Ayurvedic Management of Upanaha Induced Contact Dermatitis, a Type IV Delayed Hypersensitivity Reaction - A Case Report

Geetismita Boruah1, Ashvini Kumar M2, Nataraj HR3, Lohith BA4

1 Postgraduate Scholar, Department of Panchakarma, Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan, Karnataka, India
2 Professor, Department of Panchakarma, Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan, Karnataka, India
3 Associate Professor, Department of Agada Tantra, Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan, Karnataka, India
4 Associate Professor and HOD, Department of Panchakarma, Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan, Karnataka, India

ABSTRACT

Adverse drug reactions (ADR) are undesirable side effects of a pharmacological therapy that have a significant impact on an individual’s quality of life. A 79-year-old female presented to the Panchakarma OPD of Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan, with complaints of itching, burning sensation, rash, and swelling in both knees for three days. She was diagnosed with an Upanaha induced contact dermatitis, specifically a Type IV delayed hypersensitivity reaction. The symptoms were completely resolved after a 15-day therapeutic strategy with Sudarshan Ghana vati, Laghusootshekhar rasa, and local application of Shatadhouga ghrita and Aloe Vera (Aloe Berdeniss).

Keywords: Ayurveda, Adverse Drug Reaction (ADR), Delayed Hypersensitivity Reaction, Upanaha.

INTRODUCTION

An ‘adverse drug reaction’ (ADR) is a patient’s clinical reaction to a drug, defined as “a substantially harmful or undesirable response, likely to result from an intervention pertaining to the use of a pharmaceutical product, which anticipates hazard from subsequent administration and warrants prevention or specific treatment, or modification of the treatment regimen, or cessation of the product” [1].

Contact hypersensitivity dermatitis emerges when haptens, which are exogenous antigens, penetrate the skin and make contact with epidermal and dermal cells, exacerbating an inflammatory reaction. Antigen presentation and sensitization of these haptens to CD4 and CD8 T cell lymphocytes are essential roles of dermal dendritic cells and Langerhans cells. They secrete cytokines and other enzymes in order to lure other immune cells to the location of hapten exposure [2]. The majority of adverse events associated with the use of herbal medicines or products are due to either poor product quality or improper use [3].

Every health-care system has limitations in the form of adverse medication reactions. Inappropriately administered Panchakarma (~five folds of metabolic bio-purification) procedures triggers significant unwanted drug interactions. Ayurveda Samhitas emphasises on the Arha (~indications) and Anarha (~contraindications) of therapies, as well as the Samyak Yoga (~proper symptoms) and Ayoga (~improper symptoms) and Vyapads (~complications) of Panchakarma procedures. Upanaha sweda (~fomentering through poultice) is commonly practised modality of treatment in the management of Janusandhigata Vata (~Osteoarthritis of knee) [4]. It combines Ushna (~hot in potency) and Teeksna Dravyas (~sharp in potency) coupled with Saindhava (~rock salt), Drava dravya (~situable liquid media), Godhumra (~wheat), and Chaornas (~medicated powders) linked together and wrapped over affected areas. Upanaha should be not to be tied on for long time in Grishma Ritu (~season), Pitta Prakriti (~bodily constitution), sensitive individuals with known hypersensitivity. Akalo (~wrong timing/excessive weather), Alpamatra (~insufficient quantity), Atimatra (~excess quantity) Purana (~old) Asamyak Sanskrita (~not processed well) without Bhavita Aushada (~not potentiated) causes unexpected adverse outcomes [5].
CASE REPORT

A 79-year-old female presented with itching, rashes, burning sensation, swelling on both knees for three days.

