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Title: Impact of omalizumab treatment persistence on asthma control

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Body: Omalizumab is indicated for moderate to severe allergic asthma patients with inadequately controlled symptoms. The purpose of the current study was to evaluate the impact of omalizumab treatment persistence on asthma control. Health insurance claims from the MarketScan database (2002Q1-2011Q2) were analyzed. Asthma patients with $\geq$12 months of continuous insurance coverage after the first omalizumab claim (index date) following 6 months of continuous omalizumab use were included. A 12-month landmark period following the index date was used to assess treatment persistence, defined as uninterrupted treatment without a gap of $\geq$28 days in omalizumab use. The impact of persistence with omalizumab treatment on asthma-related emergency-department (ED) visits and hospitalizations occurring between months 13 and 24 was evaluated. Multivariate time-varying Cox regressions were also conducted to assess the adjusted impact of treatment interruption (lack of persistence) on asthma control from month 1 to month 24. In total, 3044 patients (mean age: 48.5; female: 62.4%) formed the study population. Persistence with omalizumab treatment at 12 months (39% of patients) was associated with a 51% reduction in the mean [SD] number of ED visits per patient (persistence vs. non-persistence: 0.064 [0.3] vs. 0.129 [0.5], P<.001) and a 28% reduction in hospitalizations (0.131 [0.4] vs 0.182 [0.6], respectively, P=0.034). Multivariate analyses corroborated these findings (HR [95% CI] for persistence vs. non-persistence: risk of ED visit: 0.63 [0.55-0.73], P<.001; risk of hospitalization: 0.69 [0.61-0.79], P<.001). This analysis showed that omalizumab treatment persistence was associated with significant reductions in ED visits and hospitalizations.