FLUTICASONE PROPIONATE (FP) AND FLUTICASONE/SALMETEROL (FS) MULTIDOSE DRY POWDER INHALERS (MDPI) COMPARED WITH PLACEBO FOR PERSISTENT ASTHMA

Lawrence Sher, MD; Gloria Yiu, MS; Anat Sakov, PhD; Siyu Liu, MD, PhD; Calvin J. Small, MD, MS

1Peninsula Research Associates, Rolling Hills Estates, CA, USA; 2Teva Pharmaceuticals, Malvern, PA, USA; 3Teva Pharmaceuticals, Netanya, Israel; 4Teva Pharmaceuticals, Horsham, PA, USA

Background: The present study evaluated FP, an inhaled corticosteroid (ICS), and FS, a combination ICS and long-acting beta-agonist (LABA), delivered via a novel, inhalation-driven MDPI that does not require coordination of actuation with inhalation and is easy for patients with asthma to use correctly. Methods: This phase 3, multicenter, double-blind, parallel group study (FSS-AS-30017; NCT02141854) included patients (aged ≥12 years) with asthma previously taking ICS or ICS/LABA (FP dry powder inhaler >200 mcg/day or equivalent for ≥1 month). After a 14- to 21-day run-in period during which patients received albuterol/salbutamol hydrofluoroalkane metered-dose inhaler as their rescue medication and single-blind FP MDPI 50 mcg, 1 inhalation twice daily (BID), patients randomly received FP MDPI 100 mcg, FP MDPI 200 mcg, FS MDPI 100 mcg/12.5 mcg, FS MDPI 200 mcg/12.5 mcg, or placebo BID for 12 weeks. Change from baseline in forced expiratory volume in 1 second (FEV1) and serial spirometry at week 12 were the primary efficacy endpoints. Adverse events were monitored. Results: Change from baseline in FEV1 in the full analysis set (n=720) and the serial spirometry subset (n=312) FEV1 area under the curve from time 0 to 12 hours was significantly greater for all active treatment groups versus placebo at 12 weeks (p<0.05; Figure). FS MDPI significantly improved FEV1 from baseline at each dose vs the corresponding FP MDPI doses (p<0.05). Over the 12-week study, improvements were maintained from day 1 through week 12. FS MDPI and FP MDPI were safe and well tolerated. Conclusion: FP MDPI and FS MDPI provided significant bronchodilation to patients with persistent asthma. All doses were well tolerated.

Funding: Supported by Teva Pharmaceuticals.
Figure. Mean Change in FEV$_1$ From Baseline Trough at Week 12 by Time Point and Treatment Group (Serial Spirometry Subset of Full Analysis Set)

- Fp MDPI 100 mcg BID (n=56)
- Fp MDPI 200 mcg BID (n=55)
- FS MDPI 100/12.5 mcg BID (n=57)
- FS MDPI 200/12.5 mcg BID (n=65)
- Placebo (n=41)

BID, twice daily; FEV$_1$, forced expiratory volume in 1 second; Fp MDPI, fluticasone propionate multidose dry powder inhaler; FS MDPI, fluticasone propionate/salmeterol multidose dry powder inhaler; mcg, microgram.