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Abstract

Effect of antibiotic exposure on Stevens-Johnson Syndrome (SJS) and Toxic Epidermal Necrolysis (TEN)

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Background
Antibiotics are commonly implicated in Stevens-Johnson syndrome (SJS), overlap syndrome (SJS-TEN), and Toxic Epidermal Necrolysis (TEN), rare disorders of skin and mucosal membranes, often the result of adverse drug reactions. The objective of this study is to examine associations between SJS, SJS-TEN, and TEN and antibiotic exposure overlapping diagnosis, and 3, 6, and 12 months before diagnosis.

Methods
A case-control study was conducted using PharMetrics LifeLink® Health Plan Claims Database (2001-2013). Cases had ≥1 diagnoses of SJS/TEN identified using ICD-9 codes, and ≥1 year of continuous health plan enrollment before earliest diagnosis. Controls were randomly selected from patients with no diagnoses of SJS/TEN, and matched to cases 4:1 on age, gender, and amount of continuous health plan enrollment. Multivariate logistic regression was used to estimate odds ratios for varying antibiotic exposures.

Results
192 cases and 768 controls were included. Odds of an antibiotic fill overlapping diagnosis was ten times higher for cases than controls (OR=10.4; 95% CI 5.1, 21.1). Most common antibiotics overlapping diagnosis were aminopenicillins and cephalosporins, however associations between specific antibiotics and SJS/TEN were not significant (OR=1.03; 95% CI 0.6, 1.9). Unadjusted ORs for 3 (OR=1.05; 95% CI 1.03-1.07), 6 (OR=1.03; 95% CI 1.02, 1.04), and 12 months (OR=1.02; 95% CI 1.01, 1.02) before diagnosis show lower associations further in the past between antibiotics and reaction.

Conclusions
A significant association was found between overlapping antibiotic exposure and SJS/TEN. Likely due to small sample sizes, associations between specific antibiotic classes and SJS/TEN were not significant; further studies should be pursued to examine specific antibiotics.