Does adherence to inhaled corticosteroids predict asthma-related outcomes over time? A cohort study

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Cohort study in routine care finds large variability in asthma outcomes over time. Patients with higher mean ICS adherence report better asthma control. ICS adherence and reliever use tend to increase at the same time and reduce use of relievers later on. http://bit.ly/2kK1bbv


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ABSTRACT Inhaled corticosteroids (ICS) adherence is important for asthma management. Current evidence on the impact of ICS adherence on outcomes is mostly based on correlational analyses of between-person data. Although it is widely acknowledged that asthma outcomes fluctuate over time, evidence on predictors of within-person change is scarce. We aimed to quantify these fluctuations and the longitudinal relationships between ICS adherence and outcomes at both between- and within-person levels.

A prospective cohort of persistent asthma patients in France and the UK (n=847, age 6–40 years) provided 3756 reports over up to 2 years via computer-assisted telephone interviews and text messages on ICS adherence, asthma control, reliever medication use and exacerbations. We examined adherence–outcome relationships via longitudinal models, controlling for confounders, including severity.

Considerable within-person variability was found for exacerbations (91%), asthma control (59%) and reliever use (52%); 431 (11.5%) reports signalled exacerbations and 2046 (54.5%) poor control. At between-person level, patients with higher average adherence were more likely to report asthma control (OR 1.25, 95% CI 1.06–1.47), but not asthma exacerbations (OR 0.99, 95% CI 0.87–1.12) or lower reliever use (b = –0.0004, 95% CI = –0.089–0.088). At within-person level, higher-than-usual adherence was associated with higher concomitant reliever use (b = 0.092, 95% CI 0.053–0.131) and lower subsequent reliever use (b = –0.047, 95% CI = –0.005– –0.088); it was unrelated to asthma control (OR 0.93, 95% CI 0.84–1.02) or exacerbations (OR 1.04, 95% CI 0.94–1.16).

Patients maintaining high ICS adherence over time have better asthma control. Temporarily increasing ICS adherence tends to be simultaneous to higher reliever use and reduces reliever use later on. Causes of within-person variation in outcomes require more investigation.

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