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Overuse of short-acting β_2 -agonists in asthma is associated with increased risk of exacerbation and mortality: a nationwide cohort study of the global SABINA programme

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One-third of asthma patients in Sweden were SABA overusers (three or more canisters per year), of whom 28% had no collection of anti-inflammatory drugs. Higher SABA use was associated with increased exacerbation and mortality risks. <http://bit.ly/2PqQSKn>

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ABSTRACT

Background: Overuse of short-acting β_2 -agonists (SABA) may indicate poor asthma control and adverse health outcomes. Contemporary population-based data on use, risk factors and impact of SABA (over)use on asthma exacerbations and mortality are scarce, prompting initiation of the global SABINA (SABA use IN Asthma) programme.

Methods: By linking data from Swedish national registries, asthma patients aged 12–45 years with two or more collections of drugs for obstructive lung disease during 2006–2014 were included. SABA overuse was defined as collection of more than two SABA canisters in a 1-year baseline period following inclusion. SABA use was grouped into 3–5, 6–10 and ≥ 11 canisters per baseline-year. Cox regression was used to examine associations between SABA use and exacerbation (hospitalisations and/or oral corticosteroid claims) and mortality.

Results: The analysis included 365 324 asthma patients (mean age 27.6 years; 55% female); average follow-up was 85.4 months. 30% overused SABA, with 21% collecting 3–5 canisters per year, 7% collecting 6–10 canisters per year and 2% collecting ≥ 11 canisters per year. Increasing number of collected SABA canisters was associated with increased risk of exacerbation, as follows. 3–5 canisters: hazard ratio (HR) 1.26 (95% CI 1.24–1.28); 6–10 canisters: 1.44 (1.41–1.46); and ≥ 11 canisters: 1.77 (1.72–1.83), compared to two or fewer canisters per year. Higher SABA use was associated with incrementally increased mortality risk (2564 deaths observed), as follows. 3–5 canisters: HR 1.26 (95% CI 1.14–1.39); 6–10 canisters 1.67 (1.49–

1.87); and ≥ 11 canisters: 2.35 (2.02–2.72) compared to two or fewer canisters per year.

Conclusion: One-third of asthma patients in Sweden collected three or more SABA canisters annually. SABA overuse was associated with increased risks of exacerbation and mortality. These findings emphasise that monitoring of SABA usage should be key in improving asthma management.