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Year Book of

JAK Inhibitors



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Contents

Section 1: Tofacitinib

Chapter 1: Tofacitinib in Alopecia **3**

1. Switching between Tofacitinib and Baricitinib in Alopecia Areata: A Review of Clinical Response 3
2. Which is the Ideal JAK Inhibitor for Alopecia Areata – Baricitinib, Tofacitinib, Ritlecitinib or Ifidancitinib – Revisiting the Immunomechanisms of the JAK Pathway 4
3. Effectiveness of Tofacitinib in Pre-adolescent Alopecia Areata: A Retrospective Case Series and Literature Review 5
4. Refractory Alopecia in Lupus Treated with Tofacitinib: A Case-based Review 6
5. Drug Survival and Long-term Outcome of Tofacitinib in Patients with Alopecia Areata: A Retrospective Study 7
6. Effectiveness and Predictive Factors of Response to Tofacitinib Therapy in 125 Patients with Alopecia Areata: A Single-centre Real-world Retrospective Study 8
7. Tofacitinib Therapy for Alopecia Areata is not Associated with Adverse Events during COVID-19 Infection 9
8. A Retrospective Study of Oral Tofacitinib Therapy for Alopecia Areata 10
9. Clinical Response to Oral Tofacitinib in Pediatric Patients with Alopecia Areata 12
10. Alopecia Universalis Treated with Tofacitinib: The Role of JAK/STAT Inhibitors in Hair Regrowth 14
11. A Real-world Study of Steroid-free Monotherapy with Tofacitinib in Severe and Therapy-recalcitrant Alopecia Areata, Alopecia Totalis, and Alopecia Universalis Cases: A Retrospective Analysis 15
12. Case Report: Reversal of Long-standing Refractory Diffuse Nonscarring Alopecia due to Systemic Lupus Erythematosus Following Treatment with Tofacitinib 17

Chapter 2: Tofacitinib in Atopic Dermatitis **18**

1. Use of Tofacitinib in Baricitinib-refractory Atopic Dermatitis: An Example of JAK Inhibitor Switching 18
2. Comparative Efficacy and Safety of Abrocitinib, Baricitinib, and Upadacitinib for Moderate-to-severe Atopic Dermatitis: A Network Meta-analysis 18

3. Topical Tofacitinib for Atopic Dermatitis: A Phase IIa Randomized Trial 20
4. Atopic Dermatitis: Tofacitinib, an Option for Refractory Disease 21
5. Treatment of Recalcitrant Atopic Dermatitis with the Oral Janus Kinase Inhibitor Tofacitinib Citrate 21

Chapter 3: Tofacitinib in Psoriasis 23

1. Concurrent Bullous Pemphigoid and Psoriasis Vulgaris Successfully Treated with Janus Kinase Inhibitor Tofacitinib: A Case Report and Review of the Literature 23
2. Efficacy and Safety of Tofacitinib for Chronic Plaque Psoriasis and Psoriatic Arthritis: A Systematic Review and Meta-analysis of Randomized Controlled Trials 24
3. Biological and JAK Inhibitor Therapy Outcomes for Severe Psoriasis in Trisomy 21 25
4. Topical Tofacitinib as Effective Therapy in Patients with Plaque Psoriasis Responsive to Systemic Drugs but with Resistant Nail Psoriasis 26
5. The Impact of Tofacitinib on Quality of Life in Patients with Moderate-to-severe Psoriasis—an Observational Study 27

Chapter 4: Tofacitinib in Lichen 29

1. Severe Esophageal Lichen Planus Treated with Tofacitinib 29
2. Tofacitinib Use in the Treatment of Plantar Erosive Lichen Planus 30
3. Oral Tofacitinib Effectively Treating Eruptive and Hypertrophic Cutaneous Lichen Planus 31
4. Successful Treatment of Resistant Plantar Ulcerative Lichen Planus with Tofacitinib: A Case Report and Comprehensive Review of the Literature 32
5. Successful Treatment of Nail Lichen Planus with Tofacitinib: A Case Report and Review of the Literature 33

