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# MANAGEMENT OF ACNE VULGARIS WITH DOOSHIVISHARI AGADA- A RESEARCH ARTICLE

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## ABSTRACT

Acne Vulgaris is one of the most common skin disorders which dermatologists have to treat. It mainly affects adolescent, though may present at any age. In recent years, due to better understanding of the pathogenesis of acne, new therapeutic modalities and various permutation and combinations have been designed. In topical agents; benzoyl peroxide, antibiotics, retinoids, etc are the mainstay of treatment; can be given in combinations. While systemic therapy includes oral antibiotics, hormonal therapy, and isotretinoin, depending upon the need of patients it must be selected. Physical treatment in the form of lesion removal, photo-therapy is also helpful in few of them. Since various old and new topical and systemic agents are available to treat acne, it sometime confuses treating dermatologist. We can compare the external factors with dooshivisha. Dooshivisha (cumulative toxicity) is a type of Kritrima visha (artificial poison). It is a transformed state of other types of poison if not eliminated, get collected in small doses leads to this type of poisoning. It is a single notion of Ayurveda and is the source of the prevalent of the health matters in the present era. Acharyas have said varied treatment values for the organization of Dooshivisha (cumulative toxicity). Dooshivishari agada is the preparation of choice for its treatment, which is a herbo-mineral formulation comprised of twelve ingredients that are taken in equal amounts for the preparation.[1]

**KEYWORDS:** *Kritrima, Herbal, Dooshivishari.*

## INTRODUCTION

Dooshivisha (Cumulative toxicity) is a type of Kritrima visha (Artificial poison). It is a

transformed state of other types of poison if not eliminated, get collected in small doses leads to this type of poisoning. It is a unique concept of Ayurveda and is the cause of many of the health issues in the present era. Acharyas have said different treatment principles for the management of Dooshivisha (Cumulative toxicity). Dooshivishari agada is the formulation of choice for its treatment, which is a herbo-mineral formulation comprised of twelve ingredients that are taken in equal amounts for the preparation. Many Acharyas such as Sushruta, Vagbhata, and Bhavaprakasha have explained it in their classical texts. If we see the mechanism of causing the bad effects of dooshivisha, it causes the skin diseases because it causes toxicity in blood. Acne vulgaris is a chronic inflammatory disease of the pilo-sebaceous unit, characterized by papules, pustules and often scarring, mainly on the face, upper trunk and back. Acne vulgaris is a nearly universal skin disorder affecting 79 to 95% of youths. In today's era, stress, increasing pollution, changes in diet, lifestyle changes, hormonal changes and the number of youths suffering from acne vulgaris problem is increasing. In Ayurveda it can be called as Mukhadushika. It is otherwise called as Yuvanpidika (Acne vulgaris). In Sushruta Samhita, Mukhadushika is mentioned under the kshudraroga. Acharya Sushruta has described Mukhadushika as a particularly thorn-like eruption on the face of adolescents. According to Ayurveda, mukhadushika occurs due to vitiation of kapha dosha, vata dosha and raktadushti. In present case study, there is kaphavata dominancy with involvement of raktadosha. Acne vulgaris is one of the commonest skins disorders which dermatologists must treat, mainly affect adolescents, though it may present at any age. Acne is multifactorial chronic inflammatory disease of pilosebaceous units. Various clinical presentations include seborrhoea, comedones, erythematous papules and pustules, less frequently nodules, deep pustules or pseudocysts, and ultimate scarring in few of them. Acne has four main pathogenetic mechanism—increased sebum productions, follicular hyperkeratinisation, *Propionibacterium acne (P. acne)* colonization, and the products of inflammation. if we look the pathogenesis and dooshivisha causes they look similar and In the current era, there are so many poisonous materials get accumulated in the body of a person in their daily activities, that they will be continued for a prolonged period.[2] Metals, metallic compounds, radiations, pesticides, chemicals, food additives, etc, have found the nature of accumulation within the living body. Over one billion humans have been exposed to elevated levels of toxic metals and metalloids in the environment.[3] There are different treatment protocol are explained in classical texts for the management of Dooshivisha (Cumulative toxicity). Dooshivishari agada is one such formulation told chiefly for the management of Dooshivisha (Cumulative toxicity) and for other poisonous conditions.

## DISCUSSION

### Pharmacological actions

1. Apoptosis activity Cells were incubated with different concentrations of methanolic extract of Dooshivishari agada, and cell morphologic changes and apoptosis were determined by the normal inverted microscope, Annexin V, and propidium iodide (PI), followed by Flow cytometric analysis, respectively. Sample Dooshivishari agada at 80µg/ml and 160µg/ml treatment have induced early and late apoptosis in JURKAT with 13.65%, 25.59%, and 2.36%, 10.24% apoptotic cells respectively, 1.88% and 4.08% necrotic cells were found when compared to control cells with 3.64%. This preclinical study demonstrated a JURKAT cell line to be highly sensitive to DVA methanolic extract-induced apoptotic cell death.

2. Cell cycle arrest Cells were incubated with different concentrations of methanolic extract of DVA, and the percentage of cells in various stages of the cell cycle in compounds treated and untreated populations was determined using FACS. The treatment of cells at the concentrations of 80µg/ml and 160µg/mL of sample DVA has shown G2M arrest from 5.58% (control) to 1.47% and 12.31%, respectively. S-phase arrest was found to be 13.54% and 15.51% at the same concentrations. This laboratory study demonstrated the cytotoxic effect of the sample methanolic extract of DVA through cell cycle arrest.

