Review of apremilast combination therapies in the treatment of moderate-to-severe psoriasis

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Background
- Psoriasis is a chronic inflammatory skin disease. Moderate-to-severe psoriasis with ineffective results from monotherapy with topicalcs, oral agents, phototherapy, and biologics is generally followed by combination therapy.
- There are various combination therapies but combination therapy with apremilast has been less extensively studied.
- Apremilast is an FDA-approved oral phosphodiesterase-4 inhibitor for the treatment of moderate-to-severe plaque psoriasis in patients who are eligible for phototherapy or systemic therapy. Recommended dosage is up-titration to 30 mg twice daily.

Objective
- Identify and classify scientific literature reporting on apremilast in combination with any topical, oral agent, biologic, and/or phototherapy in treating moderate-to-severe psoriasis including psoriasis refractory to biologic monotherapy and traditional therapy (e.g., phototherapy and topicals).
- Critically evaluate and analyze clinical outcome data from included articles regarding treatment with apremilast combination therapy for moderate-to-severe psoriasis.

Methods
- An electronic literature search was performed by one reviewer using the PubMed database on April 7, 2020 with the following search terms (apremilast AND psoriasis) AND (topical OR oral agents OR biologics OR combined therapy OR combination therapy) during the years 2015 - 2019.
- Articles were excluded if pathology did not include psoriasis, treatment did not include concurrent combination therapy with apremilast, information on combination therapy agents was unavailable, or were review papers.

Results
- The literature search yielded 262 original articles and after removal of irrelevant articles a total of 17 articles were included: 1 randomized controlled trial, 2 nonrandomized interventional studies, 5 retrospective chart reviews, and 9 case reports.
- Included articles evaluated one or more therapies combined with apremilast namely biologic(n=11), topical(n=7), other oral agent(n=6), and phototherapy(n=5).
- Significance was found in 3 studies (P <0.05) providing strong evidence that apremilast offers benefit when added to existing therapy (i.e., DMARDs and oral corticosteroids, topical steroids, and biologics over a treatment period of 16, 24, and 24 weeks respectively).

Conclusion
- A larger number of studies (n=15) found apremilast combination therapy to have better skin clearance capability versus existing monotherapy compared to studies that did not (n=2).

Discussion
- A premlast/biologic combination therapy can provide improved skin clearance in patients with biologic fatigue.

Discussion continued
- A study limitation is majority of results were case reports which lack statistical power for making broad conclusions about treatment outcomes.

Disclosure
- Dr. Wu is or has been an investigator, consultant, or speaker for Abbvie, Amgen, Amgen, Arclis, Arthrinr Ingelheim, Bristol-Meyers Squibb, Celgene, Dermalvax, Dermira, Dr. Reddy’s Laboratories, Eli Lilly, Janssen, LEO Pharma, Novartis, Regeneron, Sanofi Genzyme, Sun Pharmaceuticals, UCB, Valeant Pharmaceuticals North America LLC. Dr. Liao has been funded in part by grants from the National Institutes of Health (U01AI119125) and has served as a research investigator for Abbvie, Amgen, Janssen, Novartis, Pfizer, Regeneron, Sanofi, and Tixtre Bio.