

Case Report

Effectiveness of Yoga and Naturopathy in Managing IgE-Mediated Dermatitis: A Case Report

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ABSTRACT

IgE dermatitis is a chronic inflammatory skin disease associated with increased serum IgE levels and sensitization to a number of stimulant such as inhalants, food, and microbial allergens. An 18-year-old male patient, came with a complaint of severe itching and redness along with pain and swelling, then he was followed up in the outpatient department on inspection, we noted small papule-like lesions that have been oozing, especially seen over the neck region and on the elbows of the hands, for the past 5 months. His Serum IgE level was 350 IU/mL. He was diagnosed with a case of IgE-mediated dermatitis. He underwent Yoga and Naturopathy treatments for 5 months. Based on the parameters observed, serum IgE, EASI (Eczema Area and Severity Index), SCORAD (Scoring atopic dermatitis), and VAS (visual analogue scale) post-intervention showed improved changes, which indicates positive improvements in the condition. This result has proven the efficacy of Yoga and Naturopathic interventions in treating IgE-mediated dermatitis, helping to reduce the severity of symptoms and improves quality of life by quickening healing.

Key words: IgE Dermatitis, Immune dysregulation, Pruritis, Yoga and Naturopathy

Immunoglobulin E (IgE)-associated dermatitis, often referred to as atopic dermatitis (AD), is a chronic, relapsing, and highly pruritic inflammatory skin condition characterized by elevated serum IgE levels and heightened sensitization to environmental triggers such as food allergens, microbial antigens, and inhalant particles. These stimuli can induce acute IgE-mediated mast cell activation, contributing to both immediate hypersensitivity reactions and prolonged inflammatory responses [1]. IgE causes IL-1, IL-3, IL-4, IL-5, IL-6, GM-CSF, and TNF α to be synthesized and released by binding to basophils and mast cells. These cytokines play an important role in the late phase of allergic response [2].

Globally, atopic dermatitis is estimated to affect 15–20% of children and 1–3% of adults, with the majority presenting symptoms before the age of 12. Although prevalence varies across regions, recent epidemiological data suggest a rising trend in industrialized nations, with a doubling or tripling of cases over the last few decades [3]. Current treatment strategies for IgE-mediated dermatitis primarily involve topical corticosteroids, calcineurin inhibitors, systemic antihistamines, immunosuppressants (e.g., cyclosporine), biologics such as dupilumab, and lifestyle modifications

aimed at allergen avoidance. While these methods offer symptomatic relief, they are often associated with side effects, recurrence upon discontinuation, and limitations in addressing the root cause of immune dysregulation [4].

In contrast, Yoga and Naturopathy are drug-free and non-invasive systems of complementary and alternative medicine (CAM) that offer holistic, patient-centred approaches targeting the mind-body connection and natural healing processes [5]. These modalities emphasize dietary correction, detoxification techniques, stress reduction through asanas and pranayama, therapeutic baths, and herbal applications [6]. Unlike pharmacological interventions, they are generally considered safe, devoid of adverse effects, and increasingly recognized as effective adjunctive therapies for chronic inflammatory conditions, including dermatological disorders [7]. This case study aims to explore the effectiveness of Yoga and Naturopathy intervention on IgE-mediated dermatitis.

CASE REPORT

An 18-year-old male patient had an online appointment and came to the hospital for consultation with a complaint of severe itching and redness. On inspection, we noted swelling with small papule-like lesions that have been oozing, especially seen over the neck region and on the elbows of both

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hands, for the past 5 months. A foul smell was present, with a thick, serious discharge. On palpation, there was tenderness over the lesions with elevated local temperature and surrounding indurations. He underwent allopathic medication for the past 5 months, then discontinued. Later, he underwent yoga and naturopathy treatment, and the prognosis was noted and reported. The recommended outcomes are complete blood count (CBC), VAS (visual analogue scale), Eczema Area and Severity Index (EASI), followed by SCORAD. EASI exhibited with four signs: erythema, excoriation, swelling, and lichenification, range: 0-72; Score: Clear—0, Almost Clear—0.1 to 1.0, Mild—1.1 to 7.0, Moderate—7.1 to 21.0, Severe—21.1 to 60.0, Very Severe—50 to 72.0 [8].

