



# Managing Acute Severe Asthma in PICU

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# Acute severe asthma

- Severe acute asthma exacerbation
- Status asthmaticus
- Life threatening asthma (Near fatal asthma)

# Near fatal asthma (Life threatening asthma)

- Acute asthma associated with respiratory failure (hypercapnia) or respiratory arrest requiring mechanical ventilation with or without alteration of consciousness

*Respir Care 2008;53:726*

*EMA 2009; 21: 259*

*Curr Opin Pulm Med 2008; 14: 13*

## Characteristics of near-fatal asthma in children: descriptive study (30 cases <15 yrs.)

- **Male gender (58%)**
- **History of severe persistent asthma (83%)**
- **Waking every night (50%)**
- **Significant exercise limitation (79%)**
- **Previous ICU admission (23%)**
- **Hospital admission in the last 12 months (70%)**
- **Excessive use of  $\beta_2$  agonist without prophylaxis medication (21%)**

## Characteristics identifying patients at particular risk for life threatening asthma

- Infants < 1 yr. old
- Prior history of life-threatening exacerbation
- *Less than 10% improvement in PEF in the ER*
- *PEF or FEV<sub>1</sub> < 25% of predicted value*
- *PCO<sub>2</sub> > 40 mmHg*
- *Wide daily fluctuations in PEF*
- Patient cannot recognize airflow obstruction

*Chipps BE, et al. J Pediatr 2005 : 228*