Management of allergic contact dermatitis with Ayurvedic intervention

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INTRODUCTION

Dermatitis is an inflammation of the skin caused by factors, such as allergens, irritants, UV light, foods, medications, hereditary, etc. Contact dermatitis is an inflammatory process in the skin caused by an exogenous agent or an agent that directly or indirectly injures the skin. Contact dermatitis occurs when the skin comes in contact with a substance that causes a delayed allergic reaction. It is divided into two main types, allergic contact dermatitis (ACD) and irritant contact dermatitis (ICD). ACD accounts for 20% of all contact dermatitis reactions. ACD is a type 4 (delayed or cell-mediated immune reaction) that is elicited when the skin comes in contact with a chemical to which an individual has been previously sensitised (Longo et al., 2011). It requires prior sensitisation to the chemicals. Subsequent re-exposure of individual leads to allergen being presented to a primed T-cell leading to release of numerous cytokines and chemotactic factors. Once sensitized a low concentration of causative chemical elicits a response.

If contact dermatitis is suspected and an offending agent is identified and removed, the eruption will resolve. Usually, the treatment of ACD is tropical but, if necessary, systemic corticosteroids are also effective. In Ayurveda, there is no clear description of dermatitis, but if we look into the text deeply, the clinical features of Vicharchika (chudrarog) can be correlated with dermatitis. There are a total of 18 types of kusthroga have been described by Archaryas. Kusthroga is tridoshaj Pradhan vyadhhi and the main dhusyas are twak, rakta, mansa, ambu (Acharya, 2009). It is included among the disorders of rakta and also known as Mahagadh. As pitta dosha is predominately vitiated, so, in Ayurvedic treatment, tikta kashaya dravyas are used to cure skin diseases. Hence, with this background, the trial drugs were selected for the present case.

AETIOLOGY

Common allergens are plants (parthenium), jewellery made from nickel or gold, latex gloves, perfumes or chemical in cosmetics and skin care products. An agent that caused ACD is induced an antigen, a specific immune response. Clinical lesions of contact dermatitis may be acute (wet and oedematous) or chronic (dry, thickened and scaly) (Khanna, 2002).
PATHOGENESIS

ACD develops due to the involvement of the immunological pathway. It does not develop on the first exposure. ACD is a type 4 (delayed hypersensitivity) reaction to exogenous contact antigens. Antigen, presented to the skin, is processed by antigen presenting cells (Langerhans cells). The processed antigen then interacts with the sensitised lymphocytes which are stimulated to multiply and to secrete cytokines. Cytokines then cause skin injury.

The sensitivity is specific to a chemical but the patient may develop cross-sensitivity to closely related chemicals. Repeated contact increases the chance of developing hypersensitivity, though ACD may begin after the first contact.

CASE STUDY

Patient description

A female patient, aged 18 years, unmarried, lives in Haridwar, was registered in OPD (No. 2030/47286) of the Department of Rog Nidan Evam Vikriti Vigyan, Rishikul Campus, Haridwar on 26/11/2018 with the complaints of itching and redness on the face and neck for 1 year, burning sensation on the face and neck for 1 year, irregular bowel habits for 2 months and decreased appetite for 15 days.

History of present illness

According to the patient, she was asymptomatic about a year ago. Since then, she has been suffering from intense itching with a burning sensation and also redness on the face and neck. She had also a complaint of irregular bowel habits and decreased appetite. She took 1 month of Allopathic treatment but she did not get any relief. Then she came to Ayurvedic hospital for better management.

Table 1. Medication and procedure applied in the present case

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Medication</th>
<th>Dose</th>
<th>Time</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Panchnimbadi churna</td>
<td>3 g</td>
<td>Twice a day after meal</td>
<td>15 days</td>
</tr>
<tr>
<td></td>
<td>Sudh gandak</td>
<td>250 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Amrita satva</td>
<td>500 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Swarna gerik</td>
<td>250 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Haritaki Churna</td>
<td>3 g</td>
<td>At night before sleeping</td>
<td>7 days</td>
</tr>
<tr>
<td>3.</td>
<td>Mahamanjisthadi Kwath</td>
<td>20 mL</td>
<td>Twice a day after meal</td>
<td>15 days</td>
</tr>
<tr>
<td>4.</td>
<td>Panchatikta ghrit</td>
<td>10 g</td>
<td>Twice a day</td>
<td>15 days</td>
</tr>
<tr>
<td>5.</td>
<td>Purodil ointment</td>
<td>NA</td>
<td>Thrice a day</td>
<td>15 days</td>
</tr>
</tbody>
</table>

Subjective assessment criteria

The subjective assessment criteria were dry, scaly, flaky skin, burning sensation, skin redness, oozing blisters, severe itching, sunlight sensitivity and swelling especially on eyes and face.

