Controller Adherence Following Hospital Discharge in High Risk Children: A Pilot Randomized Trial of Text Message Reminders

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OBJECTIVE: To assess the feasibility of a mobile health, inhaled corticosteroid (ICS) adherence reminder intervention and to characterize adherence trajectories immediately following severe asthma exacerbation in high-risk urban children with persistent asthma. METHODS: Children aged 2–13 with persistent asthma were enrolled in this pilot randomized controlled trial during an asthma emergency department (ED) visit or hospitalization. Intervention arm participants received daily text message reminders for 30 days, and both arms received electronic sensors to measure ICS use. Primary outcomes were feasibility of sensor use and text message acceptability. Secondary outcomes included adherence to prescribed ICS regimen and 30-day adherence trajectories. Group-based trajectory modeling was used to examine adherence trajectories. RESULTS: Forty-one participants (mean age 5.9) were randomized to intervention (n = 21) or control (n = 20). Overall, 85% were Black, 88% had public insurance, and 51% of the caregivers had a high school education or less. Thirty-two participant families (78%) transmitted medication adherence data; of caregivers who completed the acceptability survey, 25 (96%) chose to receive daily reminders beyond that study interval. Secondary outcome analyses demonstrated similar average daily adherence between groups (intervention = 36%; control = 32%, P = 0.73). Three adherence trajectories were identified with none ever exceeding 80% adherence. CONCLUSIONS: Within a high-risk pediatric cohort, electronic monitoring of ICS use and adherence reminders delivered via text message were feasible for most participants, but there was no signal of effect. Adherence trajectories following severe exacerbation were suboptimal, demonstrating an important opportunity for asthma care improvement.

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