16455

Treatment patterns among patients with atopic dermatitis using advanced therapies in the united states: Analysis of a retrospective claims database

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Background: Many patients with AD are not adequately controlled with topical regimens alone. This analysis examined the management of patients using advanced therapy.

Design: Retrospective claims database analysis.

Methods: The IQVIA Health Plan Claims dataset from 1/1/2013 to 7/31/2018 was analyzed. Patients aged ≥12 years with AD (ICD-9/10-CM: 691.8/L20.x) who newly initiated an advanced therapy after the availability of dupilumab (March 28, 2017) and had ≥6 months continuous enrollment before and after their first advanced therapy claim (index) were included. Advanced therapies included oral corticosteroids (OCS), systemic immunomodulatory agents (SIA; cyclosporine, methotrexate, azathioprine, mycophenolate), phototherapy, and dupilumab.

Results: 1980 patients were included (61.1% female; mean age=41.2 years [SD=17.4], with 11.3% <18 years). Pre-index, 65.2% used topical corticosteroids (TCS; 40.7% and 32.1% medium and high potency, respectively). The most commonly initiated advanced therapy was OCS (n=1453; 69.2% prednisone), followed by dupilumab (n=265), SIA (n=99; 47.5% methotrexate), and phototherapy (n=163). 17.4% and 26.3% in the dupilumab and SIA groups, respectively, were prescribed OCS and 49.1% and 64.6% were prescribed TCS within 6 months post-index as combination therapy. Adherence rates (proportion of days covered [PDC]) at 6 months were 0.81 (SD=0.22) for dupilumab (68.7% considered adherent based on PDC≥0.80) and 0.58 (SD=0.29) for SIA (32.3% adherent). At 6 months, 21.9% and 63.6% in the dupilumab and SIA groups, respectively, had discontinued therapy.

Conclusions: Challenges remain for patients with AD who require advanced therapy; OCS and combination therapy are most common, <70% are adherent to their treatment regimen, and >20% discontinue within 6 months.

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16458

The Impact of Fee Code Changes on Physician Treatment of Actinic Keratosis

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Actinic keratosis lesions (AKs) are one of the most common conditions presenting to dermatologists. Limited data is available on their treatment over time in relation to associated costs, with further research needed to facilitate health care planning. Prior to 2011, Ontario physicians could only bill one cryotherapy service per patient per day at $11.65 per claim. In 2011, a new fee code was introduced for cryotherapy on at least 5 AKs at $29.00 per claim. Retrospective analysis was performed on physicians licensed to practice in Ontario from April 1, 2006 to March 31, 2017, with a focus on patients receiving cryotherapy before and after the change in fee codes. Data came from OHIP claims records accessed through IntelliHealth. It was found that dermatologists submitted 77% of all AK claims, making them the primary providers of AK treatment. Over the course of the study period, the annual number of AK claims submitted by physicians increased by 246%. After the introduction of the new fee code, physicians were found to submit more claims under the new code for cryotherapy on at least 5 AKs, compared with the old code for one cryotherapy service. This was especially true in rural areas and for patients aged 60+. Across the study period, the economic burden of AK increased by 290%, while the cost of an AK visit increased by 13%. This change in AK treatment over time, and the associated economic burden, carries important implications for treatment guidelines and the use of health care resources.

Commercial disclosure: None identified.

16466

Predictors of maintenance of response in patients with moderate to severe atopic dermatitis after oral Janus kinase 1 selective inhibitor abrocitinib interruption

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Background: It is unclear whether patients with moderate to severe AD can interrupt systemic therapy after achieving treatment response and whether there are the predictors for which patients can maintain control during treatment interruptions.

Design: Post hoc analysis of phase 2b trial.

Methods: Patients who achieved Investigator's Global Assessment (IGA) response (clear [0] or almost clear [1] with ≥2-grade improvement) or Eczema Area and Severity Index (EASI) 50 response (≥50% improvement) at week 12 were analyzed. Baseline characteristics were evaluated as predictors of maintained response at 4 weeks after interruption.

Results: Among 267 randomized and treated patients, IGA responses were achieved by 21 (43.8%), 16 (29.6%), 4 (8.9%), 5 (10.9%), and 3 (5.8%) patients who received abrocitinib 200 mg, 100 mg, 30 mg, 10 mg, or placebo respectively; EASI-50 responses were achieved by 38 (79.2%) 30 (55.6%), 15 (33.3%), 12 (26.1%), and 14 (26.9%) patients, respectively. Of these, 35.7% maintained IGA response and 65.5% maintained EASI-50 response at 4 weeks after abrocitinib interruption. Patients who maintained response versus those who did not had less severe disease at baseline (IGA response: severe IGA, 13.3% vs 40.7%; median EASI, 15.5 vs 20.0; EASI-50 response: severe IGA, 28.9% vs 50.0%; median EASI, 18.2 vs 27.4).

Conclusions: A considerable proportion of patients maintained response at 4 weeks after abrocitinib interruption. Patients with less severe disease at baseline were more likely to maintain response. A randomized controlled abrocitinib trial of induction followed by dose lowering or discontinuation is ongoing to further explore this potential.

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16467

Mechanical stretch increases skin oxygen uptake in a rat tissue expansion model

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Background: Tissue expansion is a widely used procedure for surgical reconstruction purposes by applying mechanical stretch to induce skin regeneration. It has been known that human skin takes up atmospheric oxygen which contributes significantly to the oxygen supply of human skin. However, it is unclear whether and how mechanical stretch regulates skin oxygen uptake, and relevant research tool to quantify oxygen flux on the animal is limited.

Objective: To assess the skin oxygen uptake under mechanical stretch using scanning micro-optrode technique (SMOT).

Methods: Tissue expansion model was established by subcutaneously implanting silicone expanders on the dorsum of Wistar rats. Mechanical stretch was conducted by injecting saline to the expander. SMOT with a noninvasively self-referencing oxygen selective optrode was applied to measure rat skin oxygen flux before and after stretching.

Results: At rest without expander implantation, there was significantly ($P < .05$) higher oxygen influx in rat skin in vivo compared with devitalized rat skin post 4% paraformaldehyde fixing. After expander implantation, oxygen influx in rat skin showed no significant differences at 6 h after stretching but showed significant ($P < .05$) increases at 24 h and 72 h after stretching, as compared with rat skin before stretching. Besides, expander implantation without stretching showed no significant change to oxygen influx in rat skin.

Conclusions: Mechanical stretch increases skin oxygen influx. SMOT can be used to investigate skin oxygen uptake. These may further the understanding of mechanical stretch-induced skin regeneration.

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