients (0.16%) who died. Only 1 outcome occurred among 603 patients under 40 years of age. With the total score as the only predictor in a logistic regression model, the calibration slope was 0.82 with good fit at low values (where accurate prediction of absolute risk is clinically meaningful). The area under the receiver operating characteristic curve was 0.73 (95% CI: 0.68–0.77). The proportion of patients with a composite outcome increased from 7 of 1257 (0.6%) in the very-low-risk group to 11 of 125 (8.8%) in the very-high-risk group (Cochran-Armitage trend test $p < 0.001$). None of the very low and low-risk patients died. At a threshold score of −1 (2385 of 3642 patients [65.5%] had a risk score ≥ −1), the CSRS sensitivity and specificity were 92.8% (95% CI, 85.8%–97.0%) and 35.3% (95% CI, 33.7%–36.9%), respectively.

Conclusion: In this interim analysis of a multicenter validation study of the CSRS in U.S. community EDs, the tool showed good fit at low values and good discrimination. Outcomes were rare in younger adults. We await study completion and subsequent tool expansion to 16 affiliated EDs.

193 | Safety of Three Intravenous Rate-Reducing Regimens for Atrial Fibrillation With Rapid Ventricular Response

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Background and Objectives: Atrial fibrillation (AF) with rapid ventricular response (RVR) is commonly encountered in the emergency department (ED) and treated with intravenous (IV) beta blocker (BB) or calcium channel blocker (CCB) therapy. Guidelines advise against combining these IV medications due to concerns for hypotension and bradycardia. No studies have compared dual IV BB and CCB therapy with monotherapy. We sought to evaluate the safety of this combination compared with monotherapy.

Methods: We conducted a data-only retrospective cohort study across 21 community EDs. We included adult patients who presented with primary AF (not secondary to another cause) and heart rate greater than 110 beats/minute followed by 1 of 3 treatments: BB alone, CCB alone, or both (in either order separated by <4 h). Primary outcomes were hypotension (systolic blood pressure <90 mmHg), bradycardia (heart rate <50 beats/minute), and IV vasoactive medications. We performed a survival analysis over a 4-hour time period starting with the initial IV BB or CCB bolus with censoring by cardioversion initiation, patient leaving the hospital, death, or end of follow-up. We report unadjusted Cox proportional hazard ratios (HRs).

Results: We identified 103,816 potentially eligible patient encounters and included 42,903 in our analysis after applying exclusion criteria such as no primary AF, RVR, or IV BB or CCB medications. Mean age was 69.5 years (SD 13.6) and 52% of patients were female. For treatment, 14,669 (34.2%) received IV BB only, 23,764 (55.4%) received IV CCB only, and 4,470 (10.4%) received both. There were 3,638 cases of hypotension, 404 cases of bradycardia, and 13 cases needing vasopressors. Compared with monotherapy, dual therapy had a higher rate of hypotension (HR 1.31; 95% CI 1.18–1.46), but not bradycardia (HR 1.14; 95% CI 0.83–1.57) or IV vasoactive medications (HR 3.87; 95% CI 0.67–22.4).

Conclusion: We found that the use of combined IV BB and CCB for AF RVR was associated with a greater rate of hypotension, but not bradycardia or vasopressor medication use. On further analysis, we will identify associated risk factors. Prospective studies are needed to further evaluate safety outcomes.