Chapter 5: Tofacitinib in Vitiligo 35

1. Tofacitinib Combined with Melanocyte Protector α-MSH to Treat Vitiligo through Dextran-based Hydrogel Microneedles 35
2. Tofacitinib 2% Gel in Childhood Vitiligo: Report of a Case of Significant Improvement 36
3. Partial Repigmentation of Vitiligo with Tofacitinib, without Exposure to Ultraviolet Radiation 37
4. Repigmentation in Vitiligo Using the Janus Kinase Inhibitor Tofacitinib may Require Concomitant Light Exposure 38
5. Tofacitinib Citrate for the Treatment of Vitiligo: A Pathogenesis-directed Therapy 39

6. Tofacitinib for the Treatment of Refractory Progressive Vitiligo: A Retrospective Case Series 40
7. Topical Tofacitinib: A Janus Kinase Inhibitor for the Treatment of Vitiligo in an Adolescent Patient 41

Chapter 6: Tofacitinib in Bullous Pemphigoid 43

1. Tofacitinib in Recalcitrant Bullous Pemphigoid: A Report of Seven Cases 43
2. Two Cases of Bullous Pemphigoid Effectively Treated with Oral Tofacitinib 44
3. Concurrent Bullous Pemphigoid and Psoriasis Vulgaris Successfully Treated with Janus Kinase Inhibitor Tofacitinib: A Case Report and Review of the Literature 45
4. Janus Kinase Inhibitors in Autoimmune Bullous Diseases 46

Chapter 7: Tofacitinib in Prurigo Nodularis 48

1. Treatment of Recalcitrant Paediatric Prurigo Nodularis with Tofacitinib, an Exquisite Example of Bench-to-bedside Translation of JAK-STAT Expression 48
2. A Case of Recalcitrant Prurigo Nodularis with Heightened Expression of STAT 3 and STAT 6 and its Dramatic Response to Tofacitinib 49
3. Tofacitinib for Prurigo Nodularis: A Case Report 50

Chapter 8: Tofacitinib in Chronic Actinic Dermatitis 52

1. Recalcitrant Chronic Actinic Dermatitis Responding to Tofacitinib: A Case Report 52
2. Successful Treatment of Chronic Actinic Dermatitis with Tofacitinib 53
3. Tofacitinib Citrate for the Treatment of Refractory, Severe Chronic Actinic Dermatitis 54

Chapter 9: Tofacitinib in Other Diseases 56

1. Tofacitinib is an Effective Treatment for Refractory Scleromyositis Associated with Anti-PM/Scl 56
2. Successful Treatment of Pediatric Morphea with Tofacitinib 57
3. Janus Kinase Inhibitor–Tofacitinib Associated with Pemphigus: An Analysis of the FDA Adverse Event Reporting System Data 58
4. An Open-label, Uncontrolled, Single-arm Clinical Trial of Tofacitinib, an Oral JAK1 and JAK3 Kinase Inhibitor, in Chinese Patients with Keloid 60
5. Successful Treatment of Hidradenitis Suppurativa with Tofacitinib: Two Cases and a Review of the Literature 61
6. Granulomatous Reaction to Permanent Eyebrow Makeup Successfully Treated with Oral Tofacitinib 63
7. Oral Tofacitinib Therapy for the Effective Management of Netherton Syndrome 64

8. Intravenous Immunoglobulin-refractory Necrobiotic Xanthogranuloma Successfully Treated with Tofacitinib 2% Cream 65
9. Recalcitrant Nodular Scabies Showing Excellent Response to Tofacitinib: Five Case Reports 66
10. Two Cases of Lupus Miliaris Disseminatus Faciei Successfully Treated with Oral Tofacitinib 67
11. Tofacitinib for the Treatment of Psoriasiform Dermatitis Caused by IL-17 Inhibitors: A Case Report 68
12. Fulminant ***Demodex*** Folliculitis in a Patient with Ulcerative Colitis Treated with Tofacitinib 70
13. Acrodermatitis Continua of Hallopeau with Insufficient Response to Ixekizumab and Infliximab, Successfully Treated with a Combination of Ustekinumab and Tofacitinib 71
14. Successful Treatment of Eruptive Pruritic Papular Porokeratosis in the Elderly with Tofacitinib: A Case Report 72

