CASE STUDY

SEBORRHEIC DERMATITIS TREATMENT WITH MUSTARD OIL: A CASE REPORT

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ABSTRACT

Seborrhoeic dermatitis is a chronic skin disease which is primarily associated with sp. Malassezia infection on the epidermis of the skin. The disease is characterized by massive skin exfoliation of seborrhoeic regions like forehead, behind pinna of ear, armpits, nasolabial fold, dandruff in the scalp, etc. Around 5% of general population is a victim of this disease. The patient condition often becomes a hindrance for his or her livelihood and results into low self-esteem. Modern medical therapy recommends use of selenium sulfide sulfide, azole group of antibiotics like ketokonazole, Econazole, Clotrimazole, etc. In severe cases corticosteroids like Betamethasone dipropionate (0.05% potency) is also used. But all these have not given clinically efficient results. The clinical symptoms visible in this disease are scaling or exfoliation of skin; redness and swelling of affected regions along with itching. Neutrophilic infiltration in the epidermal crust and dense presence of inflammatory mediators in the region are found in the region on performing histological studies using skin biopsy.

In the ancient Indian medical system of Ayurveda, mustard oil or Sarshapa taila has been characterized as deep penetrating, hot potency, pungent smelling fluid effective against skin itching and urticaria. This is a case report of experimental mustard oil therapy on a patient with Seborrheic dermatitis. It is being addressed to the global health community from both the fields of modern medicine and Ayurveda to carry a much deeper study on the topic and the therapy method which is being shown in this research.

KEYWORDS: Seborrhoeic dermatitis, Seborrhea, Ayurveda, Mustard oil, Sarshapa taila, Dermatology, Venerology, Kayachikitsa

INTRODUCTION

Seborrhoeic dermatitis is a dreadful chronic skin disorder, affecting almost 5% of general population. Despite high advancement in clinical dermatology, there is lack of knowledge about etiology of the disease. Redness, itching, inflammation, scaling of skin are common symptoms with impaired function of sebaceous glands. Sebum producing areas of skin like scalp, chest, underarm, genital region, etc are most common areas of clinical manifestations. Infection by sp. Malassezia is one of the primary etiological factors, as understood in dermatology till date. Often auto-immune disorders, HIV infection, Parkinson's disease have been linked to it, but not with phenomenal explanation. Vitamin B6 deficiency has also been found be a reported reason. Histo-pathological studies reveal spongiosis and psoriasiform hyperplasia with follicular plugging in the acute phase. Neutrophil infiltration in the crust is evident in chronic phase[1] (Tongyu C, 2019, Pages 991-1001). Inflammatory markers like IL-1, IL-6, TNFα, IL-12, IL-4 and IFNy has been found in the epidermis and around the follicles of diseased skin. Though, in most of the literature sp. Malassezia has been sited to be the most responsible etiological factor for Seborrhoeic dermatitis[2] (Ilko Bakardzhiev, 2017).

The disease being found in young adults and middle aged persons, often becomes a reason for depression and social disturbance for the affected individuals. Although not life threatening but has to been taken into serious consideration for safeguarding livelihood of the population. Modern medical therapy recommends use of selenium sulfide sulfide, azole group of antibiotics like ketokonazole, Econazole, Clotrimazole, etc. In severe cases corticosteroids like Betamethasone dipropionate (0.05% potency) is also used.[3] (Neena Khanna, 2011).

MATERIALS AND METHODS

A thorough physical examination of the patient was carried out. Clinical blood tests were...
Primary Complaint
The patient had complaint of drying of skin. He complained of itchy, red forehead, increased dandruff, dandruff of facial hair, maxillary region and nasolabial folds. He had itchy scalp as well. The problem was so severe that it was noticeable by surrounding people and the patient felt timid and humiliated to attend social gatherings. The patient complained that his problems became severe around June 2019.

General Observation
From general observation– drying of skin and lack of sebum was noted on epidermis. He had intensive dandruff with inflamed and red scalp. He had red forehead with white scaling of epidermis. Scaling was observed on facial hair and maxillary region. Loss of hair was noticed. No pustules, pus, tumor, patch, papule, wheal, vesicle or erosions were noticed. Exfoliation of epidermis was very prominent and change in skin pigmentation on left frontal lobe of skull, 3cm above the supra-orbital margin was noticed.

Cardiac System
Borders of the heart on percussion were normal with left apex impulse being slightly left to mid-clavicular line on the 5th intercostals space and right sterna margin was preserved as the right borer. All heart sounds were normal on auscultation. Rhythm was sinus and regular with 78 beats per minute heart rate.

No necessity was felt for additional diagnosis.

Pulmonary System
Breathing was normal. Lung tissue was resonant on percussion and breathing was vesicular on auscultation. Equal deflection of left and right scapula was recorded on physical examination. No complaint of breathlessness. No sputum was found. No necessity was felt for additional diagnosis.
Digestive System

Normal anatomical position of Liver in left hypochondrium and stomach in right hypochondrium was noticed on percussion. No pain was reported by the patient on palpation of stomach, mesogastrium and intestine. No sound change of stomach was heard on auscultation. Stool is also passed by most, he center of linea alba in the umbilical region of mesogastrium. This was the reason behind choosing umbilicus for the therapy.

The patient voluntarily stopped therapy stating no visible cure.

Experimental Ayurvedic Therapy and Results

On diagnosis of Seborrheic dermatitis the patient was treated with daily dosage of B12 complex for 4 months, Ketoconazole cream was applied daily on forehead and maxillary area over the affected epidermis. He was kept under daily shampooing with Sodium sulphate. Minoxidil oil was used to address the hair loss issue. The therapy was started around September 2019 and was continued for 8 months.

