548 | Dexmedetomidine Sublingual Film for Acute Agitation in Schizophrenia or Bipolar Disorder: Pooled Trial Data

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Background and Objectives: Acute agitation is frequently managed in US emergency departments. Dexmedetomidine sublingual film (SF) is an investigational, self-administered treatment for acute agitation in patients with schizophrenia (SCZ) or bipolar disorder (BPD). Dexmedetomidine is a selective agonist of alpha-2 adrenergic receptors.

Methods: A post hoc analysis of pooled data from 2 randomized, double-blind, placebo-controlled Phase 3 trials of dexmedetomidine sublingual film (180 mcg or 120 mcg) was conducted in participants aged 18-75 with acute agitation and either SCZ or BPD. Acute agitation was defined as a total score ≥14 on the Positive and Negative Syndrome Scale (PANSS)-Excited Component (PEC) scale and ≥4 on at least 1 of the 5 PEC items (poor impulse control, tension, hostility, uncooperativeness, excitement). The primary endpoint was change from baseline in PEC total at 2h. The secondary endpoint was earliest time of a statistically significant separation from placebo.

Results: 760 patients enrolled in the 2 trials. All doses of dexmedetomidine SF met the primary endpoint of statistically significant change from baseline in PEC total at 2h vs placebo (P <.001). Mean (SD) reductions in PEC total at 2h were -10.4 (4.4), -8.7 (5.0), and -4.8 (4.7) for 180 mcg, 120 mcg, and placebo, respectively. Statistically significant separation from placebo occurred as early as 10 minutes at 180 mcg (P=.004) and 20 minutes at 120 mcg (P=.015). There were no drug-related serious or severe AEs in either trial. No participant was unarousable either by AE reporting or by the Agitation and Calmness Evaluation Scale (ACES). The most common treatment emergent adverse events (TEAEs) were somnolence (21.5%), dry mouth (5.9%), hypotension (5.3%), dizziness (4.9%), orthostatic hypotension (4.0%), oral hypoesthesia (3.8%), and headache (3.6%). Of 110 somnolence reports, 86% were mild and 14% moderate.

Conclusion: Dexmedetomidine sublingual film treated acute agitation associated with SCZ or BPD, with an onset of action as early as 10 minutes at 180 mcg and was well tolerated with somnolence the most common AE. Dexmedetomidine provides a novel mechanism of action, making it a potential addition to noninvasive treatments for acute agitation associated with schizophrenia or bipolar disorder.

549 | 911 Call Volumes During the COVID-19 Pandemic

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Background and Objectives:

Objective: To describe the impact of COVID-19 pandemic on the number of emergency medicine services (EMS) calls in the state of Virginia.

Background: On March 12, a state of emergency was issued for the commonwealth of Virginia with a 'stay at home' order issued on March 30th. As a result, significant changes in healthcare utilization was observed including decreased emergency department visits. We investigate the effects of the COVID-19 pandemic on 9-1-1 EMS call volumes.

Methods: Analysis of the number of 9-1-1 EMS calls during February 1 2020 to December 31 compared with the same time frame in 2019 for STEMI, chest pain, and cardiac arrests. Two-way ANOVA analysis was utilized.

Results: Total 9-1-1- EMS calls were 1,228,615 vs 1,164,399 p = 0.001). Cardiac arrests increased 19.5% during this time period (39,685 vs 33,184, p = 0.008). Calls for chest pain decreased 16.8% (46,045 vs 55,384, p = 0.008) and STEMIs increased 5.9% (2,575 vs 2,736, p = 0.018). In comparing months between 2020 and 2019, 9-1-1 EMS calls were decreased for stroke March, April and May, whereas calls for chest pain were decreased every month from March through December. Cardiac arrests were increased every month in 2020 compared to 2019 from April to December.

Conclusion: COVID-19 9-1-1- calls decreased during the 2020 timeframe compared with 2019. In particular, calls for chest pain calls had decreased while cardiac arrests and STEMIs increased. Further research investigating why the change in 9-1-1 EMS calls are needed.

550 | Accuracy of Medical Student Measurement of Right Ventricular Strain on Computed Tomography for Pulmonary Embolism

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Background and Objectives: Acute pulmonary embolism (PE) is a common disease with varying presentations, necessitating risk stratification to determine management. Measurement of right ventricle (RV) to left ventricle (LV) ratio >1 on computed tomography pulmonary angiogram (CTPA) suggests RV strain, which may indicate a worse prognosis. Two prior studies showed that residents with brief

training by a radiologist could accurately measure RV/LV ratio on CTPA. In this study, we assessed whether medical students could accurately measure RV dilatation on CTPA.

