SUNDAY

320 Thiazolidinediones Improve Asthma Control In Diabetic Asthmatics

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RATIONALE: Thiazolidinediones (TZD) have potent anti-inflammatory actions and improve airway inflammation in murine models of allergic inflammation. The impact of TZD on human asthma is not well known. The purpose of this study was to investigate the influence of TZD on asthma severity and morbidity in a large well characterized human population.

METHODS: Diabetic asthmatic subjects ≥18 years old were identified in the Kaiser Permanente database. A case-control analysis was performed using cases defined by either short acting beta agonist canister dispensing >6 (SABA>6) or history of emergency department visits or hospitalizations (EDHO). Controls were matched by age, sex, baseline severity, asthma controller therapy and co-morbidities. Subjects were categorized based on prescriptions for statins (ST) or TZD. Univariate and multivariate logistic regression was applied to estimate the odds ratios (OR) and confidence interval for SABA>6 or EDHO associated with the different medication prescriptions. Hypertension, reflux, and BMI were analyzed as covariates.

RESULTS: 21,704 subjects were included in the analysis. No statistically significant effects were seen in patients receiving TZD alone or ST alone by multivariate analysis. Subjects receiving ST alone had an increased OR of SABA>6 by univariate analysis. Subjects taking both TZD plus ST showed a significant reduction in SABA>6 and ERHO in both the univariate [SABA>6 OR 0.87 (0.76,0.996); ERHO OR 0.80 (0.69,0.93)] and multivariate [SABA>6 OR 0.85 (0.74,0.98); ERHO OR 0.76 (0.65,0.89)] analyses.

CONCLUSIONS: Some measures of asthma control in diabetic asthmatic subjects on statin therapy may be favorably influenced by concurrent use of TZD.

321 Mometasone Furoate/Formoterol Combination Therapy Increases Frequency of Days/Nights Free of Short-Acting β_2-Agonist Use

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RATIONALE: An important asthma therapy goal is to limit short-acting β_2-agonist (SABA) rescue medication use. We evaluated the effect of mometasone furoate/formoterol (MF/F) combination therapy on SABA use with data from 3 phase III studies.

METHODS: All studies enrolled subjects (≥12y) with persistent asthma not well controlled on inhaled corticosteroids (ICS): study P04073 (n=746 subjects with moderate persistent asthma randomized to 26wk MF/F-100/10μg, MF-100μg, F-10μg, or placebo twice daily [BID]); study P04334 (n=781 subjects with moderate persistent asthma randomized to 26wk MF/F-200/10μg, MF-200μg, F-10μg, or placebo BID); study P04431 (n=728 subjects with severe persistent asthma randomized to 12wk MF/F-400/10μg, MF/F-200/10μg, or MF-400μg BID). All studies included a 2−3wk MF BID run-in: P04073(100μg), P04334(200μg), P04431(400μg). Percentage of SABA-free days/nights was a predefined secondary endpoint in all studies.

RESULTS: In P04073, mean change in the percentage of SABA-free days/nights from baseline period (day -7 to 1) to overall treatment period was significantly increased for MF/F-100/10μg (18%) vs F-10μg (10%) and placebo (0% $P \leq 0.003$), and numerically increased for MF/F-100/10μg vs MF-100μg (14%). In P04334, change in SABA-free days/nights was significantly increased for MF/F-200/10μg (21%) vs MF-200μg (15%), F-10μg (11%), and placebo (5%; $P \leq 0.033$). In P04431, change in SABA-free days/nights was significantly increased for MF/F-400/10μg and MF/F-200/10μg groups (25% increase for each) vs the MF-400μg group (13%; $P<0.001$).

CONCLUSION: MF/F treatment resulted in significant improvement in the frequency of SABA-free days/nights vs individual MF and/or F monotherapies in subjects with persistent asthma not well controlled on ICS therapy.

322 Reduction in Asthma Deteriorations in Subjects With Persistent Asthma Uncontrolled on Low-, Medium-, or High-Dose Inhaled Corticosteroids: A Pooled Analysis From Three Clinical Trials Using Combined Mometasone Furoate/Formoterol

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RATIONALE: We present a post hoc analysis from 3 phase III clinical trials (P04073/P04334/P04431) examining the effects of mometasone furoate/formoterol (MF/F) combination therapy on asthma deterioration (ie, severe asthma exacerbation) in subjects previously uncontrolled on low-, medium-, or high-dose inhaled corticosteroids (ICS).

METHODS: A 2−3-week run-in period with twice daily (BID) MF-100μg (P04073), MF-200μg (P04334), or MF-400μg (P04431) was performed before subject (≥12y) randomization to BID: MF/F-100/10μg, MF-100μg, F-10μg, or placebo for 26weeks (n=746; P04073); MF/F-200/10μg, MF-200μg, F-10μg, or placebo for 26weeks (n=781; P04334); MF/F-200/10μg, MF/F-400/10μg, or MF-400μg for 12weeks (n=728; P04431). Assessment of asthma deterioration (ie, 20% decrease in forced expiratory volume in 1s [FEV_1]; 30% decrease in peak expiratory flow [PEF] on ≥2 consecutive days; or clinically judged deterioration [ie, emergency treatment, hospitalization, or treatment with excluded medications]) was a co-primary endpoint for studies P04073/P04334, and a secondary endpoint for study P04431. Post hoc pair-wise comparisons of pooled MF/F vs MF, F, and placebo treatment groups were performed.

RESULTS: Sample sizes in this pooled analysis were: MF/F, n=861; MF, n=620; F, n=390; placebo, n=384. There was a significantly lower incidence of asthma deterioration with MF/F=17.2% vs MF=26.1% ($P=0.002$), F=49.5% ($P<0.001$), and placebo=50.8% ($P<0.001$). Incidence rates for asthma deterioration subtypes were: FEV_1 reduction: MF/F=7.0%, MF=10.0%, F=13.8%, placebo=17.7%; PEF reduction: MF/F=7.5%, MF=12.6%, F=27.2%, placebo=26.3%; clinically judged deterioration: MF/F=2.1%, MF=2.6%, F=6.7%, placebo=5.2%.

CONCLUSIONS: MF/F-treated subjects experienced a significantly lower rate of asthma deterioration compared with MF, F, and placebo in subjects previously uncontrolled on low-, medium-, or high-dose ICS in this pooled analysis.