



PIGMENTATION

TOPICAL JANUS KINASE INHIBITOR TOFACITINIB FOR THE TREATMENT OF VITILIGO

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Background: Vitiligo affects 0.5-2% of the world's population and causes significant impairment in quality of life. Current treatments are limited in efficacy and may cause side effects. Recent studies have established CD8+ T cells and interferon gamma (IFN- γ) signaling, mediated by the JAK-STAT pathway, in the pathogenesis of vitiligo, ushering the possibility of Janus Kinase (JAK) inhibitors as a potential treatment. Currently available oral JAK inhibitors are costly and carry the risk of systemic side effects. Topical JAK inhibitors may be a more economical and safer option. There are 2 reports of the topical JAK inhibitor ruxolitinib (JAK1/2 inhibitor) for the treatment of vitiligo but none for topical tofacitinib (JAK 1/3 inhibitor). We report a case series of 5 patients with facial vitiligo treated with 2% tofacitinib cream twice daily.

Observation: Five patients with vitiligo presenting to our medical center were treated with compounded 2% tofacitinib cream twice daily in conjunction with NBUBV therapy three times weekly. A facial Vitiligo Area Severity Index (fVASI) was calculated on all patients before and after 3 months of treatment. Mean age was 43 years. 3 subjects were Caucasian females and 2 were South Asian males. The mean fVASI at baseline was 0.64 compared to 0.22 at follow up, which is a 66% improvement. There were no reported side effects. The cost of one 30-gram tube of compounded tofacitinib 2% cream was \$330 and lasted each patient an average of 90 days.

Key message: JAK inhibitors show promise in the treatment of vitiligo, yet robust studies are lacking. Oral formulations may be beneficial but currently available forms are costly and carry risk of systemic side effects. This small pilot study of 5 cases suggests that topical tofacitinib cream may be beneficial in the treatment of facial vitiligo when used in conjunction with phototherapy.