Chapter 10: Topical Tofacitinib 74

1. Tofacitinib Cream Plus Narrowband Ultraviolet B Phototherapy for Segmental Vitiligo in a Child 74
2. Intravenous Immunoglobulin-refractory Necrobiotic Xanthogranuloma Successfully Treated with Tofacitinib 2% Cream 74
3. A Pilot Study of 2% Tofacitinib Cream with Narrowband Ultraviolet B for the Treatment of Facial Vitiligo 75
4. Effectiveness and Safety of Tofacitinib Combined with Narrowband Ultraviolet B Phototherapy for Patients with Refractory Vitiligo in Real-world Clinical Practice 76
5. Successful Treatment of Severe Alopecia Areata with Oral or Topical Tofacitinib 77
6. Topical Tofacitinib Solution for the Treatment of Alopecia Areata Affecting Eyelashes 78
7. Topical Tofacitinib in Treatment of Alopecia Areata 78
8. Topical Tofacitinib for the Treatment of Alopecia Areata Affecting Facial Hair 79
9. Tofacitinib 2% Ointment, a Topical Janus kinase Inhibitor, for the Treatment of Alopecia Areata: A Pilot Study of 10 Patients 80
10. Efficacy and Safety of Topical Tofacitinib for the Treatment of Alopecia Areata 81

Section 2: Baricitinib

Chapter 11: Baricitinib in Atopic Dermatitis 85

1. Maintained Improvement in Physician- and Patient-reported Outcomes with Baricitinib in Adults with Moderate-to-severe Atopic Dermatitis Who were Treated for up to 104 Weeks in a Randomized Trial 85

2. Efficacy and Safety of Baricitinib in Combination with Topical Corticosteroids in Paediatric Patients with Moderate-to-severe Atopic Dermatitis with an Inadequate Response to Topical Corticosteroids: Results from a Phase III, Randomized, Double-blind, Placebo-controlled Study (BREEZE-AD PEDS) 86
3. Safety of Baricitinib for the Treatment of Atopic Dermatitis Over a Median of 1.6 Years and up to 3.9 Years of Treatment: An Updated Integrated Analysis of Eight Clinical Trials 88
4. Efficacy of Downtitration or Treatment Withdrawal Compared with Continuous Dosing after Successful Treatment with Baricitinib in Patients with Moderate-to-severe Atopic Dermatitis in a Randomized Substudy from the Long-term Extension Study BREEZE-AD3 89
5. Comparison of Efficacy of Baricitinib and Dupilumab in the Treatment of Chinese Moderate-to-severe Atopic Dermatitis: A Retrospective Study 91
6. Long-term Efficacy (Up to 68 Weeks) of Baricitinib in Combination with Topical Corticosteroids in Adult Patients with Moderate-to-severe Atopic Dermatitis: Analysis of Treatment Responders, Partial Responders and Nonresponders Originating from Study BREEZE-AD7 92
7. Baricitinib Provides Rapid and Sustained Improvements in Absolute EASI and SCORAD Outcomes in Adults with Moderate-to-severe Atopic Dermatitis 93
8. Early Improvements in Signs and Symptoms Predict Clinical Response to Baricitinib in Patients with Moderate-to-severe Atopic Dermatitis 95
9. Efficacy and Safety of Baricitinib Treatment for Moderate-to-severe Atopic Dermatitis in Real-world Practice in Japan 96
10. Pooled Analysis of Baricitinib Tolerability in Patients with Atopic Dermatitis in Relation to Acne, Headache, and Gastrointestinal Events from 8 Clinical Trials 97
11. Baseline Body Surface Area and Itch Severity Define Response to Baricitinib in Patients with Moderate-to-severe Atopic Dermatitis at Week 16 98
12. Treatment Satisfaction of Adult Patients with Moderate-to-severe Atopic Dermatitis Treated with Baricitinib in France, Germany, and the United Kingdom: Results from a Cross-sectional International Patient Survey 99
13. Evaluating the Safety and Efficacy of Baricitinib for the Treatment of Moderate-to-severe Atopic Dermatitis 101
14. Real-world Experience of Baricitinib in Atopic Dermatitis: Including Add-on Therapy for Patients Using Dupilumab 102
15. Impact of Baricitinib on Patients' Quality of Life after One Year of Treatment for Atopic Dermatitis in Real-world Practice: Results of the Observatory of Chronic Inflammatory Skin Diseases Registry 103
16. Baricitinib Treatment Rapidly Improves the Four Signs of Atopic Dermatitis Assessed by Eczema Area and Severity Index (EASI) Clinical Subscores 104
17. A Case of Kimura Disease with Atopic Dermatitis Successfully Treated with Baricitinib 105
18. Atopic Dermatitis and Multilocular Alopecia Areata Simultaneously Treated with Baricitinib 106

