**Table S1**: Frequency of different albuterol dosing and ACS stratified by study year

|  |  |  |
| --- | --- | --- |
|  | Albuterol 10 mg/hr | Albuterol 25 mg/hr |
| Study Year | Number of Patients | ACS1 | Number of Patients | ACS1 |
| 2011 | 1 | 5 (5,5) | 222 | 6 (5,7) |
| 2012 | 92 | 6 (4,7) | 57 | 6 (5,7) |
| 2013 | 249 | 6 (5,8) | 11 | 7 (5,8) |

1Expressed as median (interquartile range)

**Table S2**: Frequency of adjunctive therapies between albuterol dosing stratified by study year. All results expressed as n (%) except as noted, where n is the number of subjects during the specific year and the percent is calculated as the percentage of all patients for a specific year receiving the specific albuterol dosage.

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2011 | 2012 | 2013 |
|  | 10 mg/hr | 25 mg/hr | 10 mg/hr | 25 mg/hr | 10 mg/hr | 25 mg/hr |
| Magnesium | 1 (100) | 147 (66.2) | 61 (66.3) | 36 (63.2) | 194 (77.9) | 8 (72.7) |
| Aminophylline | 0 (0) | 9 (4.1) | 1 (1.1) | 3 (5.3) | 5 (2.0) | 0 (0) |
| Ketamine | 0 (0) | 18 (8.1) | 3 (3.3) | 10 (17.5) | 23 (9.2) | 1 (9.1) |
| NIV | 1 (100) | 125 (56.3) | 53 (57.6) | 31 (54.4) | 146 (58.6) | 6 (54.5) |
| Ventilator | 0 (0) | 5 (2.3) | 1 (1.1) | 3 (5.3) | 7 (2.8) | 1 (9.1) |
| Total Adjuncts1 | 2 (2,2) | 1 (1,2) | 1 (1,2) | 1 (0.5,2) | 1 (1,2) | 2 (1,2) |

1Results expressed as median (interquartile range)

**Table S3**: Comparison of fluid bolus volume in mL/kg between albuterol dosing stratified by number of adjunctive therapies. Data are expressed as marginal means (95% CI), which were calculated from the gamma regression model for bolus volume. Patients receiving > 3 adjuncts excluded due to low numbers

|  |  |  |  |
| --- | --- | --- | --- |
| Number of adjuncts | 10 mg/hr | 25 mg/hr | P value |
| 0 | 33.92 | 36.17 | 0.648 |
| (26.64,43.19) | (29.45,44.42) |
| 1 | 38.30 | 45.02 | 0.036 |
| (33.04,44.41) | (38.61,52.49) |
| 2 | 44.55 | 52.61 | 0.038 |
| (38.66,51.35) | (44.92,61.62) |
| 3 | 48.96 | 72.60 | 0.053 |
| (36.19,66.24) | (53.46,98.59) |

**Figure S1**: Asthma clinical score (ACS) details (locally adapted from the Modified Pulmonary Index Score (Ref. 10: Carroll et al, *Ann Allergy Asthma Immunol*, 2005)



**Figure S2**: PICU asthma therapy escalation guideline utilized throughout the study period