No significant change was noticed. Exfoliation of skin continued with redness and skin itching. Loss of hair also continued and the patient lost significant amount of hair by late 2020 and baldness was visible. Little decrease in dandruff was noted on the scalp and facial hair. The skin was very dry with whitening in some portion of the forehead. The therapy was routinely clinical and recommended by most dermatologists[46] (Gary G, 2013, pg 44-49).

Clinical test report with analysis is as follows

| Test Name                  | Value | Units     |
|----------------------------|-------|-----------|
| Complete Blood Count (CBC) |       |           |
| Erythrocytes               |       |           |
| Haemoglobin                | 15    | g/dl      |
| RBC count                  | 4.9   | 10^12/l   |

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| Parameter                                      | Value  |
|------------------------------------------------|--------|
| PCV (Packed cell volume)                       | 44.9%  |
| MCV (Mean corpuscular volume)                  | 91.6 fl|
| MCH (Mean corpuscular hemoglobin)              | 30.6 pg|
| MCHC (Mean corpuscular hemoglobin concentration)| 33.4 g/dl|
| RDW CV                                         | 13.5%  |

**Leukocytes**

| Type                | Count   |
|---------------------|---------|
| WBC count total     | 7.500 Cells/μL |

**Differential Leukocyte Count**

| Type      | % |
|-----------|---|
| Neutrophil| 69 |
| Lymphocytes| 25 |
| Eosinophil| 3  |
| Monocyte  | 3  |
| Basophil  | 0  |

| Type                                      | Count    |
|-------------------------------------------|----------|
| Absolute Neutrophil Count                 | 5.175 Cells/μL |
| Absolute Lymphocyte Count                 | 1.875 Cells/μL |
| Absolute Eosinophil Count                 | 225 Cells/μL |
| Absolute Monocyte Count                   | 225 Cells/μL |

| Type                | |
|---------------------|---|
| Absolute Basophil Count | 0 Cells/μL |

**Thrombocytes**

| Type       | Count   |
|------------|---------|
| Platelet Count | 172 10^9/l |
| ESR        | 8 Mm in 1hr |

**Morphology**

- RBC Morphology: Normocytic & Normochromic
- WBC Morphology: No abnormal cells found
- Platelets: Adequate

It is to be noted here that all the parameters of CBC are normal and no pathology has been recorded. Morphological structure of blood cells is also normal.

**Liver Function Test**

| Parameter                         | Value  |
|----------------------------------|--------|
| Bilirubin Total                  | 0.860 mg/dl |
| Bilirubin Direct                 | 0.26 mg/dl |
| Bilirubin Indirect               | 0.60 mg/dl |
| ALT                              | 43 U/l  |
| AST                              | 33 U/l  |
| Alkaline Phosphatase (ALP)       | 86 U/l  |
| Protein Total                    | 7.9 g/dl |
| Albumin                          | 4.7 g/dl |
| Globulin                         | 3.2 g/dl |
| Albumin/Globulin ration          | 1.5     |

Liver function test also shows all parameters to be normal.
Lipid Profile Basic

|                |        |        |
|----------------|--------|--------|
| Cholesterol Total | 182    | mg/dl  |
| Cholesterol HDL  | 46     | mg/dl  |
| Cholesterol VLDL | 32     | mg/dl  |
| Cholesterol LDL  | 104    | mg/dl  |
| Triglycerides    | 160    | mg/dl  |
| Cholesterol Total/HDL ratio | 4  |        |
| Cholesterol LDL/HDL ratio  | 2.3    |        |

The lipid profile test is also almost satisfactory. There is slight increment in Triglyceride volume and lie in the borderline high range (150-199 mg/dl). Although this should not be immediately associated with the therapy carried out until a sample population study is conducted for a statistical data. But precautions must be taken in clinical management.

The tests have been conducted in NABL accredited laboratory in India.

Before Treatment with Mustard Oil

In the above picture exfoliation of skin is visible along with redness. Healthy epidermis is visible in patches.

After 4 months of therapy with Mustard oil

In the above picture it is evident that there is no exfoliation of skin, epidermis is normal and healthy. The skin was oily on physical examination. The lost pigment of skin tone has been recovered.

CONCLUSION

Although it is a fact that without a sample population study, no therapy should be brought into clinical practice. But in this case it is also proven that modern approaches to Seborrheic dermatitis are a massive failure. Drastic suggestions like using corticosteroids and biological products like
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infliximab, adalimumab - TNFα inhibitors, anakinra–IL1 inhibitor or tocilizumab – IL6 inhibitor has also surfaced (Konerding MA, 1997, dis 711-2). If drenching umbilicus in mustard oil for a period of 4-6 months can resolve the disease completely with better results then it must be definitely advocated to be brought in daily clinical practice. This case history has imposed serious questions over the general believes regarding the disease. It is being argued by scholars that sp. Malassezia is the primary etiological factor of the disease, M. globosa and M. restricta and many other members of the species are the main reason of the epidemic (Del Rosso J. Q, 2011. pg 32-38). If sp. Malassezia is the causative agent of this disease, then the patient at the beginning must have responded to Ketoconazole. But he did not. Neither Vitamin B12 complex supplement nor sodium sulphate did any improvement. From general observation it appears that drying and de-keratinization of epidermis was the sole reason behind the disease– lack of sebum was noted before starting therapy with mustard oil and sebum returned after the therapy curing the condition. This report opens a new arena of biochemical studies in venerology as it has to be determined which compound or sequence in molecular chain binded with which receptor near umbilicus and how it might stimulate sebum production from sebaceous glands.

Through this article, a strong patient population based study of this therapy and modern biochemical study along with histological examination is being pleaded for to the global scientific community. Further improvement in the technique might be achieved only after complete understanding of the pharmacodynamics of mustard oil or Sarshapa taila.

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