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## RESEARCH PAPERS

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# EFFICACY OF AYURVEDIC FORMULATION IN THE MANAGEMENT OF VITILIGO (SHWETA KUSHTHA)

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## HISTORICAL PERSPECTIVE OF LEUCODERMA

- It is interesting to note that rig-veda in 6000 BC or earlier named skin disorder, leucoderma, as "kilas" meaning a white spotted deer.
- In 2000 BC, the reference of leucoderma was found in the ancient literature of Iran.
- In 1400 BC, Athervaveda described leucoderma (sweta kushtha) as a variety of leprosy along with prescription of several herbal remedies. Atharvaveda highlighted the value of visuchika, which was later identified with the plant Bakuchi. This was the chief therapeutic agent for treating leucoderma in India.
- A similar drug Pu-Ku-C was referred in ancient Chinese literature for treating leucoderma.
- In 13$^{th}$ century Egypt literature mentioned about the treatment of leucoderma by Egyptian herb *Ammi majus*.
- In Vinay path, Buddhist Sacred Book (624-544 BC) white spots disease was described as kilas.
- Vitiligo is also described as Shwet kushtha or kilas in ayurveda text like Charaka, Sushruta, Ashtang Sanghraha,Yogaratnakara, Bhavaprakasha nighantu.
- In society, it is considered as "stigma " thus having major negative impact on quality of life of patients, like psychology, social & family and marital relations especially for female patients.

**Definiton:**

Vitiligo is an acquired skin disorder caused by progressive melanocytopenia due to degeneration or destroyed melanocytes (melanin producing cells), resulting in de pigmentation of skin and development of white patches over the skin.

It is described under kustha roga but is not included in kustha roga.

**Prevalence/occurrence:**

- Approximately 1-2% of the world population suffers from leucoderma.
- Mostly found in India & Mexico.
- Highest prevalence in Gujarat & Rajasthan state of India.
- People with positive family history are more prone to develop the disease.
- Leucoderma disease can start at any age between childhood and old age.
- Occasionally even new born babies have been noticed to have leucoderma.
- Roughly it begins in the 2$^{nd}$ to 4$^{th}$ decade of life.
- Both the sexes are equally prone to develop the disease.

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**Common sites:**

- Hands, face, upper part of chest.
- Around body openings: Eyes, nostrils, mouth, lips, nipples, umbilicus, genitalia.
- At body folds: Armpits, groin.
- Site of injury: Cuts, scrap, burns.
- Areas immediately surrounding the pigmented moles.
- Choroid of the eyes.

**Aetiology:**

1. Developmental anomalies
2. Genetic
3. Diet (virudha ahara): like milk with fish / radish / sour fruits /sour food etc. and excess intake of bitter, warm, acidic food
4. Endocrinal causes: like hypopitutarism, hyperthyroidism, hypogonadism, Addison's disease, constant prolonged stress.
5. Indescent acts: like violation, speaking untruth, extramarital relations, dishonouring the gurus, saints, rishis, brahmins.
6. Chemical agents: like Thiouracils, mercurials, hydroquinone phenolic compounds.
7. Post inflammatory: Mechanical injury , thermal injury, radiation injury.
8. Infections : Bacterial ,fungal, viral, protozoal, helminthic
9. Nutritional deficiency : Chronic proteins deficiency, vitamin B12, deficiency or poor intake of cuprominerals.
10. Prolonged contact with rubber, plastic or any other rubbing agents like bindi, dyes, slippers etc. These chemicals may penetrate the skin & destroy the pigment producing cells i.e. melanocytes. In this case the lesion remains limited to the areas in contact.
11. Areas more prone to repeated trauma are proned areas.
12. Miscellaneous factors: Liver disorders, worm infestation, diabetes mellitus, wounds, burns, certain skin diseases, ulcerative colitis etc.

But having these diseases does not mean that one will develop vitiligo. These are more known to aggravate the condition.

**Pathogenesis:**

It is tridoshaj roga, causing rasvaha srotodushti and involving rakta, mansa, meda dushayas.

Four hypotheses have been established:

(1) Genetic hypothesis: 30-40 % patients have positive genetic history.

(2) Auto immune hypothesis: Some antigenic substances are released in the blood causing auto immunization.

