Effectiveness and safety of upadacitinib in adolescent and adult patients with atopic dermatitis: an interim analysis of week 20-32 data from a real-world multicenter retrospective review

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**Introduction:**
While clinical trial data demonstrates the efficacy and safety of upadacitinib (UPA), a selective oral Janus kinase inhibitor (JAKi) for atopic dermatitis (AD), there is still a lack of real-world evidence.

**Objectives:**
Our study evaluated the real-world effectiveness and safety of UPA for AD at weeks 20-32.

**Methods:**
We conducted a multicenter retrospective review at three practices in Canada. Effectiveness endpoints evaluated at weeks 20-32 included Investigator Global Assessment (IGA) score of clear or almost clear (IGA 0/1) as well as improvements in Eczema Area and Severity Index (EASI), body surface area (BSA), IGAxBSA, and Dermatology Life Quality Index (DLQI)/Children’s DLQI (CDLQI). Safety was determined via incidence of treatment-related adverse events (AEs).

**Results:**
A total of 131 patients were included in the analysis. Mean age was 44.3 ± 17.5 (range: 12-78) years; 53.4% (70/131) were female. UPA doses were 15 mg (43.5%, 57/131) or 30 mg (56.5%, 74/131) once daily. Previous treatments included: topical therapy (100%, 131/131), phototherapy (29%, 38/131), systemic non-biologic therapy (75.6%, 99/131), and systemic biologic/JAKi therapy (38.9%, 51/131).
At weeks 20-32: 85.5% (112/131) of patients achieved IGA 0/1; 84.3% (59/70), 75.7% (53/70), and 62.9% (44/70) of patients achieved EASI improvements of 75% (EASI75), 90% (EASI90), and 100% (EASI100), respectively; mean EASI was reduced from 12.7 to 0.7 (p=0.0001; mean EASI improvement = 88.8%); 94.3% (66/70), 92.9% (65/70), 90% (63/70), and 77.1% (54/70) of patients achieved absolute EASI scores ≤7, 5, ≤3, and ≤1, respectively; mean BSA was reduced from 16.4% to 0.9% (p=0.0001; mean BSA improvement=92.5%); mean IGAxBSA was reduced from 53.5 to 1.6 (p=0.0001; mean IGAxBSA improvement=95.7%); and mean DLQI/CDLQI was reduced from 13 to 1.2 (p=0.0001; mean DLQI/CDLQI improvement=90.5%), with 84.6% (55/65) of patients achieving DLQI/CDLQI 0/1. UPA monotherapy was utilized in 38.9% (51/131) of cases. Common concomitant therapies included topical corticosteroids (56.5%, 74/131), systemic corticosteroids (5.3%, 7/131), and topical calcineurin inhibitors (3.8%, 5/131).

Frequent AEs included: acne (18.3%, 24/131), hypertriglyceridemia (18.3%, 24/131), elevated creatine phosphokinase (12.2%, 16/131), herpes simplex (5.3%, 7/131), and transaminitis (5.3%, 7/131). Five patients (3.8%) discontinued UPA due to treatment-related AEs (myalgia/arthralgia [n=2]; gastrointestinal discomfort [n=1]; venous thromboembolism [n=1]; folliculitis [n=1]). No serious infections, tuberculosis, major adverse cardiovascular events, gastrointestinal perforation, or malignancy were observed in 67.4 patient-years of safety follow-up.

**Conclusions:**

Our real-world study shows that UPA is an effective and safe therapy for AD, with high levels of skin clearance and a favorable safety profile between weeks 20-32. These results indicate that UPA may perform better in the real-world versus clinical trial setting, as compared to the Heads Up and Rising Up studies at week 24, specifically for IGA 0/1 and EASI75/EASI90/EASI100 achievement. This may be explained by less severe baseline disease severity in our study. Limitations of this study include its sample size and retrospective nature.
Keywords: atopic dermatitis, upadacitinib, JAK inhibitor, real-world evidence

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