3. Antimicrobial, antifungal, and antioxidant activity Dooshivishari Agada showed an average zone of inhibition ranging from 17 to 33mm suggesting its activeness against the tested microorganisms and confirmed its antimicrobial activity. Antioxidant activity was calculated in terms of ascorbic acid which was observed as 10.91. DVA undoubtedly exhibits its antimicrobial, antifungal, and antioxidant potentials.

4. Butyrylcholinesterase activity in Alzheimer's disease Test samples Dooshivishari Agada (Methanol) and (Aqueous) extracts were tested for Butyrylcholinesterase inhibitory activity using colorimetric method in 96 well plates. The methanol extract has showed better activity with an IC50 value of 96.09µg/ml followed by the sample aqueous extract with IC50 value of 124.4µg/ml. Tacrine used as the standard Bche inhibitor showed an IC50 of 3.19µg/ml.
5. Anti-allergic action[26] In modern mast cells are the major effector cells in the pathology of allergy. Concept of allergy is much more like that of Dooshivisha. Ingredients of DVA

are proved to have anti-inflammatory, immunomodulator activity. Hence DVA may prove beneficial in allergic conditions.

6. GSK3 inhibition activity. The effect of DVA on GSK-3 gene expression was studied in SHSY5Y by semi-quantitative PCR was analysed. The internal control beta actin was used to normalize the gene expression.

In on study has been revealed that GSK3 expression was upregulated as the treatment concentrations increased. Expression levels of GSK3 at 80µg/ml showed and 160µg/ml showed fold expression when compared to control. Dooshivisha (Cumulative toxicity) is an attenuated or denatured poison that functions as a latent toxin in the body. It is having mild potency, is not fatal for an individual, and has delayed action as it is covered by Kapha dosha (phlegm). It resides in the body for many years and produces different untoward effects. In classical treatises of Ayurveda while describing six tastes (Rasa) it is indicated that none of them should be used in excess. Similarly, excessive long-term usage may lead to many diseases. Acharya Sushruta, Vagbhata, and Bhavaprakasha have been given the same name as Dooshivishari agada in the management of Dooshivisha (Cumulative toxicity). As per Sushruta, Vagbhata, and Bhavaprakasha, it contains 9, 12, and 10 drugs respectively. Acharya Sushruta has not mentioned Kutannata, Nata, Kushta, Yashtimadhu, Chandana; and added Paripelava and Toya. Acharya Bhavaprakasha has not mentioned Kutannata, Nata, Kushta, Yashtimadhu, Chandana; and added Maricha, Baalaka, and Bruhat ela. The dosage form is not mentioned by Sushruta and Vagbhata, but Bhavaprakasha has said to use this formulation in Kashaya (Decoction) form. Based on ingredients dooahivishari medicine is Laghu guna (Light property), 24% of the ingredients have Ruksha (Rough) and Snigdha guna (Unctuous property), 12% of the ingredients have Guru guna (Heavy property), and 8% of the ingredients have Tikshna guna (Sharp property). Ruksha (Rough), Laghu (Light), and Tikshna guna (Sharp property) help for fast spreading and penetration of the medicines thus providing faster action. Snigdha (Unctuous) and Guru guna (Heavy property) provides strength as Rogi bala (patient strength) will be reduced in Visha (Poison). Based on Veerya (Potency) (Figure 3) – 58% of the ingredients have Sheeta veerya, and 42% of the ingredients have Ushna veerya (hot potency). Sheeta veerya (Cold potency) drugs have Pittahara as well as Rakta prasadaka (Blood soothers) and Stambhaka karma (Restraining action). Ushna veerya (Hot potency) helps to balance Kapha and Vata dosha removes the Avarana (Enveloping) present in Dooshivisha (Cumulative toxicity) and helps for digestion of drugs.

Based on Vipaka (Metabolic property) (Figure 4)–67% of the ingredients have Katu (pungent) Vipaka, and 33% of the ingredients have Madhura (sweet) Vipaka. Katu (Pungent) Vipaka subside the increased Kapha dosha which is predominantly affected in Dooshivisha (Cumulative toxicity), whereas Madhura (Sweet) Vipaka balances the Pitta and Vata dosha, hence equilibrium is maintained. sIf we look the ingredients Based on dosha karma – 50% of the ingredients have Kapha Vatahara property, 25% of the ingredients have Kapha pittahara property, and 17% of the ingredients have Tridoshahara property. Most of the ingredients have Vishaghna (Antipoisonous), Kushtaghna (Skin disease alleviating), Deepana (Gastro stimulant), Rasayana (Rejuvenating), Vrishya karma (Aphrodisiac property). As the formulation contains Pippali, Ela, Kutannata, Suvarchika, Kushta has Deepana (gastro stimulant) and Pachana karma (digesting property), which corrects and maintains Agni (Digestive fire) at the cellular level. Dhyamaka, Jatamansi Lodra, Chandana, Ela, Tagara, Kushta, and Gairika has Kushtaghna (Skin disease alleviating), Vishaghna (Anti-poisonous), Balya (Strengthening), Shothahara (Reduces swelling), Rakta shodhana (Blood purification) properties and exhibit their antitoxic action and cure Dooshivisha janya vikaras (Disease due to cumulative toxicity).[3-6]

## CONCLUSION

Dooshivisha (Cumulative toxicity) is a condition that does not cause immediate death but stays in the body for a long duration without producing any symptoms. In the present modernized world disease due to cumulative toxicity are increasing due to constant exposure to radiation, chemicals, preservatives, etc. Escaping from these causative factors is not possible in this era. Proper diagnosis of disease helps for better management. Acne vulgaris is one among the adolescent problem that makes them feel unconfident. Hence if we prescribe this medicine in case of acne than according to its properties, we can find good results.

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