Chapter 12: Baricitinib in Alopecia Areata **108**

1. Baricitinib as the First Systemic Treatment for Severe Alopecia Areata 108
2. Baricitinib for the Treatment of Alopecia Areata 109
3. Integrated Safety Analysis of Baricitinib in Adults with Severe Alopecia Areata from Two Randomized Clinical Trials 110
4. Efficacy and Safety of Baricitinib in Patients with Severe Alopecia Areata over 52 Weeks of Continuous Therapy in Two Phase III Trials (BRAVE-AA1 and BRAVE-AA2) 112
5. Efficacy of Baricitinib in Patients with Various Degrees of Alopecia Areata Severity: Post Hoc Analysis from BRAVE-AA1 and BRAVE-AA2 114
6. Efficacy and Safety of Baricitinib in Patients with Alopecia Areata: Evidence to Date 115
7. Clinical Outcomes for Uptitration of Baricitinib Therapy in Patients with Severe Alopecia Areata: A Pooled Analysis of the BRAVE-AA1 and BRAVE-AA2 Trials 116
8. Effectiveness and Safety of Baricitinib in Patients with Severe Alopecia Areata: A 36-week Multicenter Real-world Experience 117
9. Effectiveness and Safety of Baricitinib in Patients with Moderate-to-severe Refractory Alopecia Areata in Real World: An Open-label, Single-center Study 118
10. Clinical Benefits of Baricitinib Therapy According to Scalp Hair Regrowth in Patients with Severe Alopecia Areata 120
11. Comment on 'Treatment of Moderate-to-severe Alopecia Areata with Baricitinib in Preadolescent Children' 121
12. Real-life Effectiveness and Tolerance of Baricitinib for the Treatment of Severe Alopecia Areata with 1-year Follow-up Data 122
13. Major Improvement of Very Severe Alopecia Areata in Patients Treated with the Combination of Baricitinib and Low Doses of Corticosteroids: An Eight-case Series 124
14. Two Phase III Trials of Baricitinib for Alopecia Areata: A Critically Appraised Research Paper 125
15. Exploring the Efficacy of Baricitinib in Treating Alopecia Areata after Failed Janus Kinase Inhibitor Therapy 126
16. Combination of Baricitinib and Conventional Immunomodulating Therapy for Alopecia Totalis 127
17. Treatment of Alopecia Areata of the Beard with Baricitinib 128
18. Treatment of Moderate-to-severe Alopecia Areata in Adolescents with Baricitinib: A Retrospective Review of 29 Patients 129
19. When to Expect Scalp Hair Regrowth during Treatment of Severe Alopecia Areata with Baricitinib: Insights from Trajectories Analyses of Patients Enrolled in Two Phase III Trials 130
20. Alopecia Areata in Skin of Color Patients: New Considerations Sparked by the Approval of Baricitinib 131

Chapter 13: Baricitinib in Vitiligo **133**

1. Excellent Repigmentation of Generalized Vitiligo with Oral Baricitinib Combined with NB-UVB Phototherapy 133
2. Baricitinib is Effective in Treating Progressing Vitiligo in Vivo and in Vitro 134
3. Repigmentation of Vitiligo with Oral Baricitinib 135

Chapter 14: Baricitinib in Granuloma Annulare **137**

1. Rapid Improvement of Refractory Generalized Granuloma Annulare with the Janus Kinase Inhibitor Baricitinib in Two Patients 137

