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**Characterization of nonresponders to interleukin-17 inhibitors in moderate to severe psoriasis patients enrolled in the Corrona Psoriasis Registry**

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Background: While interleukin-17 (IL-17) inhibitors are effective for many patients with psoriasis, there is limited data characterizing patients who respond or do not respond to this treatment.

Methods: Participants were patients enrolled 4/2015-6/2019 with moderate to severe psoriasis [body surface area (BSA) ≥3%] who initiated an IL-17 inhibitor with 6-month characteristics available (n = 533). Statistical tests (*t*/chi-square/Fisher exact) were used to compare baseline characteristics categorized by response vs non-response at 6 months. Response was defined as achieving mild disease severity BSA<3% or 75% improvement in BSA. Non-response included failing to achieve the aforementioned BSA levels, or discontinuation/switching of the index IL-17 drug to another IL-17/other biologic.

Results: In 533 patients at baseline, mean age was 50 years, 47% were female, and 77% were white. Baseline patient-reported outcome measures (DLQI, WPAI, itch, fatigue, pain, EQ-5D-3L) were not significantly different between responders (n=308) and non-responders (n=225). Compared to responders, non-responders were more likely to be current (19% vs 12%) or former smokers (40% vs 34%) and less likely to have a history of hyperlipidemia (15% vs 22%); all p<.05. Non-responders were also more likely to have previously received two (25% vs 20%) or ≥3 (33% vs 18%) biologics (p<.001).

Conclusion: In these unadjusted analyses of real-world patients with PsO initiating IL-17i, their baseline characteristics were largely similar between responders and non-responders, though non-responders were more likely to smoke and have used >=2 biologics.

*Commercial disclosure: None identified.*

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**A new antireactive skin ingredient obtained from *Chlamydomonas acidophila* microalga**

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Background: Sensitive skin is intrinsically characterized by sub-inflammatory state and weak skin barrier and reacts to triggering factors such as irritants agents and environmental factors. These triggering factors increase inflammation and can even induce molecular mechanisms related to the induction of allergic reaction. We have developed a specific and patented active ingredient from a microalga, *Chlamydomonas acidophila*, cultivated in photobioreactor and transformed by enzymatic hydrolysis. This microalga grows in extreme pH conditions and can survive in a highly concentrated heavy metals medium.

Methods: Anti-inflammatory activity of *C. acidophila* was evaluated in keratinocytes stimulated by nickel and reconstructed human epidermis stimulated by SDS. The effect of the ingredient has also been studied on basophils activation by flow cytometry. Finally, the efficacy of *C. acidophila* applied twice daily for 14 days has clinically evaluated on erythema induced by the application of methyl nicotinate.

Results: In vitro, the extract decreased IL8 and TNF$\alpha$ production in models of pollutant- and irritant-induced inflammation (nickel, SDS). It also inhibited basophil activation induced by fMLP peptide. Finally, the erythema induced by methyl nicotinate was significantly lower with active ingredient compared with placebo.

Conclusions: We have shown that *C. acidophila* extract modulates the inflammation pathways related to sensitive skin syndrome. Consequently, *C. acidophila* ingredient may be of potential interest for cosmetic products designed for reactive skin.

*Commercial disclosure: None identified.*

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**Benefits of apremilast treatment in patients with plaque psoriasis, including scalp and nail manifestations, in patients who failed to achieve adequate response or were intolerant to methotrexate treatment**

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Background: In Europe, apremilast is approved for patients with psoriasis and psoriatic arthritis who have not responded to or are contraindicated for a systemic agent. The benefits of switching from methotrexate to apremilast have not yet been described.

Methods: LAPIS-PSO (NCT02626793) was an open-label observational study of apremilast in German real-world settings. Patients previously treated with methotrexate who switched to apremilast at baseline and were followed-up to visit 5 (~52 weeks) were included in this analysis. Mean and percent data are reported as observed. All patients were assessed using Psoriasis Area Severity Index (PASI), body surface area (BSA), Dermatology Life Quality Index (DLQI) and Pruritus Visual Analog Scale (VAS). Patients with respective manifestations at baseline were assessed using Scalp Physician's Global Assessment (ScPGA) and Target Nail Psoriasis Severity Index (tNAPSI). The incidences of treatment-related adverse events (TRAEs) are also reported.

Results: A total of 128 patients switched from methotrexate to apremilast. Primary reasons for discontinuing methotrexate were poor tolerability (45%) and insufficient efficacy (42%). At baseline (start of apremilast), PASI was 12.2, BSA 18.6%, ScPGA 2.6, tNAPSI 4.3, DLQI 11.41, and Pruritus VAS 50.6. Sustained improvements were observed in patients who continued study visits, and by Visit 5, PASI was 2.8, BSA 3.9%, ScPGA 1.0, tNAPSI 1.3, DLQI 4.1, and Pruritus VAS 18.1. TRAEs occurred in 29.0% of patients, including diarrhea (9.4%), headache (8.6%), and nausea (4.6%); there were no serious TRAEs.

Conclusions: Apremilast is an effective treatment for psoriasis patients with or without specific manifestations who failed methotrexate therapy.

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13843

**Baseline burden of disease in patients with mild to moderate versus severe psoriasis: Insights from LAPIS-PSO reflecting routine dermatology care in germany**

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Background: There are limited data comparing the unmet medical needs of apremilast patients with mild to moderate psoriasis versus severe psoriasis.

Methods: LAPIS-PSO (NCT02626793) was a 52-week, multicenter, observational study of apremilast in real-world dermatology settings in Germany. Patients with available baseline Physician's Global Assessment (PGA) were grouped and assessed based on disease severity (mild to moderate psoriasis [PGA ≤3]; severe [PGA = 4]).

Results: Of the full analysis population (n = 389), 386 patients had a baseline PGA (301 PGA ≤3, 85 PGA = 4). Patients with mild to moderate psoriasis had lower mean baseline body surface area, Psoriasis Area Severity Index, and Pruritus Visual Analog Scale than patients with severe psoriasis; mean PGA (3.0 vs 3.6) was generally similar between groups. Comparable proportions of mild to moderate and severe patients suffered from scalp psoriasis (77.0% vs 81.2%) and nail psoriasis (48.5% vs 54.21%). Mean Scalp PGA (2.5 vs 3.0) and Target Nail Psoriasis Severity Index (3.0 vs 3.6) were comparable. Both groups had high proportions of patients with comorbidities, with comparable proportions of mild to moderate and severe patients with hypertension (37.5% vs 35.3%) and hyperlipidemia (14.0% vs 17.6%). Higher proportions of severe patients reported coronary artery disease (10.6% vs 5.6%), diabetes (12.9% vs 7.6%), and depression (11.8% vs 6.6%). More than half of patients in both groups (51.7% mild to moderate vs 72.6% severe) had a Dermatology Life Quality Index ≥10.

Conclusions: Patients with mild to moderate psoriasis in LAPIS-PSO had a high burden of disease, nearing that of patients with severe psoriasis.

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