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CASE STUDY

Reduction of Pain and Steroid Use in Polymyositis with Full Spectrum Medical Cannabis Tincture: A Case Report

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ABSTRACT

Background: Idiopathic inflammatory myopathy (IIM) is an autoimmune disorder causing muscle inflammation and weakness, with polymyositis (PM) being one of its subtypes. Conventional treatments, such as corticoids and immunosuppressants, have limitations, promoting the exploration of alternatives like medical cannabis. Cannabinoids, particularly cannabidiol (CBD), have shown potential in reducing inflammation through CB2 receptor modulation.

Methods: A 21-year-old female with Polymyositis PM was treated with a combination of conventional medication and medical cannabis products (CannazoIndia Full spectrum tincture, Hevert Pain Relief).

Medication used: CannazoIndia Full spectrum Tincture 3000mg (Vijaya leaf extract and hempseed oil) Hevert Pain Relief: The inactive ingredients include lactose and magnesium stearate. (Arnica montana radix (4X): 80 mg and Rhus toxicodendron (6X): 20mg)

Result: The patient showed gradual improvement in pain management, with a decrease in pain scale from 10 to 2 (80% improvement). The use of conventional injections decreased significantly

Conclusion: Cannabinoid-based therapy may offer a promising alternative for managing PM symptoms, and reducing pain and inflammation.

Key Words *Polymyositis, Cannabidiol (CBD), Medical Cannabis, Pain management, Steroid reduction*

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INTRODUCTION

Idiopathic inflammatory myopathy (IIM) is an autoimmune disorder characterized by the presence of autoantibodies against unidentified muscle autoantigens, leading to muscle inflammation and progressive proximal muscle weakness. The condition includes subtypes such as polymyositis (PM), dermatomyositis (DM), inclusion-body myositis and immune-mediated necrotising myopathy [1].

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The combined prevalence of PM and DM is approximately 5-20 per 100,000 people, with PM most commonly diagnosed in individuals aged 50- to 60 years[1].

The disease process is driven by CD8+ T cells and macrophages, which induce muscle fibre necrosis and inflammation through the release of cytokines like IL-21 and IL-17 [2].

Conventional treatment for PM typically involves corticosteroids, immunosuppressants, immunoglobulins and plasmapheresis aimed at reducing inflammation and combating the autoantibodies. However, these treatments have limitations, such as corticosteroids-induced osteonecrosis the lack of a single immunosuppressant and the high cost and limited efficacy of plasmapheresis [3].

Emerging alternatives, such as medical cannabis, are being explored for their potential therapeutic benefits. cannabinoid 2 (CB2) receptors are upregulated in conditions like DM and the synthetic drug Lenabasum™ has shown promising results in reducing inflammation through CB2 receptor modulation along with a decrease in IFN- β and IFN-γ expression [4, 5].

Cannabinoids, including cannabidiol (CBD), are also known to interact with CB2 receptors, potentially offering a novel approach to treating IIMs like PM [6].

Although there aren't many case studies on the use of cannabis for treating PM, previous studies revolving around the use of cannabinoids like CBD and AJA for inflammatory conditions like arthritis and DM suggest that CBD may also help in the treatment of PM by reducing inflammation and pain. Thus, this case report explores the use of a full-spectrum medical cannabis leaf extract as a potential treatment for PM because of its anti-inflammatory properties.

METHODS

Case Presentation

Symptoms of polymyositis gradually develop throughout 8 to 10 months. Diagnosis is delayed, because, unlike in dermatomyositis, no associated rash occurs before the onset of muscle disease. Family history and medication history are important in excluding other causes of myopathy. The history of the patient with polymyositis or dermatomyositis typically includes the following:

A 21-year-old female patient presented with the following symptoms: chronic pain in the right thigh, stiffness all over the body, pain radiating to the lower back and knee, aggravation at night, and burning sensation in both upper and lower limbs. The patient also reported having no menstruation for the last 5 to 6 months.

She experienced more stiffness in the right shoulder than in the left. After a month, pain developed in the left thigh and lower back which was ameliorated by movement. Due to the pain, the patient was unable to stand for more than 5 minutes and experienced sleep disturbances.

The patient took conventional medications including diclofenac and dexamethasone injection which relieved her symptoms to some

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extent; however, she wants to explore alternative medicine to relieve her other symptoms.

She had frequent mood swings and anxiety while her behaviour was characterised by irritability, aggression and excessive crying. She also experienced headaches, coughing, sneezing and loss of appetite along with weight loss and generalised anorexia. She also experienced a slowness in activity, lacked concentration and had thought of suicide.