Chapter 15: Baricitinib in Other Diseases **139**

1. Emerging Role of Baricitinib in Dermatology Practice: All We Need to Know! 139
2. Corrigendum: JAK1/2 Inhibitor Baricitinib Improves Skin Fibrosis and Digital Ulcers in Systemic Sclerosis 140
3. Hyperactivation of the JAK2/STAT5 Signaling Pathway and Evaluation of Baricitinib Treatment among Patients with Eosinophilic Cellulitis 141
4. Successful Treatment with Baricitinib of Linear Morphea Following the Lines of Blaschko Mimicking Lichen Striatus 142
5. STAT1 Gain-of-Function and Hidradenitis Suppurativa Successfully Managed with Baricitinib 143
6. Neutrophilic Dermatosis of the Dorsal Hands Treated with Baricitinib 144
7. Nine Cases of Chronic Hand and Foot Eczema Treated with Baricitinib 145
8. Perifolliculitis Capitis Abscedens et Suffodiens Treatment with Tumor Necrosis Factor Inhibitors and Baricitinib: A Case Report and Literature Review 146
9. Atezolizumab Plus Bevacizumab-induced Recalcitrant Pyoderma Gangrenosum Treated with Baricitinib: A Case Report 147

Section 3: Ruxolitinib

Chapter 16: Ruxolitinib in Atopic Dermatitis **151**

1. Treatment of Atopic Dermatitis: Recently Approved Drugs and Advanced Clinical Development Programs 151
2. Satisfaction with Control of Mild-to-moderate Atopic Dermatitis with Ruxolitinib Cream: US Physician and Patient Perspectives 152
3. Topical Treatments for Atopic Dermatitis (Eczema): Systematic Review and Network Meta-analysis of Randomized Trials 153
4. Ruxolitinib Cream 1.5%: A Review in Mild-to-moderate Atopic Dermatitis 154
5. Emerging Trends in Clinical Research on Janus Kinase Inhibitors for Atopic Dermatitis Treatment 155

6. Rapid Pruritus Reduction with Ruxolitinib Cream Treatment in Patients with Atopic Dermatitis 156
7. Review of Ruxolitinib in the Treatment of Atopic Dermatitis 157
8. Efficacy and Safety of Topical JAK Inhibitors in the Treatment of Atopic Dermatitis in Pediatrics and Adults: A Systematic Review 158
9. Novel Vehicles for Drug Delivery in Atopic Dermatitis: A Narrative Review 159
10. Ruxolitinib Cream for the Short-term Treatment of Mild-moderate Atopic Dermatitis 160
11. Short-term Efficacy and Safety of Biologics and Janus Kinase Inhibitors for Patients with Atopic Dermatitis: A Systematic Review and Meta-analysis 161

Chapter 17: Ruxolitinib in Psoriasis 164

1. Janus-kinase Inhibitors in Dermatology: A Review of their Use in Psoriasis, Vitiligo, Systemic Lupus Erythematosus, Hidradenitis Suppurativa, Dermatomyositis, Lichen Planus, Lichen Planopilaris, Sarcoidosis and Graft-versus-host Disease 164
2. Efficacy and Safety of Newer Topical Therapies in Psoriasis: A Systematic Review and Network Meta-analysis 165
3. Role of Janus Kinase Inhibitors in Therapy of Psoriasis 166

Chapter 18: Ruxolitinib in Vitiligo 168

1. Expert Recommendations on Use of Topical Therapeutics for Vitiligo in Pediatric, Adolescent, and Young Adult Patients 168
2. Topical Ruxolitinib: A New Treatment for Vitiligo 169
3. Etiopathogenesis and Emerging Methods for Treatment of Vitiligo 170
4. Vitiligo: Current Therapies and Future Treatments 171
5. The Use of Janus Kinase Inhibitors and Narrowband Ultraviolet B Combination Therapy in Nonsegmental Vitiligo 172
6. A Review on the Use of Topical Ruxolitinib for the Treatment of Vitiligo 173

Chapter 19: Ruxolitinib in Other Diseases 175

1. Real-world Use of Ruxolitinib Cream: Safety Analysis at 1 Year 175
2. Novel Clinical Applications of Topical Ruxolitinib: A Case Series 176
3. Prurigo Nodularis: New Insights into Pathogenesis and Novel Therapeutics 177
4. Efficacy of Topical Ruxolitinib for Cutaneous Dermatomyositis 178
5. Treatment with Janus Kinase Inhibitors in Juvenile Dermatomyositis: A Review of the Literature 179
6. A Review on the Safety of Using JAK Inhibitors in Dermatology: Clinical and Laboratory Monitoring 180