Detailed history and clinical findings

The patient had been asymptomatic three days prior to approaching our hospital on 30th of April. Over a period of three days there was, swelling redness and itching in bilateral knees. Priorly, on 7th of April she was admitted in our hospital for the treatment of Janusandhigata vata (~Osteoarthritis of knee) and was treated with Upanaha, Pooga trim basti (~medicated enema therapy), Udwartana (~powder massage with medicated drugs) followed by Pariseka (~Fomentation by pouring warm fluids), Shastika shali pinda sweda (~powder massage with bolus of rice) for a 7-day course. Upanaha was prepared using Godhuma (~wheat), Kolakullatha lepa (~rock salt), Dashamoola kwatha (~wheat media), and Mahavisagarbha tail8 (~An oil formulation) and was asked to keep for 7-8 hours. There was no history of any hypersensitive reaction to Upanaha over the 7-day course of treatment. The patient was relieved from symptoms of Janusandhigata vata and was discharged on 15th of April. During discharge she was prescribed Shivagutika [9], Ksheerabala avarta taila [10], for oral intake and Mahavisagarbha taila [7], for local application. During discharge or during the hospital stay there were no evidence of skin irritation in the Upanaha-tied areas. However, after 15 days of discharge, she experienced skin rashes, swelling delimited to the areas where Upanaha was wrapped. She gave the history that the event precipitated after an intake of goat meat prepared in curd.

She was a known case of diabetes and hypertension for 20 years and was under allopathic medication for the same.

There was no history of any drug allergy or atopy and there was no history of any fever.

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Clinical examination

Dermatological examination displays erythematous, oedematous, and plaque lesions along the edges of the area draped with Upanaha.

Dashavidha pariksha (~Ten examining components)

The patient’s Prakriti (~body constitution) was PittaKaphaja (~with dominance of Pitta and Kapha humor) whereas the Vikriti (~abnormal body constitutions) was Vata Kaphaja (~with dominance of Vata and Kapha humor); Samhanana (~compactness) Ahara shakti (~ability to assimilate food) Satva (~will power) and Satmya (~homologation) Sara (~essence of tissues), Pramana (~measurement of bodily organs) Pramana (~measurement of bodily organs) were all determined to be Madhyama (~moderate quality); Vyama shakti (~ability to perform strenuous work) were determined to be Avara (~poor quality); Pramana (~measurement of bodily organs) was Madhyama (~moderate) and Vaya (~age) was Vridha (~old age).

Diagnosis - Based on the clinical manifestations and comprehensive history, the patient was diagnosed as Upanaha induced contact dermatitis, a delayed type IV hypersensitivity under the broad range of ADR.

Treatment protocol

Based on the symptoms, the treatment was aimed at Pitta Shamana (~alleviating Pitta), Raktasodhaka (~blood purifier).

Intervention/Rescue medication:

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dosage and Anupana (~Adjuvant)</th>
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</thead>
<tbody>
<tr>
<td>Sudarshan ghana vata [11].</td>
<td>250 mg twice daily with Ushna jala (warm water)</td>
</tr>
<tr>
<td>Laghu sootasekhara vati [12].</td>
<td>250 mg twice daily with Ushna jala (warm water)</td>
</tr>
<tr>
<td>Fresh Aloevera pulp [13].</td>
<td>Local application of three/four times per day</td>
</tr>
<tr>
<td>Shatadhouta ghrita [14].</td>
<td>Local application, three/four times per day</td>
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</tbody>
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Follow up and outcome

The patient showed marked improvement in the signs and symptoms within a span of 15 days. There was complete remission of redness, itching and swelling in bilateral knees by May 14th.
DISCUSSION

Ayurvedic scriptures go into great detail about drug safety and adverse reactions. There is a detailed understanding of Viruddhadraya prayoga~ (drug interaction, Dravya samkarsha (~potentiality of drugs) Avasthanisara dravya prayoga (~conditional usage), and Prakrutu vrrudha dravya (~ Contradicted based on prakriti) and their influence in success of any Ayurveda modality of treatment or prevent adverse outcomes [5]. Dosha (~bio humors), Ausadha (~drugs), Desha (~climate of the region) Kala (~time of application) Satrtya (~homologous), Vaya (~age) are the Samikshya bhava [13], which are to be assessed correctly by a Vaidya (~physician) with proper Yukti (~Proper reasoning) while selecting a Panchakarma procedure.