Medications used:

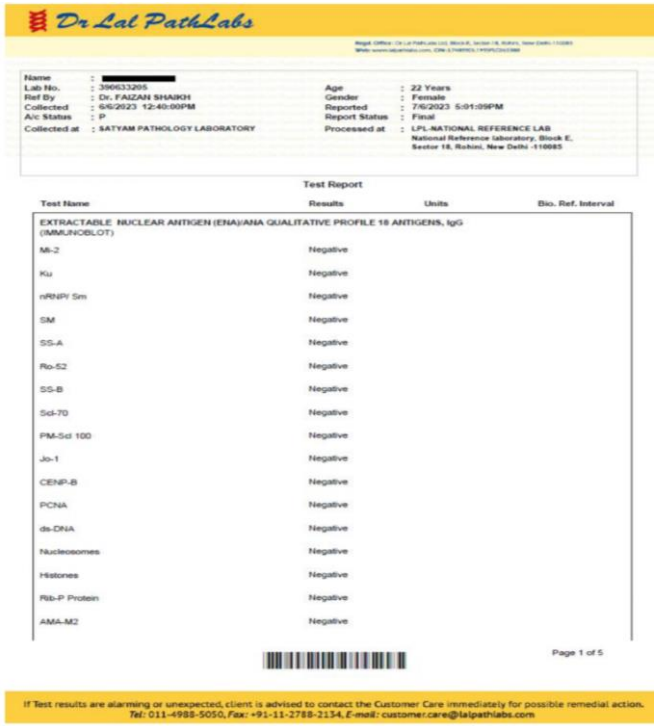
CannazoIndia Full spectrum tincture (3000mg) 15ml Vijaya (medical Cannabis) leaf extract and MCT (Medium-Chain Triglyceride) oil. Per ml: 3000/15= 200mg. Manufactured by Hexorp Nanotech Pvt.Ltd.

Habbe gule ***aakh***: Contains: Zanjabeel Zingiber officinalis Roscoe.100, FilfilSiyah Pipernigrum Linn., GuleMadar Calotropis gigantea Linn., Barge Bans Bambusa arundinacea Willd.

Hevert Pain Relief: The inactive ingredients include lactose and magnesium stearate. (Arnica montana radix (4X): 80 mg and Rhus toxicodendron (6X): 20mg) (Figure 1), (Figure 2), (Figure 3), (Figure 4).

The following imaging was also done:

- USG ABP. Polycystic ovaries, Hepatomegaly
- MRI LS Spine with S/C PBH and S/C B/L thigh: Early changes of lumbar spondylosis in the form of multilevel Schmorl's nodes and mild disc bulges. Indenting thecal sac without spinal canal or neural foraminal stenosis. Screening of the pelvis with both hip joints and both thighs reveals no significant abnormality.


Dr Lal PathLabs

Test Report

Test Name	Results	Units	Bio. Ref. Interval
EXTRACTABLE NUCLEAR ANTIGEN (ENA)/ANA QUALITATIVE PROFILE 18 ANTIGENS, IgG (IMMUNOBLOT)			
Mi-2	Negative		
Ku	Negative		
nRNPI Sm	Negative		
SM	Negative		
SS-A	Negative		
Ro-52	Negative		
SS-B	Negative		
Scl-70	Negative		
PM-Scl 100	Negative		
Jo-1	Negative		
CENP-B	Negative		
PCNA	Negative		
ds-DNA	Negative		
Nucleosomes	Negative		
Histones	Negative		
Rib-P Protein	Negative		
AMA-M2	Negative		

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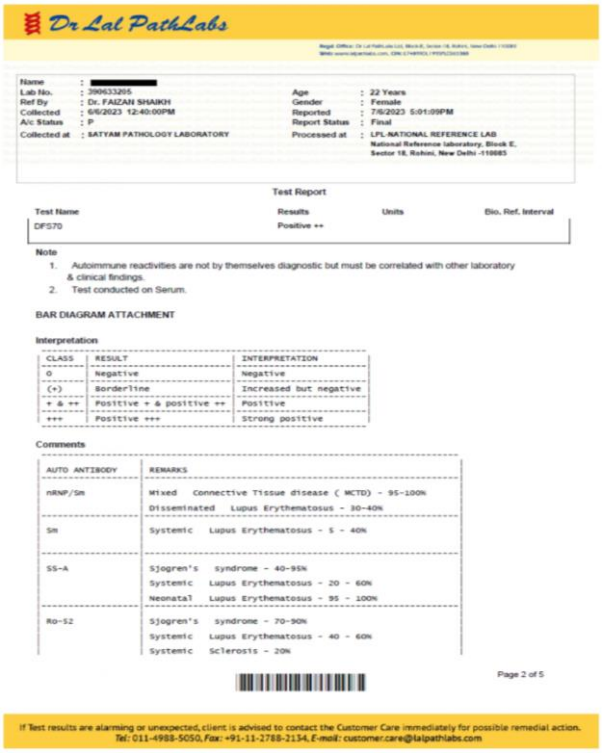
If Test results are alarming or unexpected, client is advised to contact the Customer Care immediately for possible remedial action.