7. Chronic Prurigo Including Prurigo Nodularis: New Insights and Treatments 181
8. Treatments for Alopecia Areata: A Network Meta-analysis 182
9. Utilization of Topical Ruxolitinib in Dermatology: A Review 183
10. Effects of Ruxolitinib on Fibrosis in Preclinical Models of Systemic Sclerosis 184
11. New Nonsteroidal Topical Therapies for Inflammatory Dermatoses-Part 1: Ruxolitinib 185

Section 4: Abrocitinib

Chapter 20: Abrocitinib in Atopic Dermatitis 189

1. Abrocitinib: A New FDA-approved Drug for Moderate-to-severe Atopic Dermatitis 189
2. Abrocitinib Efficacy and Safety in Patients with Moderate-to-severe Atopic Dermatitis: Results from Phase 3 Studies, Including the Long-term Extension JADE EXTEND Study 190
3. Efficacy and Safety of Abrocitinib Monotherapy in Adolescents and Adults: A Post Hoc Analysis of the Phase 3 JAK1 Atopic Dermatitis Efficacy and Safety (JADE) REGIMEN Clinical Trial 191
4. Efficacy and Safety of Abrocitinib and Upadacitinib versus Dupilumab in Adults with Moderate-to-severe Atopic Dermatitis: A Systematic Review and Meta-analysis 193
5. Abrocitinib 100 mg Once Daily for Moderate-to-severe Atopic Dermatitis: A Review of Efficacy and Safety, and Expert Opinion on Use in Clinical Practice 194
6. Early Itch Response with Abrocitinib is Associated with Later Efficacy Outcomes in Patients with Moderate-to-severe Atopic Dermatitis: Subgroup Analysis of the Randomized Phase III JADE COMPARE Trial 195
7. Efficacy and Safety of JAK1 Inhibitor Abrocitinib in Atopic Dermatitis 196
8. Efficacy and Safety of Abrocitinib for Moderate-to-severe Atopic Dermatitis in Adolescents and Adults: Meta-analysis 197
9. Real-world Effectiveness of Abrocitinib Treatment in Patients with Difficult-to-treat Atopic Dermatitis 199
10. Atopic Dermatitis in Children and Adults—Diagnosis and Treatment 200
11. Biologic versus Small Molecule Therapy for Treating Moderate-to-severe Atopic Dermatitis: Clinical Considerations 201
12. Systemic Treatments for Atopic Dermatitis (Eczema): Systematic Review and Network Meta-analysis of Randomized Trials 202
13. Efficacy and Safety of New Systemic Therapies in Moderate-to-severe Atopic Dermatitis in the Elderly: Meta-analysis 203
14. Successful Treatment of Atopic Dermatitis with a Predominant Nipple Involvement by Abrocitinib during COVID-19 Pandemic: A Case Report 205

15. Assessment of Efficacy and Safety Outcomes Beyond Week 16 in Clinical Trials of Systemic Agents Used for the Treatment of Moderate-to-severe Atopic Dermatitis in Combination with Topical Corticosteroids 206
16. Use of Janus Kinase Inhibitors in Atopic Dermatitis: An Update 207
17. Expert Opinion on Management of Moderate-to-severe Atopic Dermatitis in Qatar 208

Chapter 21: Abrocitinib in Other Diseases 210

1. Treatment of Netherton Syndrome with Abrocitinib 210
2. Effectiveness of Abrocitinib in a Patient with Chronic Actinic Dermatitis 210
3. A Report of Eruptive Pruritic Papular Porokeratosis Treated with Abrocitinib 211
4. A Case of Perioral Dermatitis Successfully Treated with Abrocitinib 212
5. Dupilumab-associated Head and Neck Dermatitis: Rapid Response with Abrocitinib Treatment 213
6. Successful Treatment of Granulomatous Rosacea by JAK Inhibitor Abrocitinib: A Case Report 214

***Index* 217**

CHAPTER

8 Tofacitinib in Chronic Actinic Dermatitis

1. Recalcitrant Chronic Actinic Dermatitis Responding to Tofacitinib: A Case Report

Dev A, Bishnoi A, Narang T, Vinay K. Recalcitrant chronic actinic dermatitis responding to tofacitinib: A case report. Indian J Dermatol Venereol Leprol. 2023;89(4):600-2.