Methods: We conducted a post hoc analysis of a retrospective cohort study of adults undergoing management for acute PE at 21 community Emergency Departments across Kaiser Permanente Northern California (KPNC) from 2013 to 2015. We created a sample of 120 patients from the original 2,387 patients, stratified to contain an equal number of patients from each of the five Pulmonary Embolism Severity Index classes. The sample had a proportional ratio of home/short stay to hospitalized patients. Four medical students measured RV and LV diameter on CTPA after a series of brief training sessions from an emergency medicine physician and an interventional radiologist. We used Cohen's kappa statistics, Bland-Altman plots, and Spearman's rank correlation to assess interrater reliability, comparing the student measurements with those of the radiologist.

Results: Of the 120 CTPAs, 108 images were accessible and constitute the study cohort. Among the 108 CTPAs, 79 (73%) showed RV dilatation and 29 (27%) did not. The kappa statistic for the presence of RV dilatation of the medical students compared to the radiologist showed moderate agreement for three medical students (kappa (95% CI): 0.46 (0.21-0.70), 0.49 (0.31-0.68), 0.50 (0.32-0.68)) and fair agreement for one medical student (kappa (95% CI): 0.29 (0.10-0.47)). The average interrater differences in RV/LV ratios (SD) between the four medical students were -0.04 (0.19), -0.05 (0.26), 0.04 (0.29), and 0.24 (0.26). Spearman's rank correlation coefficients were 0.76, 0.75, 0.68, and 0.70, respectively, indicating moderate correlation ($p < 0.001$ for all).

Conclusion: With brief training, medical students were able to identify RV dilatation on CTPA in moderate agreement with that of a radiologist. Further study is needed to determine whether medical student accuracy could improve with additional training.

551 | Barriers and Facilitators to the Outpatient Management of Pulmonary Embolism: A Qualitative Study

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Background and Objectives: Studies estimate that 30-50% of patients diagnosed with acute pulmonary embolism (PE) may be eligible for outpatient management; however, less than 5% of patients are discharged from US emergency departments (EDs). As the proportion of patients varies substantially by hospital, we sought to explore the barriers and facilitators to the outpatient management of PE

Methods: In this qualitative study, we recruited a purposeful sample of ED physicians using maximum variation sampling to include those who routinely discharge >15% of PEs and those who rarely, if ever, discharge patients with PE. We conducted semi-structured interviews, which were recorded and transcribed. We asked about management of acute low-risk PE and barriers and facilitators to the outpatient management. Using a directed qualitative content analysis approach, 2 members of the research team performed blinded coding of the transcripts in an iterative process, with an initial codebook developed based on the Consolidated Framework for Implementation Research.

Results: We interviewed 22 ED physicians from 10 institutions across the US. Participants universally noted follow-up and lack of insurance as major barriers to outpatient management. However, participants working in the same setting reported a variable influence of these outer setting barriers on their ability to discharge patients with low-risk PE. Individual-level factors, particularly belief about the value of hospitalization and knowledge of the safety data of outpatient PE management, were also noted as important. Participants unanimously reported that institutional support in the form of a protocol would facilitate outpatient management through the establishment of a local standard of care and increase self-efficacy.

Conclusion: Individual and institutional-level factors may serve as important targets for implementation strategies for outpatient management of PE. Future efforts to promote outpatient management of low-risk PE should be informed by these barriers and facilitators.

552 | ASTHMAXcel ED: An Easily Adopted Mobile Platform to Improve Health Literacy After Emergency Department Discharge

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Background and Objectives: Poor health literacy and care transitions worsen asthma burden in the United States. The ASTHMAXcel mobile platform had high patient satisfaction and improved asthma knowledge, quality of life, and asthma control in clinic patients. An Emergency Department (ED) version intended for self-guided learning after discharge emphasizes medication and environmental best practices. This study aims to show high acceptance of ASTHMAXcel ED in discharged ED patients.

Methods: This prospective, open label, mixed methods study was conducted in two large urban Bronx, NY ED's. Inclusion criteria were age ≥18 years, English literacy, smartphone access, and discharge with asthma exacerbation. ASTHMAXcel ED was downloaded onto participant cell phones. User acceptance was measured with a Unified Theory of Acceptance and Use of Technology (UTAUT) questionnaire administered 4 weeks after discharge, with agree/neutral/disagree responses. UTAUT addresses Behavioral Intentions or future intention to use (BI), Performance Expectancy or perceived usefulness (PE), Effort Expectancy or ease of use (EE), Social Influences (SI), and availability of necessary infrastructure or Facilitating Conditions (FC). The association of PE, EE, SI, and FC with BI was measured with Spearman's correlation. Open-ended user feedback was thematically coded.