Figure 1 Blood test report from Dr. Lal PathLabs, detailing the results of autoimmune, biochemical, and systemic health parameters across multiple pages


Dr Lal PathLabs

Test Report

Test Name	Results	Units	Bio. Ref. Interval
DFS70	Positive ++		

Note
1. Autoimmune reactivities are not by themselves diagnostic but must be correlated with other laboratory & clinical findings.
2. Test conducted on Serum.

BAR DIAGRAM ATTACHMENT

Interpretation

CLASS	RESULT	INTERPRETATION
0	Negative	Negative
(+)	Borderline	Increased but negative
+ & ++	Positive + & positive ++	Positive
+++	Positive +++	Strong positive

Comments

AUTO ANTIBODY	REMARKS
nRNP/Sm	Mixed Connective Tissue disease (MCTD) - 95-100% Disseminated Lupus Erythematosus - 30-40%
Sm	Systemic Lupus Erythematosus - 5 - 40%
SS-A	Sjogren's syndrome - 40-95% Systemic Lupus Erythematosus - 20 - 60% Neonatal Lupus Erythematosus - 95 - 100%
Ro-52	Sjogren's syndrome - 70-90% Systemic Lupus Erythematosus - 40 - 60% Systemic Sclerosis - 20%

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If Test results are alarming or unexpected, client is advised to contact the Customer Care immediately for possible remedial action.

Figure 2: Blood test report from Dr. Lal PathLabs, detailing the results of autoimmune, biochemical, and systemic health parameters across multiple pages

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Figure 4: Blood test report from Dr. Lal PathLabs, detailing the results of autoimmune, biochemical, and systemic health parameters across multiple pages.

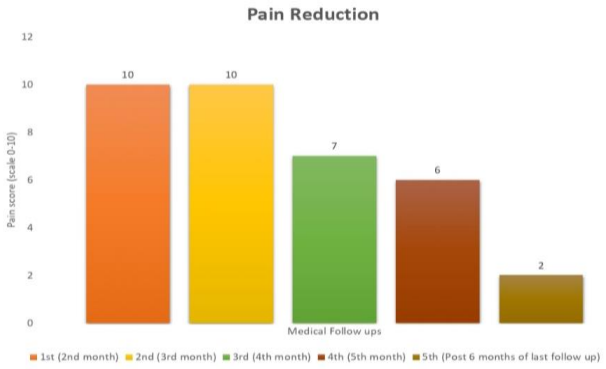

Figure 5 Pain Score of the patient measured using NRS.

The first prescription given on 23.01.2023 consisted of Hevert Pain Relief x BD, Cannazo India Full spectrum tincture 3000mg x 10 drops HS and Habbe Auja x BD. Follow-ups were taken around monthly. At each follow-up, her condition was tracked using the Numerical Rating Scale (NRS) for pain, in addition to subjective assessments of her emotional state and sleep quality.

In the first follow-up on 26.02.2023, the patient experienced severe backache with pain in the neck and shoulders (more pain in the right shoulder) without any change in the intensity and frequency of pain. She used the Diclofenac + Dexamethasone injection 8 times in a month. The pain scale score was a 10. Her prescription was modified to: Hevert Pain Relief Tablet TDS, CannazoIndia Full spectrum tincture 3000mg; 12 drops OD.

Her second follow-up was on 25.03.2023, and her pain scale score was still 10. However, she reported that 2-3 days were better in the last month. Moreover, she only used the injection 6 times in the last month. Her prescription was modified to: Hevert Pain Relief Tablet TDS, Habbe Gule Akh TDS, CannazoIndia Full spectrum tincture 3000mg; 15 drops OD.

In her third follow-up on 24.04.2023, her pain scale score was 7. She experienced some sleep discomfort, headache, and exhaustion due to pain. The intensity of her pain kept fluctuating in the last month. Her prescription was not changed.

In her last follow-up on 03.05.2023, her pain scale score decreased to 6 and her pain improved. She felt exhausted after travelling and her sleep was still disturbed but improved from past months. She was able to sleep for five to six hours every night. However, she stopped taking the injection. Her prescription was unchanged.