RESULTS

The progress report of the patient is given in Table 2 in the form of scoring. After treatment, the patient got significant relief in the symptoms. The follow up was made on the 15th day after
completion of oral medication. During this period, the symptoms, i.e. itching, redness, burning skin and irregular bowel habit have been improved. After further continuation of medicines, no flaky and dry skin was observed and swelling was remarkably subsided. The progress in the symptoms of the patient in three follow-up visits was recorded.

Table 2. Observation before and after treatment

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Symptoms</th>
<th>Before treatment 0 day</th>
<th>16th day (1st follow-up)</th>
<th>30th day (2nd follow-up)</th>
<th>60th day (3rd follow-up)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Redness</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>Itching</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>3.</td>
<td>Thickness/oedema</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>4.</td>
<td>Dryness</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>5.</td>
<td>Lichenification</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>6.</td>
<td>Burning sensation</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

DISCUSSION

The reference of Panchatikta ghrit, a drug selected for trial, is taken from Bhaishyaj Ratnavali Kushth Rogadikara. The main contents of this drug are Panchatikta gana dravyas and ghrit. So, probable mode of action of Panchatikta ghrit can be made on the basis that all the contents are of tikta rasa, laghu and ruksh guna, so, it acts as an anti-itching. It mainly acts on wastes (kleda), fat (meda), lasika, rakta, pitta, sweda and shleshma and also acts as kled and vikrut meda upashoshak and vranashodhak. Nimb, having main constituents nimbin and nimbidin, possesses significant anti-inflammatory and anti-ulcer effects (Lokhande et al., 2016).

Guduchi, having berberin and tinosporin, mainly acts as anti-oxidant and immune modulating. Ghrit has lipophilic action so helps in ion transportation to a target organ. This lipophilic nature of ghrit facilitates entry of the drug into the cell and its delivery to mitochondria, microsomes and nuclear membrane. Also, it helps in restoring the normal texture to the skin. So, all these properties act mainly at the cellular level of skin decreasing keratinization of cell layer thus improving cell cycle as result symptoms like itching, deranged complexion, white or red patches are reduced giving normal texture to the skin. Ghrit by its sheeta and snigdha properties acts as Pitta shamak and also induces virechana which is the best shodhan treatment for vitiated Pitta. So, it helps improving skin diseases because Pitta is the main causative factor for skin diseases and vitiation of rakta. Panchnimbadi churna contains Nimb and other herbal ingredients. It detoxifies the blood and helps in curing skin diseases. It has Rakta prashadham and Pitta prasamaka action.

Guduchi has anti-inflammatory, antioxidant, immunomodulatory and several other medicinal properties. This churna contain tikta kashaya dravays which is helpful in shaman of vitiated pitta (Rao, 2014).

Haritaki churna is a tonic drug and good for the digestive system. It balances vata, pitta and kapha. It also has an anti-bacterial, anti-oxidant and immunomodulation properties. The properties like deepana and panchana act on jataragni by improving the agni, cure the ama and act as a shrotsoshadak. As it also acts as a laxative, it helps in rechan of pitta and ultimately helps in curing the vitiated pitta.

Inflammatory skin disorders require additional nutritional support. Therefore, it is important to ensure the essential nutrients in food to support normal skin. Some foods provoke allergic dermatitis, elimination of that diet can heal ACD. The use of dietary fatty acids, antioxidants and hydrolysed proteins can be beneficial in managing inflammatory skin problems (Mowad et al., 2016). Approximately 30-50% of individuals who are allergic to natural rubber latex show a related hypersensitivity to some plant-derived foods, especially freshly consumed fruits. Certain foods are usually high in nickel content, such as cocoa and chocolate, soya beans, nuts and almonds. Avoidance of these foodstuffs may alleviate contact dermatitis (Basavaraj et al., 2010).

CONCLUSION

The present case study concludes that the holistic approach of the Ayurvedic system of medicines gives relief to the patient of allergic contact dermatitis. There was no adverse effect found during the Ayurvedic medication. On the basis of this single case study, it can be concluded that Panchnimbadi churna along with Panchatikta ghrit treatment is effective in the management of ACD. From this study, it is stated that Ayurveda can be a promising alternative in early ACD. Further clinical trials are needed to establish standard management of dermatitis.

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

REFERENCES


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