(3) Neural hypothesis: Melanocyte destruction occurs due to release of some unusual neurochemical mediators or the abnormal ratio of normal neurotransmitters.

(4) Self destruction hypothesis: Due to generation of free radicals causing defect in natural protective mechanism.

**Symptoms:**

Development of white spots over skin or mucus membranes which may enlarge to form big non-itching, non painful, non oozing white patches with presence of full touch sensations

Apart from the loss of pigment, leucoderma skin otherwise looks normal. There is no atrophy, no loss of sensation, no loss of hair, noabsense of sweating,no scaling or any other change of skin.In case the leucodermal lesion is located in the hairy region, the hair may lose their pigment and become grey. Lesions may vary in number and size.

**Types of leucoderma:**

Unilateral lesions- may be localized to a restricted area, strictly limited to one side of the body.

Bilateral or generalized lesions- they spread very fast and become generalized distributed on both sides of body. Generalised cases are believed to be caused by auto-immune mechanism where the immunity of one's own body progressively destroy the melanocytes and develop the depigmentation.

**Management of leucoderma in modern system of medicine:**

A. **Medical Treatment:**
   - (a) PUVA or PUVASOL
   - (b) Steroids : Oral, topical, intra-lesion
   - (c) Placentra Extract : Intramuscular or interlesion.
   - (d) Other miscellaneous agent.

B. **Surgical Treatment:**
   - (a) Thin split thickness grafting
   - (b) Punch grafting
   - (c) Suction blister grafting
   - (d) Melanocyte grafting

C. **Cosmetic treatment:**
   - (a) Camouflaging
   - (b) Bleaching

There are so many drawbacks of existing therapies of modern system of medicine. So there is a need of comprehensive management of shweta kushtha.

**The component of comprehensive management (principles of Ayurvedic management):**

(1) Nidan parivarjana (prevention)
(2) Rakta shodhana
(3) Mridu virechana
(4) Yakriduttejaka
(5) Savarnikarna
(6) Antrastha krimighna
(7) Medhya rasayana
(8) Rasayana karma
(9) Counselling & ojovardhana

**Objective:**

To evaluate the efficacy of Leucoskin ointment and Leucoskin drops.

## MATERIAL AND METHODOLOGY

**Selection of patients:**

The patients were selected through observational design in the routine O.P.D. of Aggarwal Dharmarth Hospital, Shakti Nagar, Delhi.

**Inclusion criteria:**

(i) Well established vitiligo patches at any part of body.
(ii) Any age.
(iii) Both the sexes.
(iv) Each and every socio-economic class.

**Exclusion criteria:**

(i) Leprosy
(ii) Malignancy
(iii) Renal failure
(iv) Pregnancy
(v) Lactational mothers

**Selection of drugs:** Leucoskin ointment and Leucoskin drops.

Lukoskin is a result of extensive Research and Development, which has been processed meticulously, standardized for various parameters and studied clinically. DARL has its core competence in development of herbal products utilizing medicinal plants of high altitude areas of Himalayan region for relieving the sufferings of mankind.

Technology has been transferred to Aimil Pharmceuticals for manufacturing the Leucoskin drops and ointment.

**Main Ingredients of Drugs:**

1. Lukoskin Ointment:
   - Bawachi (*Psoralea corylifolia*)
   - Vishnag (*Ammi majus*)
   - Arka (*Calotropis gigantea*)
   - Kumari (*Aloe vera*)
   - Ratanjyota (*Jatropha curcas*)
   - Jaati oil (Jasmine Oil)
   - Til oil (Sesamum oil)
   - Cream base
2. Lukoskin Drops :
   - Bawachi (*Psoralea corylifolia*)
   - Vishnag (*Ammi majus*)
   - Arka (*Calotropis gigantea*)
   - Kumari (*Aloe vera*)
   - Tulsi (*Ocimum sanctum*)
   - Mandookparni (*Centella asciatica*)

**Doses of drugs:**

(1) Lukoskin Drops 25 drops twice daily with half cup of water.
(2) Lukoskin Ointment : Applied on white patch followed by sun exposure for 5 to 30 min.

**Duration of study:** 2 Years.

**Action of drugs:**

i. Skin photo sensitizer
ii. Stimulates melanin synthesis
iii. Enhance wound healing
iv. Regulates metabolism
v. Improves auto-immune system
vi. Checks secondary infection
vii. Reduces stress.