In her follow-up conducted six months later, the pain scale score had further decreased to 2. She

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continues to maintain this improvement with a daily maintenance dose of 6 drops of full spectrum medical cannabis oil, without the use of any allopathic medication. This shows a progressive reduction in pain score, from severe (10) initially to 2 (mild) at 6 months post follow-up, as measured with the help of NRS (Numerical Rating Scale). (Image 5)

RESULTS

The 21-year-old female patient exhibited progressive improvement in pain management over the course of treatment. Her initial pain score of 10 reduced to 6 by the final follow-up. The frequency of conventional corticosteroid injections, which was up to 8 times a month, reduced steadily and eventually ceased. Although she continued to experience occasional fluctuations in pain, sleep disturbances, and fatigue, notable symptomatic relief was observed. The consistent use of alternative therapies—including CannazoIndia Full spectrum tincture and Hevert Pain Relief played a significant role in her clinical progress. By the end of the observation period, the patient had completely discontinued all allopathic medications and is using medical cannabis extract tincture (full spectrum CBD) oil regularly, reporting marked improvement in her overall condition.

DISCUSSION

In Polymyositis, an autoimmune disorder, the immune system attacks the skeletal muscle, leading to inflammation and progressive muscle weakness, primarily affecting the torso.

This is characterised by muscle biopsies showing perimysial and endomysial mononuclear cell infiltrates, necrobiosis, variation in myofiber diameter, and increased perimysial and endomysial connective tissues. Polymyositis has a complicated pathophysiology that includes both innate and adaptive immune immunological mechanisms.

Cytotoxic CD8+ T-cells play a critical role in some subtypes of idiopathic inflammatory myopathies, while B cells contribute notably to dermatomyositis. Recent research suggests that both humoral and cellular adaptivity immunity, alongside innate immunity, contribute to disease mechanisms. The overexpression of specific autoantigens, such as TIF1-γ in cancer-associated DM and experimental evidence from autoantibody transfer, support the pathogenic of myositis-specific autoantibodies.

Non-immune mediated variables may also play a role in pathogenesis: IIM has been linked to anomalies of cellular autophagy, endoplasmic reticulum stress, heat shock response, muscular hypoxia and reactive oxygen species. To put it briefly, these processes produce a positive loop with inflammation, which in turn causes disease damage with atrophy and permanent changes to muscle fibres as well as reduced muscular contraction and muscle protein dyshomeostasis.

The most common subtypes of IIM; dermatomyositis and immune-mediated necrotizing myopathy, have been linked to a

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number of disease mechanisms. We got into detail about the roles played by the humoral immune response (B cells and antibodies), complement system abnormalities and over-expression of the interferon pathway [7].

Animal studies and clinical studies have shown that CBD can potentially decrease inflammation and inflammatory pain by interacting with CB2, majorly, and cannabinoid 1 (CB1) receptors as well [8].

Thus, cannabinoids like CBD are used in the treatment of many painful inflammatory diseases like rheumatoid arthritis, osteoarthritis and DM with the potential to be used for PM as well [9, 10].

An *in vitro* cell study found that CBD improves arthritic parameters under inflammatory conditions [10]. In a cross-sectional study by Frane et al. (2022), the use of CBD by arthritic patients was associated with an 83% improvement in pain, 66% improvement in physical function and 66% improvement in sleep [10].

These studies suggest that CBD might also produce anti-inflammatory effects in other inflammatory cell environments like those in IIMs such as PM.

An *in vitro* study investigated the effect of a phytocannabinoid called ajulemic acid (AJA), a CB2 agonist, on the production of inflammatory cytokines in the blood of DM patients. Increasing the concentration of AJA led to decreased expression of IFN-α, IFN-β and TNF-α in blood samples, thus decreasing inflammation [11]. This indicates that phytocannabinoids which interact with CB2 receptors like AJA and CBD can potentially be used to treat DM, and possibly PM as well.

CONCLUSION

This case study highlighted the potential role of cannabinoids-based therapy as an adjunct in the management of polymyositis. The patient demonstrated a gradual reduction in pain intensity, with the pain scale decreasing from 10 to 2 over the treatment period. The frequency of corticosteroid injections also declined significantly, eventually ceasing altogether. Although symptoms such as fatigue and sleep disturbances persisted, the patient experienced overall improvements in pain, sleep and the quality of life. These clinical observations supported the need for further investigation into cannabinoid formulations as complementary therapeutic options for idiopathic inflammatory myopathies like polymyositis.

Abbreviations

IIM: Idiopathic inflammatory myopathy

PM: polymyositis

CBD: cannabidiol

DM: dermatomyositis

CB2: cannabinoid 2

MCT: Medium-Chain Triglyceride

TDS: Three times a day

NRS: Numerical Rating Scale

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