Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

efficacy and a comparable safety profile between two drugs in managing acute pain in the ED. Commonly employed dosing regimens of SDK in the ED are a weight-based dose of 0.1-0.3mg/kg that can be administered via an IV push over 2-5 minutes or short infusion given over 15 minutes; a fixed dose of 15-30mg given intravenously over 15 minutes; and a continuous infusion with a starting dose of 0.1-0.15mg/kg/hr. The use of SDK for managing a variety of acute painful conditions in the ED has been endorsed by the American College of Emergency Medicine and American Academy of Emergency Medicine.

Methods: A prospective, randomized, double-blinded trial comparing three doses of nebulized ketamine (0.75mg/kg, 1mg/kg and 1.5mg/kg) administered via BAN, in adult ED patients aged 18 years and older with moderate to severe acute and chronic pain. Primary outcome included the difference in pain scores between all three groups at 30 minutes. Secondary outcomes included a need for a second or third dose of ketamine, need for rescue analgesia, and AE's in each group at 30 and 60 minutes.

Results: We enrolled 120 subjects (40 per group). Difference in mean pain scores at 30 minutes between the 0.75mg/kg and 1mg/kg groups was 0.25 (95% CI: -1.28 to 1.78), between the 1mg/kg and 1.5mg/kg groups was - 0.225 (95% CI: -1.76 to 1.31), and between the 0.75mg/kg and 1.5mg/kg groups was 0.025 (95% CI: -1.51 to 1.56). No clinically concerning changes in vital signs were observed. No serious AEs occurred in any of the groups.

Conclusion: Nebulized ketamine administered at the 1.5mg/kg dose via breath-actuated nebulizer did not provide superior analgesia to nebulized ketamine at the 0.75mg/kg and the 1mg/kg for short-term treatment of moderate to severe pain in the ED and resulted in slightly higher rates of dizziness and fatigue.

196 The Impact of COVID-19 on the Specificity of D-Dimer for Pulmonary Embolism

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Study Objective: D-dimer utility in diagnosing pulmonary embolism (PE) in the setting of COVID-19 has not been clearly established. Patients presenting with COVID-19 are screened for disease severity with d-dimer. The primary outcome of this study was to evaluate the test characteristics of d-dimer assay for the exclusion of PE in patients with COVID-19 in both the academic and community setting.

Methods: This is a multi-center retrospective study within 5 urban and suburban emergency departments (EDs) in the same healthcare system. The radiology database was queried for all computed tomography for pulmonary embolism (CTPE) studies between December 1, 2019 and October 22, 2020. All ED patients who underwent CT PE, had d-dimer and COVID-19 testing ordered in a single encounter were included in the study. Primary outcome of d-dimer results, CTPE and COVID-19 results were obtained along with sensitivity and specificity of both d-dimer assays in predicting PE in this cohort.

Results: There were 1146 patient encounters that comprised our study cohort, which was then split into two groups based on the assay reporting method. For all comers, traditional d-dimer cut-offs missed 2 pulmonary embolisms resulting in an overall sensitivity of 98.18% (95% CI 93.59% - 99.78%) and a specificity of 13% (95% CI 11.89% - 16.18%). Using the laboratory designated cut-off (0.50 FEU) for assay 1, the sensitivity and specificity for COVID-19 patients were 100% and 14.8%. For Assay 2, the sensitivity and specificity for the assay were 100% and 6.1% for patients with COVID-19. Raising cutoff values to 0.67 FEU and 662 DDU respectively maintained perfect sensitivity while improving specificity to 28.91% (95% CI 21.24% to 37.58%) for Assay 1 and 58.54% (95% CI 47.12% - 69.32%) for Assay 2.

Conclusion: Results from this study support that d-dimer at baseline cutoffs can reliably exclude PE in the setting of Covid-19. Furthermore, our results suggest that in this subpopulation, the threshold for a positive may be raised substantially for an increase in specificity without sacrificing sensitivity. Future studies should focus on improving the specificity of d-dimer assays via prospective testing of cutoff thresholds in patients with Covid- 19.

197 Emergency Medicine Development Around the World: An Analysis of 2019 American College of Emergency Physicians International Ambassador Country Reports

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Study Objective: Emergency medicine (EM) is in different stages of development around the world, with many countries not yet formally recognizing the specialty. The American College of Emergency Physicians (ACEP) International Ambassador Program is composed of emergency physicians who represent ACEP and connect with local EM societies and EM pioneers, practitioners, and educators in 78 countries to promote emergency medicine development.

Our objective was to describe the current state of EM around the world by analyzing 63 Country Report survey responses submitted by the ACEP Ambassadors in 2019.

Methods: The 2019 Country Report survey was developed by ACEP Ambassador Program leadership with input from the ACEP Ambassadors. The survey consisted of 40 questions about EM as a specialty, the history of EM, EM residencies, out-of-hospital care, EM academic activities, and challenges and opportunities for growth in EM. ACEP Ambassadors answered questions based on their experience working in their respective countries with assistance from local partners. Maps of the world were created to display categorical variables. Qualitative data was analyzed for themes. Percentages were calculated and variables were categorized by World Bank regions and income categories. Chi-square was used to look for association between country income and recognition of EM as a specialty.

Results: The populations of the 63 countries in this study totaled 5.19 billion or about 67% of the world's population. The sample included countries in each of the World Health Organization Regions. Of the countries represented, 7.9% are low income, 24% lower middle income, 33.3% upper middle income and 35% high income. Country income was not associated with recognition of EM as a specialty ($p = 0.29$). The number of residency-trained emergency physicians per 100,000 people was >5 in 6 countries (9.5%), 2 to 5 in 12 countries (19%), and <2 in 37 countries (59%). Nine countries (14.5%) do not recognize EM as a specialty (3 high, 1 high middle and 5 low middle-income). Six countries (9.5%) do not have a out-of-hospital system. Eleven countries (17.5%) do not have an emergency phone number (eg, 911). A majority of countries had fewer than 10 EM residency programs (55%), and 16% had none. Thirty countries (48%) have EM board exams. Eighteen countries (29%) have an EM-specific peer-reviewed journal. Common challenges reported in EM development included: lack of resources and/or funding (53%), lack of EM recognition or resistance to the specialty (47%), the need for more educational and faculty organization (29%), and physician shortages (23%).

Conclusions: Within the constraints of a survey study, the ACEP Ambassador Country Report survey provides unique information about the state of EM development around the world. Most countries in the sample have recognized EM or have EM residencies. However, EM is still in the early stages of development in many countries, with few emergency physicians per 100,000 population and few having board exams or EM peer-reviewed journals. Future research can track the growth of EM over time and help promote collaborations across countries.

198 Neuropsychiatric Effects of Cannabis Toxicity in the Emergency Department: A Community-Based Study

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Study Objective: The state law to legalize recreational use of marijuana in Michigan went into effect in December 2018. Increased availability and use of cannabis in Michigan have led to a marked increase in emergency department (ED) visits associated with the drug's neuropsychiatric effects. Our purpose was to describe the prevalence, clinical features, and disposition of cannabis neuropsychiatric toxicity in a community-based study.