**Apathya:**

1) Avoid sour food, acidic food e.g. orange, lemon, sour curd, pickles, vinegar, cold drinks.
2) Non vegetarian diet.
3) Exposure to cold & warmth together.
4) Oily spicy food.
5) Milk with namkeens, cheese, sour food, sour fruits, pickles, fish, radish.

**Pathya:**

1) Light & easily digestible food.
2) Green leafy vegetables.
3) Parwal, gourd, beans, carrot, raw banana.
4) Roasted blackgrams, sprouted pulses, water soaked almonds.
5) To drink water kept in copper vessel for at least 8 hrs.
6) Anulom-vilom pranayam.

**Detailed data of vitiligo patients:**

Total no. of patients selected : 60
No. of patients drop out : 10
No. of patients continued the treatment : 50

(1) **Sex Ratio Analysis**

| Sex | No. of patients | Percentage |
|---|---|---|
| Male | 22 | 36.6 |
| Female | 38 | 63.4 |

(2) **Age Ratio Analysis**

| Age group | No of patients | Percentage |
|---|---|---|
| 0-5 yrs | 3 | 5.0 |
| 6-15 yrs | 12 | 20.0 |
| 16-30 yrs | 29 | 48.3 |
| 31-50 yrs | 15 | 25.0 |
| >50 yrs | 01 | 1.7 |

(3) **Occupation Ratio Analysis**

| Occupation | No. of patients | Percentage |
|---|---|---|
| Service | 06 | 10.0 |
| Business | 10 | 16.6 |
| Non-working | 19 | 31.7 |
| Student | 25 | 41.7 |

**(4) Socio Economic Status Analysis**

| Type of economic class | No. of patients | Percentage |
|---|---|---|
| Poor | 08 | 13.4 |
| Middle class | 40 | 66.6 |
| High class | 12 | 20.0 |

**(5) Analysis according to Diet**

| Type of diet | Number of patients | Percentage |
|---|---|---|
| Vegetarian | 24 | 40.00 |
| Non-vegetarian | 36 | 60.00 |

**(6) History of Virudha Ahara**

| Viruddh ahar history | No. of patients | Percentage |
|---|---|---|
| Present | 38 | 63.0 |
| Absent | 22 | 36.0 |

**(7) Analysis according to Duration of Disease**

| Duration of disease | No. of patients | Percentage |
|---|---|---|
| 0-1 yrs | 15 | 25.2 |
| 1-5 yrs | 32 | 53.4 |
| 5-10 yrs | 07 | 11.4 |
| >10 yrs | 06 | 10.0 |

**(8) Analysis according to Genetic Factor**

| Genetic factor | No. of patients | Percentage |
|---|---|---|
| Positve | 18 | 30.0 |
| Negative | 42 | 70.0 |

**(9) Stages of Progress in Patients with Time Duration**

| Stages | No. of patients | | | |
|---|---|---|---|---|
| | 1-3 month | 4-6 months | 7-9 months | 10-18 months |
| Spread arrest | 29 | 19 | 02 | Nil |
| Redness | 18 | 23 | 07 | 02 |
| Onset of pigmentation | 10 | 18 | 18 | 04 |

**(10) Result of Treatment**

| Benefit | No. of patients | Percentage |
|---|---|---|
| Most significant results | 17 | 34 |
| Significant results | 19 | 38 |
| Average results | 10 | 20 |
| Not relieved | 4 | 8 |

**Toxicity:**

No toxic symptoms arose except blisters developed in 12 patients, which were healed by applying the Jasmine oil for some time and again the treatment is restarted.

**OBSERVATION & DISCUSSION:**

(1) This disease is mostly found in middle class people.
(2) Most of the patients were of pittaj prakriti.
(3) No. of female patients were more.
(4) Students were more sufferers.
(5) Non-vegetarian people are more affected by vitiligo. The people having viruddha ahara history were found to be more affected.
(6) In many cases, genetic factor was found positive.

**CONCLUSION:**

Many facts came forward as a result of efficacy of the drugs given.

(1) Progress of white patches stopped.
(2) Normal color of skin started to develop in white patches.
(3) Eruption of new white patches prohibited.
(4) LFT Parameters are improved.
(5) No toxic symptoms arose.
(6) Less response is found in patches over bony prominences and mucous membrane areas.