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Meta-analysis of photobiomodulation for the treatment of androgenetic alopecia

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Background: Photobiomodulation therapy is a nonsurgical treatment option with a desirable safety profile which has been suggested for androgenetic alopecia (AGA). It involves the use of biologically active wavelengths through laser diodes or light emitting diodes (LEDs) usually in the red to infrared spectrum. Therapeutic laser emitting devices are available in multiple styles including combs, hats, helmets and hoods and may or may not contain LEDs in addition. The difference between laser diodes and LEDs is that lasers have more collimated and less divergent properties better conducive to the targeted transmission of light.

Objective: To investigate the efficacy of photobiomodulation for treatment of AGA.

Methods: A meta-analysis was used to compare photobiomodulation therapy with control treatment. Subgroup analysis was performed to determine which device variables significantly impacted results.

Results: Using hair density (hairs/cm^2) as a measure of efficacy, the standardized mean difference (SMD) was 1.02 (95% CI 0.68, 1.36) in favour of treatment over control (15 studies, pooled n = 795, $P < .00001$). Subgroup analysis comparing comb-style devices versus helmet/hat-style devices did not reveal a significant difference ($P = .08$). A second subgroup analysis suggested that laser treatment was significantly more effective ($P = .009$) than a combination of laser/LED treatment although the combination treatment was still significantly better than control treatment.

Conclusions: Based on meta-analysis results, photobiomodulation could be recommended for AGA treatment. When choosing a device, use of only laser diodes versus a combination of laser diodes and LEDs is more important than the style of the device (comb, hat or helmet).

Commercial disclosure: None identified.

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Safety of tildrakizumab in psoriatic arthritis: An interim analysis from a randomized, double-blind, placebo-controlled phase 2b trial

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Background: The safety of tildrakizumab (TIL)—an anti−interleukin-23p19 monoclonal antibody approved for moderate to severe plaque psoriasis—was assessed in a randomized, double-blind, placebo-controlled, multiple-dose, phase 2b trial (NCT02980692) in patients with active psoriatic arthritis (PsA) at week 24.

Methods: Patients ≥18 years old with PsA and ≥3 tender and ≥3 swollen joints were randomized 1:1:1:1:1 to 200 mg TIL every 4 weeks (q4w), 200 mg TIL every 12 weeks (q12w), 100 mg TIL q12w, 20 mg TIL q12w, or placebo q4w to wk 24. Treatment-emergent adverse events (TEAEs) were monitored throughout the study.

Results: Overall, 391/500 patients met inclusion criteria. At wk 4, 61 (78.2%) 200 mg TIL q4w, 64 (81.0%) 200 mg TIL q12w, 60 (77.9%) 100 mg TIL q12w, 71 (91.0%) 20 mg TIL q12w, and 74 (93.7%) placebo-treated patients completed treatment. Overall, 50.0% of TIL-treated vs 43.0% of placebo-treated patients had a TEAE (most common—nasopharyngitis [5.4% vs 6.3%], headache [4.8% vs 2.5%], and hypertension [3.5% vs 5.1%], respectively), 2.2% vs 2.5% a serious TEAE (most common—hypertension [0.6%] in TIL-treated patients), and 11.2% vs 12.7% a treatment-related TEAE, respectively. One TIL-treated patient (0.3%) had a serious infection (chronic tonsillitis). There were no reports of candidiasis, inflammatory bowel disease, major adverse cardiac events, elevated liver function enzymes, malignancies, deaths or discontinuations due to TEAEs, or abnormal laboratory parameters leading to a serious TEAE designation.

Conclusions: At wk 24 of the phase 2b trial, TIL was well tolerated, with rates of TEAEs and serious TEAEs similar to placebo.

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Tildrakizumab efficacy for psoriatic arthritis: 24-week analysis of swollen and tender joint counts and pain

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Background: This analysis evaluated efficacy of tildrakizumab (TIL)—an anti−interleukin-23p19 monoclonal antibody approved for moderate to severe plaque psoriasis—on 66 swollen and 68 tender joint counts (SJC, TJC) and pain in a randomized, double-blind, placebo-controlled, multiple-dose, phase 2b trial (NCT02980692) in patients with active psoriatic arthritis (PsA) at week 24.

Methods: Patients, stratified by previous anti−tumor necrosis factor (TNF) use and baseline body weight (≤90 kg and >90 kg), were randomized 1:1:1:1:1 to receive TIL (200 mg every 4 weeks [q4w], 200 mg every 12 weeks [q12w], 100 mg q12w, 20 mg q12w to wk 24) or placebo q4w to wk 24. SJC, TJC, and patient-rated pain (visual analog scale [0-100 mm]) were assessed to wk 24.

Results: Overall, 391/500 patients met the inclusion criteria; 91 (23.3%) were TNF-α experienced. Demographics were similar across arms. At wk 24, percent reduction from baseline in TIL vs placebo arms was 73.0%-79.8% vs 59.3% for SJC ($P = .0189$, 0.0111, TIL 100 mg q12w, 200 mg q4w, respectively), 62.1%-67.5% vs 48.7% for TJC ($P = .0140$, 0.0234, TIL 100 and 200 mg q12w, respectively) and 47.5%-63.5% vs 33.5% for patient pain ($P = .0039$, 0.0056, and 0.0003 for TIL 100 q12w, TIL 200 q12w and q4w, respectively). No malignancies, major adverse cardiac events, or deaths were reported.

Conclusions: At wk 24, TIL significantly reduced SJC (100 mg q12w, 200 mg q4w), TJC (TIL 100 and 200 mg q12w) and pain (all arms except TIL 20 q12w) vs placebo in patients with PsA.

Commercial disclosure: The studies were funded by Merck Sharp & Dohme Corp, a subsidiary of Merck & Co, Kenilworth, New Jersey. Analyses were funded by Sun Pharmaceutical Industries, Princeton, New Jersey.

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Geographic disparities in access to scalp cooling for the prevention of chemotherapy-induced alopecia in the United States

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Background: Chemotherapy-induced alopecia (CIA) is a challenging experience for patients undergoing cancer treatment. Scalp cooling, including machine scalp cooling and manual cold caps, can prevent the extent of hair loss in patients receiving cytotoxic chemotherapy. We aim to evaluate geographic disparities in access to scalp cooling in the United States.

Methods: We identified cancer treatment centers in the US offering scalp cooling as of December 31, 2018, through the Rapunzel Project, a nonprofit organization that raises awareness of scalp cooling for CIA. We queried 2016 Medicaid Part B claims data to evaluate the number of chemotherapy infusions occurring in each 3-digit and 5-digit zip code. Using ArcGIS software, we calculated the average distance from the centroid of all 5-digit zip codes.

Results: Out of 366 chemotherapy infusion centers in the US offering scalp cooling, the majority are in coastal states and urban areas. 56.1% of infusions occur in zip codes greater than 12.5 miles from a scalp cooling center. Most chemotherapy infusions in suburban (59.9%) and rural (80.8%) zip codes were a long distance (≥50 miles) from a scalp cooling center. No chemotherapy infusions in rural zip codes were a short distance (<12.5 miles) from access to cooling. 73.9% of Medicare-billed chemotherapy infusions occurred in zip codes without a scalp cooling center.

Conclusions: There is substantial disparity in geographic access to scalp cooling for prevention of CIA, particularly in rural and suburban areas. It is crucial to further evaluate barriers to this quality-of-life preserving therapy.

Commercial disclosure: None identified.