Upanaha is a remarkably effective Bahya Upakrama (~external application) that may be performed conveniently in OPD and IPD settings, however Ausadha (~drug), Desha (region), Kala (~season/time of application), Satrtya (~homogenity), Agni (~digestive capacity), and Vaya (~age) should be thoroughly examined to accomplish the desired outcome. The necessity of Parihara Vishay (~precautionary steps after body cleansing) and Parihara Kala (~time period to follow precautions) in the success of a Panchakarma is emphasised. In this instance there was a history of consumption of non-vegetarian food along with curd during the Parihara kala, after which the symptoms were aggravated.

Kolukkuthadi lepa, Saindhava (~rock salt), Godhuma (~wheat), and Dashmooala kwatha (~ten medications) and Mahavisagasrba tailed were used to formulate the Upanaha. Kolakulaththadi lepa incorporates drugs such as Kala (Ziziphus jujube), Kulattha (Dolichos biflorus), Suradaru (Cedrus deodar), Rasana (Pluchea lanceolata), Masha (Vigna mungo), Atasi (Linum usitatissimum), Kustha (Saussarea lappa), Vacha (Acorus calamus), Satavaha (Anethum sowa), Yava (Hordeum vulgare). Most of these drugs are Tikshna~ (sharp in potency) Guna, Ushna~ (hot in potency) and has Katu Vipaka (~pungent action).

The patient was of Pitta prakriti (~Pitta constitution) which might have set the triggering response.

Sudarshana Ghana Vati [11], has Kaleeyaka (Santalaum album), Musta (Cyperus Rotunduss), Haritaki (Terminalia chebula), Guduchi (Tinospora Cordifolia), Katuki (Picrorhiza kurroa) etc. They are Lahgu (~light in action), Katu (~pungent in taste), Tikta Rasa (~bitter in taste), and Ushna Veerya (~hot in potency). The formulation with potent herbs corrects the imbalance of Tridosha and all types of Jwara (~fever).

Most of the drugs of Sutshekar Rasa [12], are having Tikta (~Bitter in taste), Kusaya (~Astringent taste) and Madhur rasa (~Sweet taste) properties which makes it Pitta Shamaka (~Alleviates pita) in action. Madhura rasa counteracts the Tikshan Gunma (~Sharp in potency) of vitiated Pitta causing soothing effect and pacify Vata Pitta Doshas and also relieve Daha (~burning sensation).

Shatadhouta ghrita [14], is Laghu (~light in action), Sheeta (~cold in potency), Snigdha (~unctuous in action), madhur~ (sweet in taste), Ropana (~wound healing property), Dahashamak (~subsides burning sensation), Vata Pittashamak (~alleviates vata and pitta).

According to Acharyas, Aloe vera is Kusthavinashini (~destroys skin diseases). Vishara (~fights toxicity) Jwarahara (~relieves fever) It also has salicylic acid, which has anti-inflammatory and antibacterial properties. When lignin, an inert substance, is included in topical preparations, it improves the penetration of the other ingredients into the skin. Saponins, which are soapy substances that make up about 3% of the gel, have cleansing and antiseptic properties [13].

The rescue medications were imbibed with Rakta sodhaka and Pitta shamaksha attributes which have worked effectively in combating this adverse drug reaction.

CONCLUSION

This case exemplifies how Ayurveda modalities may work miracles in the management of adverse pharmaceutical reactions without the aid of contemporary system of medicine. The Ayurvedic fraternity is hereby recommended to exercise greater caution while employing this Upanaha combination. Following this episode, the patients in department of Panchakarma were prescribed newer formulations in lieu of this one to prevent further mishaps. Generally during skin manifestations like this, we typically tend towards allopathy medications such as topical and systemic corticosteroids. However, this instance demonstrates that, in the absence of systemic signs, local ADR can be easily managed by Ayurveda exclusively.

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Conflict of Interest

None declared.

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