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Title: Impact of adherence to fluticasone propionate/salmeterol combination (FSC) therapy on the outcomes of patients with asthma: A population based study

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Body: Background: Low adherence to medications is considered a major barrier to achieving optimal management of asthma. Objective: To assess the association between adherence to treatment with FSC and health care resource utilization (HCRU) in patients with asthma. Methods: A retrospective, observational cohort study utilizing pharmaceutical and medical claims from the Quebec provincial health insurance administrative databases of patients (age ≥ 12 years) with a diagnosis of asthma (ICD-9 493.xx) and ≥ 1 prescription for FSC dispensed from 1/1/2001 to 12/31/2010. Adherence to treatment was ascertained as compliance (medication possession ratio $\geq 80\%$) and persistence (no absence of treatment gap ≥ 30 days). Asthma-related outcomes of interest include: use of oral corticosteroid (OCS), ER visit, hospitalizations, ICU stay, GP and respirologist visits. Multivariate logistic regression analyses (MLRA) were used to adjust baseline characteristics. Results: 19,486 patients treated with FSC: mean age was 63 year. The proportion of compliant and persistent patients was 42.7% and 29.3% respectively. MLRA showed that compliant patients had significant reduction in adjusted Odds Ratio (95% CI) of exacerbations [0.48 (0.44, 0.54)], OCS use [0.46 (0.42, 0.52)], ER visits [0.48 (0.36, 0.64)], hospitalizations [0.49 (0.42, 0.57)], ICU admission [0.62 (0.39, 0.98)], respirologist visit [0.88 (0.79, 0.99)] and GP visit [0.63 (0.56, 0.71)]. Similar results were observed for persistent patients. Conclusion: The results show that high compliance and high persistence with FSC were associated with decrease risk of exacerbations and lower HCRU in asthma patients.