SCORAD exhibited with six signs: erythema, excoriation, swelling, oozing/crusting, lichenification, dryness on 8 body sites, pruritus, and sleeplessness; range: 0-103; Score: Mild—<25, Moderate—25 to 50, Severe—>50 [9]. Visual analogue scale (VAS): a validated subjective measure for both acute and chronic pain is the visual analogue scale (VAS). Based on self-reported measures of symptoms, scores are calculated.

These measures are recorded with a single handwritten mark at one location along a 10cm line, which represents a continuum between the two ends of the scale:" pain" in the elbow region (6 cm) and "worst pain" in the neck region (8 cm), marked during consultation [10].

And after the Yoga and Naturopathy Interventions (details of intervention given in Tables 1 and 2), the outcomes are as follows: Serum IGE levels range from 350 IU/mL to 193.6 IU/ML and then reduced to 173.0 IU/ML at 18/4/2025. Along with this complete blood routine was examined: leukocytes were initially at 4600 cells/cu.mm, and then in post, the level increased up to 6800 cells/cu.mm, although the neutrophil level changed from 47% to 70% and the lymphocyte level from 42% to 25%. Also, skin lesions showed changes (Figures 1 to 6). Visual Analogue Scale range on the elbow joint reduced from 6 to 0, and on the neck region, the range reduced from 8 to 0. The score of EASI ranged from 65 to 1.0, and the score of SCORAD changed from 46 to 3. The baseline and post-assessment data are given in Table 3.

Table 1: Details of the Intervention

Treatment	Duration	Frequency
Neutral water Enema	15 Minutes	Twice A Week.
Mudpack To Eyes and Abdomen	20 Minutes	Daily Morning and Evening [Twice A Day] Before Food.
Sun Bath	20 Minutes	Every morning at Around 7 AM.
Oil Pulling	20 Minutes	Once A Time at Day, In the Morning, An Empty Stomach
Ganji turmeric Application	30 Minutes	Every 3 Days in a Week, Once a Time at Around 10 AM
Neem paste Application	30 Minutes	Every 2 Days in a Week, Once A Time at Around 10 AM
Neutral Epsom Salt Bath	30 Minutes	Every day, Morning After Applications.
Neutral Arm Bath With Epsom Salt	20 Minutes	Every Day at Around 2 PM.
Nadishodhana, Surya bhedana, Bhramari Pranayama	30 Minutes	Every Day at Around 5 PM.
IRT, QRT Technique, And MSRT Meditation.	30 Minutes	Every Day Once a Time at Around 8 PM

Table 2: Diet advice for inclusion

TIME	DIET THERAPY
6:30 – 7 AM	Wheat grass juice / Bermuda grass juice
8:30 – 9 AM	Seasonal fruit salad (Muskmelon, Papaya, Pomegranate, Guava, Amla) and vegetable soup /buttermilk.
11 AM	1 Whole Fruit (Seasonal Fruit) or Fruit juice.
1 – 2 PM	Boiled Vegetables (Cabbage, Pumpkin, Ivy gourd, Ridge gourd, Radish, and Carrot with turmeric, black pepper, and salt) with grated coconut 200 grams.
7 PM	Raw vegetable salad (Cucumber, Cabbage, and Beetroot with salt and black pepper) or boiled green gram.

Table 3: Outcomes of the case report

INVESTIGATION	11/11/2024	22/2/2025	18/04/2025
Total serum IgE	350 IU/ML	193.6 IU/ML	173.0 IU/ML
Haemoglobin	15.5 gm/dl	12 gm/dl	13.2 gm/dl
RBC	5.67 million/cu.mm	4.22 million/cu.mm	4.61 million/cu.mm
PCV	47.1%	37.8%	38.4%
WBC	4600 cells/cu.mm	5700 cells/cu.mm	6800 cells/cu.mm
Platelet count	2.45 lakhs/cu.mm	2.07 lakhs/cu.mm	2.30 lakhs/cu.mm
MCV	83.0 fl	81.4 fl	80.9 fl
MCH	27.4 pg	29.9 pg	28.4 pg
MCHC	33.0%	31.7%	32.0%
Neutrophil	47%	65%	70%
Lymphocytes	42%	30%	25%
Eosinophil	04%	02%	02%
Monocytes	05%	03%	03%
Basophils	0%	0%	0%
VAS	8	6	0
EASI	72	65	1.0
SCORAD	80	46	3

SKIN LESION ON NECK



Figure 1: 11/11/2024 DAY 1 – Neck



Figure 3: 18/04/2025 AFTER 5 MONTHS – Neck

SKIN LESION ON ELBOW



Figure 2: 22/2/2025 AFTER 3 MONTHS - Neck



Figure 4: 11/11/2024 DAY 1



Figure 5: 22/2/2025 AFTER 3 MONTHS



Figure 6: 18/04/2025 AFTER 5 MONTHS.

