Improving Asthma Care in the Hospital: an Overview of Treatments and Quality Improvement Interventions for Children Hospitalized for Status Asthmaticus

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OPINION STATEMENT: Asthma is one of the leading causes of pediatric hospitalization in the USA. This review summarizes evidence-based practices for inpatient pediatric asthma treatment, including routine care, care escalation, and discharge care, along with established and emerging inpatient quality improvement approaches. Intermittent inhaled beta agonists, systemic steroids, and, for patients with low oxygen saturation, supplemental oxygen remain the cornerstones of routine inpatient asthma care. Compared to nebulization, metered-dose inhaler delivery of intermittent beta agonist therapy is more effective and underused. Oral prednisone produces similar clinical outcomes and is more cost-effective when compared with intravenous methylprednisolone. Standardized respiratory assessment scores should supplement clinical judgment in evaluating response to therapy. There are no studies that demonstrate the effectiveness of routine adjuvant anticholinergic therapy outside of the emergency room, though it may be effective in a subset of inpatients. Evidence for inpatient care escalation is limited. With respect to discharge care, simple provision of asthma care plans does not appear to reduce readmissions, though individually tailored asthma care plans remain a standard of discharge care, along with systemic steroids, beta agonists, and, when indicated, inhaled corticosteroids. To avoid medication access barriers for high-risk patients, clinicians can ensure that discharge medications are in-hand before the patient leaves the hospital. A number of quality improvement strategies have shown promise in the inpatient setting. Clinical pathways reduce length of stay and costs associated with care without an associated increase in readmissions. Inpatient family education programs can be effective but should incorporate multiple strategies, including individualized management strategies and post-discharge follow-up. Inpatient care also serves as a useful opportunity to assess home environmental risk and to refer high-risk families to outpatient and community resources.

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