Abstract

A 50-year-old man with chronic actinic dermatitis refractory to conventional therapies showed significant improvement with oral tofacitinib, a Janus kinase (JAK) inhibitor. The patient presented with photodistributed, erythematous, and eczematous plaques exacerbated by sunlight exposure, impacting his quality of life. Despite prior treatments, including oral corticosteroids and immunosuppressants, the response was unsatisfactory. After starting tofacitinib, the patient reported rapid improvement in symptoms and near-complete clearance of lesions within 3 months, with no adverse effects. Tofacitinib's efficacy in chronic actinic dermatitis suggests a role of JAK-STAT (signal transducer and activator of transcription) inhibition in suppressing T cell-mediated diseases, including eczematous dermatoses. Case reports and series have also reported successful outcomes with tofacitinib in chronic actinic dermatitis, emphasizing its potential as a therapeutic option for refractory cases. Further studies are warranted to establish its efficacy and safety in eczematous diseases.

COMMENT

This case report highlights the successful use of oral tofacitinib in treating refractory chronic actinic dermatitis, a condition notoriously difficult to manage with conventional therapies. The patient showed remarkable improvement in symptoms and lesion clearance after starting tofacitinib, suggesting a promising role for JAK inhibitors in this dermatosis. However, it is important to acknowledge some limitations and critical considerations. Firstly, the exact pathogenesis of chronic actinic dermatitis remains unclear, with proposed mechanisms including delayed-type hypersensitivity reactions mediated by T cells. While the response to tofacitinib supports the involvement of JAK-STAT inhibition in suppressing T cell-mediated diseases, the precise mechanisms of action in chronic actinic dermatitis require further elucidation. Secondly, while the reported case demonstrates a favorable

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outcome without adverse effects, it is essential to consider the potential risks associated with tofacitinib use. Adverse effects such as bone marrow suppression, liver function abnormalities, hyperlipidemia, and reactivation of infections have been documented with tofacitinib therapy. Regular monitoring of patients receiving tofacitinib is crucial to detect and manage any adverse events promptly. Additionally, the evidence presented in the case report is primarily based on anecdotal observations and a limited number of case reports and series. Further well-designed, controlled studies are necessary to establish the efficacy, safety profile, optimal dosing regimens, and long-term outcomes of tofacitinib in chronic actinic dermatitis.

In summary, while the reported case suggests a potential therapeutic role for tofacitinib in refractory chronic actinic dermatitis, cautious interpretation is warranted, and more robust clinical evidence is needed to support its widespread use in this context.

2. Successful Treatment of Chronic Actinic Dermatitis with Tofacitinib

Zhong J, Ali K, Yang P, Zhao X, Wu L. Successful Treatment of Chronic Actinic Dermatitis with Tofacitinib. Clin Cosmet Investig Dermatol. 2024;17:399-407.

Abstract

This case report presents a 58-year-old male patient with chronic actinic dermatitis (CAD) characterized by pruritic plaques and papules exacerbated by sunlight. Despite previous treatments, the patient's condition worsened. A combination therapy including tofacitinib, a Janus kinase (JAK) inhibitor, provided significant symptom improvement with no adverse effects, demonstrating its potential as an effective treatment for CAD. The patient exhibited persistent, pruritic plaques and papules on sun-exposed areas, worsening with sunlight exposure. A skin biopsy confirmed CAD. Tofacitinib, along with halometasone ointment and oral ebastine, was administered, resulting in significant symptom improvement over four months without adverse effects. The patient experienced no recurrence six months post-treatment.

COMMENT

This case report highlights the successful use of tofacitinib in treating a patient with CAD, a rare and persistent photodermatosis that had not responded to conventional treatments. The patient, a 58-year-old male, presented with pruritic plaques and papules on sun-exposed areas. Despite previous treatments with glucocorticoid ointments and antihistamines, the symptoms worsened. A skin biopsy confirmed CAD, and the patient was started on tofacitinib, which led to significant improvement over four months, with no recurrence after six months. CAD is a challenging condition that severely impacts quality of life, often requiring strict sun protection and various

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treatments that may have limited efficacy or adverse effects. This report demonstrates that tofacitinib, a JAK inhibitor, can be an effective alternative in cases resistant to standard therapies. The case adds to growing evidence supporting the use of JAK inhibitors in managing CAD, providing a new therapeutic avenue for patients who have exhausted conventional options.The findings suggest that JAK inhibitors like tofacitinib could offer sustained symptom relief in CAD, although further studies are needed to confirm long-term safety and efficacy. The case also underscores the importance of personalized treatment plans, particularly for conditions as complex and debilitating as CAD.