DISCUSSION

The present findings demonstrate that Yoga and Naturopathy interventions significantly contributed to clinical and biochemical improvements in a patient with IgE dermatitis. Post-intervention assessments revealed notable reductions in Eczema Area and Severity Index (EASI), Scoring Atopic Dermatitis (SCORAD), weight, blood pressure, and pulse rate [Table 3], reflecting a systemic response to the therapeutic approach. Specifically, after five months of consistent Yoga and Naturopathy practices, the patient's baseline immunoglobulin E (IgE) level, EASI score, and SCORAD score were substantially reduced. Furthermore, small popular lesions had completely resolved, with no recurrence observed during the follow-up period.

Yoga-based mindfulness practices have been shown to downregulate pro-inflammatory cytokines and stress biomarkers, including interleukin-6 (IL-6), tumor necrosis factor-alpha (TNF- α), and cortisol. Such interventions are also known to reduce serum IgE levels, indicating a potential mechanism by which mind-body practices can ameliorate hypersensitivity-related skin disorders [11]. Among the naturopathic interventions, enema therapy has been traditionally recognized as a hepatic stimulant, promoting detoxification via enhanced portal circulation. This process is

thought to mildly elevate blood pressure, improve cardiac output, and stimulate renal excretion [12]. These physiological changes may facilitate systemic cleansing and support immune modulation. Turmeric (*Curcuma longa*), a widely used medicinal spice, contains curcumin, a polyphenol with well-documented anti-inflammatory, antioxidant, antimicrobial, and antineoplastic properties. Evidence suggests its utility in various dermatologic conditions due to its ability to downregulate inflammatory pathways [13].

Epsom salt (magnesium sulfate) baths are also considered effective in the management of inflammatory dermatoses. Their anti-inflammatory properties assist in reducing pruritus and inflammation. Transdermal absorption of magnesium may restore skin barrier function and decrease systemic inflammation, making it a useful adjunct in eczema management [14]. Mud therapy has been shown to exert physiological effects by modulating endogenous stress-regulating molecules such as nitric oxide and glutathione peroxidase, and may also stimulate endorphin production, thereby contributing to stress reduction [15]. While sun exposure in moderation can have therapeutic effects, it can also lead to immunogenic modifications in keratinocytes [16].

Pranayama, a yogic breathing technique, has been found to reduce sympathetic nervous system activity while enhancing parasympathetic tone. It increases baroreceptor sensitivity and improves tissue oxygenation, contributing to systemic relaxation and reduced stress levels, factors intricately involved in the pathophysiology of atopic dermatitis [17]. Neem (*Azadirachta indica*) exhibits strong antimicrobial and antioxidant properties due to its bioactive constituents such as quercetin, β -sitosterol, azadirachtin, and gedunin. These phytochemicals enhance the skin's defense mechanisms and aid in reducing microbial-induced flares in dermatitis [18].

Additionally, vitamin E, a potent lipophilic antioxidant, has been shown to lower prostaglandin synthesis and IgE levels in patients with allergic dermatoses. The incorporation of such antioxidant-rich interventions helps mitigate oxidative stress, which is increasingly recognized as a contributing factor in chronic inflammatory skin conditions [19, 20]. However, this is a single case study whose results cannot be generalized. So, it stresses the importance of future mechanistic studies in Yoga and Naturopathy intervention with larger samples.

CONCLUSION

The integrative approach involving Yoga and Naturopathy not only addressed the clinical symptoms but also targeted the underlying systemic inflammation and stress responses contributing to IgE dermatitis. These findings support the incorporation of mind-body and Naturopathic practices as a complementary strategy in the holistic management of atopic and allergic dermatological disorders.

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