Limitations: This report is based on a single case, and the findings may not be generalizable. Additionally, while tofacitinib was well tolerated in this patient, potential long-term adverse effects require further investigation.

3. Tofacitinib Citrate for the Treatment of Refractory, Severe Chronic Actinic Dermatitis

Vesely MD, Imaeda S, King BA. Tofacitinib citrate for the treatment of refractory, severe chronic actinic dermatitis. JAAD Case Rep. 2016;3(1):4-6.

Abstract

Chronic actinic dermatitis (CAD) is a rare inflammatory skin condition that primarily affects men over 50 years old, characterized by dermatitis on UV-exposed skin with sparing of sun-protected areas. The pathogenesis is thought to involve lymphocyte recognition of UV-induced neoantigens, potentially with cross-reactivity to exogenous allergens. Standard treatments, including topical corticosteroids, calcineurin inhibitors, and various immunomodulatory agents, often have limited success. This case report describes a man in his 60s with severe, refractory CAD who achieved near-complete remission with the Janus kinase (JAK) 1/3 inhibitor, tofacitinib. After numerous conventional therapies failed, the patient experienced rapid improvement within days of starting tofacitinib, with sustained remission over 12 months, albeit with an episode of herpes zoster. This case highlights the potential of JAK inhibition as a novel therapeutic option for severe CAD.

COMMENT

The case report offers valuable insight into the management of refractory CAD, a condition for which there are limited effective treatments. The rapid and sustained response to tofacitinib, a JAK inhibitor, highlights its potential as an alternative therapy, especially for patients unresponsive to conventional treatments. The report adds to the growing body of evidence supporting the use of JAK inhibitors in various T cell-mediated dermatoses, offering a promising therapeutic avenue for CAD.

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Limitations: Despite its strengths, the report has limitations. The case study focuses on a single patient, limiting the generalizability of the findings. The occurrence of herpes zoster as an adverse effect raises concerns about the safety of long-term JAK inhibition, particularly in older adults with compromised immunity. Additionally, the pathogenesis of CAD remains unclear, and while this case suggests a possible role for JAK inhibition, further research is necessary to confirm its efficacy and safety across a broader population. The lack of detailed exploration into alternative explanations for the patient's remission, such as spontaneous improvement, also weakens the strength of the conclusions drawn.

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Year Book of JAK Inhibitors

Salient Features

- This book covers selected articles on the use of and recent advances in different JAK inhibitors.
- Different indications, e.g., alopecia areata, psoriasis, atopic dermatitis, vitiligo, granuloma annulare, bullous pemphigoid, chronic actinic dermatitis, lichen planus, and prurigo nodularis, of different JAK inhibitors (tofacitinib, abrocitinib, baricitinib, and ruxolitinib) have been widely reviewed.
- Each published article on the above drugs in different indications has been reviewed with an abstract of study and critical comments on the shortcomings and strengths of the study.



Sanjeev Gupta MD DNB MNAMS is working as Professor and Head, Department of Dermatology, MM Institute of Medical Sciences and Research MM(DU), Mullana, Ambala, Haryana, India. He is a member of most of national and international academic societies. He has around 170 publications, 4 books, 17 book chapters to his credit. He has invented many dermatological techniques and instruments to simplify the procedures and reduce the cost. Twenty-six of such inventions have been published in the most prestigious journal of dermatology—Journal of the American Academy of Dermatology USA. He was awarded with "Making a Difference" award by the American Academy of Dermatology, USA. He is the first Indian to be honoured with this prestigious award. He had served his professional association [Indian Association of Dermatologists, Venereologists, and Leprologists (IADVL)] as Executive Committee Member at the state level as Treasurer, Secretary, Vice President, and President and also at the National level as Joint Secretary and Vice President IADVL. He was honoured with the LN Sinha Award by IADVL in 2013 and the ACSI Innovation Award 2021 by the Association of Cutaneous Surgeons of India (ACSI).



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