



Research Article

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ROLE OF AYURVEDIC MANAGEMENT IN CHEMICAL TOXICITY OF COSMETICS: A REVIEW

Meena Kumari Mahto^{1*}, Vinod Kumar Gothecha², Anita Sharma³

¹P.G. Scholar, Department of Agada Tantra and Vyavahar Ayurveda, National Institute of Ayurveda, Jaipur, India

²Professor, Department of Agada Tantra and Vyavahar Ayurveda, National Institute of Ayurveda, Jaipur, India

³Associate Professor, Department of Agada Tantra and Vyavahar Ayurveda, National Institute of Ayurveda, Jaipur, India

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*Corresponding author

E-mail: dr.meena_mehto@yahoo.com

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ABSTRACT

The concept of beauty and cosmetics is as old as mankind and civilization. Cosmetic products are very popular in market like sun skin cream, skin lightning cream, facial cream, nail paint, hair dyes etc. in females. They are generally the combination of chemical compounds, some are derived from natural source and other by synthetic methods. Cosmetics are the products use for external application to improve the beauty and appearance of a person which increase the self-confidence. Most of the cosmetic products contain hazardous chemicals like Talcum, parabens, Coal tar dye, Phthalates, Fragrance, Triethanolamine and some heavy metals example Lead, Arsenic, Cadmium and Mercury. Peoples are not aware of adverse effects of these chemicals. Due to long term usages, it accumulates in the body and can cause cancer, reproductive and developmental disorders, contact dermatitis, hair loss, lung damage, ageing, skin disease, allergies and effect on nails. In Ayurveda, cosmetic toxicity comes under the heading of Dushi Visha. So, therefore this article presents the conceptual aspect of chemical toxicity of cosmetics with special reference to Dushi Visha and their management according to Ayurveda. So, the aim and objective of this article is to establish the role of Ayurveda in the management of chemical toxicity of cosmetics. All the relevant materials are compiles from the Ayurvedic texts, available commentaries on it and Research articles.

Keywords: Cosmetics, Chemical toxicity, Dushi Visha.

INTRODUCTION

Ayurveda Literally means “the science of life” for the promotion of positive health and prevention and cure of disease it is in practice in India and its neighbouring countries since time immemorial. It is the rich store house of time tasted and effective recipes for the treatment of several obstinate and otherwise incurable diseases. Ayurveda is consisting of eight branches; one of them is Agada Tantra (Toxicology). Now a day several toxins are present in foods, vegetables, water and in atmosphere. Environmental Toxins enter into human body by two different routes i.e. external or internal. Long term use of chemical products produces various toxic hazardous effects to the human body. This type of toxicity is known as Cumulative toxicity. Cumulative toxicity is like Dushi Visha concepts explain by Acharya Sushruta. Humans are constantly exposed to these environmental toxic chemicals in their day today life. Now a day each and everything like food, water, air, soil, milk, etc. are polluted. For e.g. Synthetic hormones are in the milk, meat and other dairy product we eat. Pesticides, herbicides and fungicides are also present in grains and vegetables. These toxins enter into our body by different routes. They enter the system through blood circulation, and retention of these toxins results Toxaemia which slowly affect our vital system and immune system and can cause various diseases. According to Acharya Sushruta, Dushi Visha is defined as the toxin having origin plant, animal or artificial poison, that has not been eliminated, neutralized or remains in the body for a long time and manifested some disease if not treated¹. Cosmetics are one of them having some hazardous chemical also. Every person wants to look more impressive, beautiful and smart. Cosmetics are the products use for external application to improve the appearance and self-confidence of a person. Although the aim is

not always achieved, because it depends upon the selection of the quality of product which is based on the type of skin like oily, dry, normal or combine. Due to poor quality of products, lack of experience and skill person cannot achieve his or her goal. According to dermatologist cosmetics may be grouped as-

1. Skin Care Cosmetics –Cleansing agent, moisturizing agent,
2. Hair Care Cosmetics-Shampoo, Hair, Colour agent etc.,
3. Face Care Cosmetics-Facial foundation, Powder, eye shadow, lipsticks etc.,
4. Nail Care Cosmetics- Nail paint, Paint remover.
5. Fragrance Product-Deodorants, Perfumes etc.
6. UV light screening preparations.

The demand of cosmetic products ranging from creams, beauty, soap, face powder, lotion, shampoo, etc. has increased in recent times, resulting in massive production of cosmetic industry without following any standard guidelines. Cosmetics may contain several toxic chemicals like lead; cadmium etc. may cause various diseases like cancer, birth defect, development and reproductive disorder. Therefore, this type of review study was carried out which was conceptual type in nature. The aim was to highlight the toxic effect of cosmetics, so that a common man can also know the hazardous effect of cosmetics.

Conceptual Review

In Indian ancient literature, many subject are described in metaphorical language. The origin of visha is also described in this language. The substances which create a vishad (sorrow) after spreading in the body are known as Visha². According to our Vedic literature poison originate in three form minerals, vegetables and animals. In sushruta samhita the first two are describe as a sthavara visha and the third one is describe as a

Jangama Visha. In Scriptures, the origin of poison has described in many ways-

1. From oceans,
2. From snakes,
3. From poisonous elements and poison affected element.

According to modern science a poison is a substance which when administered, inhaled or ingested, can act deleteriously on human body is known as poison. A medicine in a toxic dose is a poison and a poison in a small dose may be a medicine³. According to Acharaya Vagbhata poisons are classified into two groups Kritima Visha (Artificial poison) and Akritima Visha (natural poison). Natural poisons are further classified into sthavar visha (vegetable origin) and jangama visha (animal origin). These artificial poisons are also called Gara visha. The poison of immobile or mobile source or artificial which is old (store for a long time) or attenuated by anti-poisonous remedies or dried in forest, fire, wind and the sun or naturally deficient in properties attains the nature of Dushi visha. It is not fatal due to mild potency and being covered with kaph, it stays in body for many years⁴.

Aggravating factors of Dushi visha (cumulative toxicity)

It gets aggravated by direct breeze, use uncooked food, cold, cloudy, weather, sleeping during day and infestation of unsuitable foods and then vitiates the Dhatu⁵.

Premonitory symptoms

Excessive yawning, looseness, horripilation and body-ache⁶.

Symptoms

Appear intoxication after taking food, indigestion, anorexia, patches, allergic rashes, mental confusion, depletion of Dhatu, oedema in feet, hands and faces, ascities, vomiting, diarrhoea, discolouration, fainting, intermittent fever or severe thirst, some causes insanity, other causes hardness of bowels, other diminishes semen, other produces muffled voice while other causes kustha and respective disorders of various type. Acharya Charaka describe that the artificial poison vitiating the blood causes ulcers and keloids and the poison, vitiating gradually one after another of the body elements, and kill the man ultimately⁷.

Systemic effect of Dushi visha

One suffering from Dushi visha passes liquid stool of abnormal colour has foul smell and tasteless in mouth, thirst, fainting, vomiting muffled voice and symptoms of toxicity and dushyaudara. If it is in stomach, the poison suffers from disorders of kapha and vata if located in intestines, then causes disorder caused by vata and pitta. In these cases, hair fall off and limbs drops down and the person becomes like a bird without wings. It produces the disorder related to Rasa Dhatu respectively⁸.

Samprapti (Pathogenesis)^{9,10}

The Samprapti of the chemical toxicity of cosmetics has not been mentioned clearly in the classics but it may be somewhat correlated with Samprapti of Dushi Visha which is explained in Figure 1.

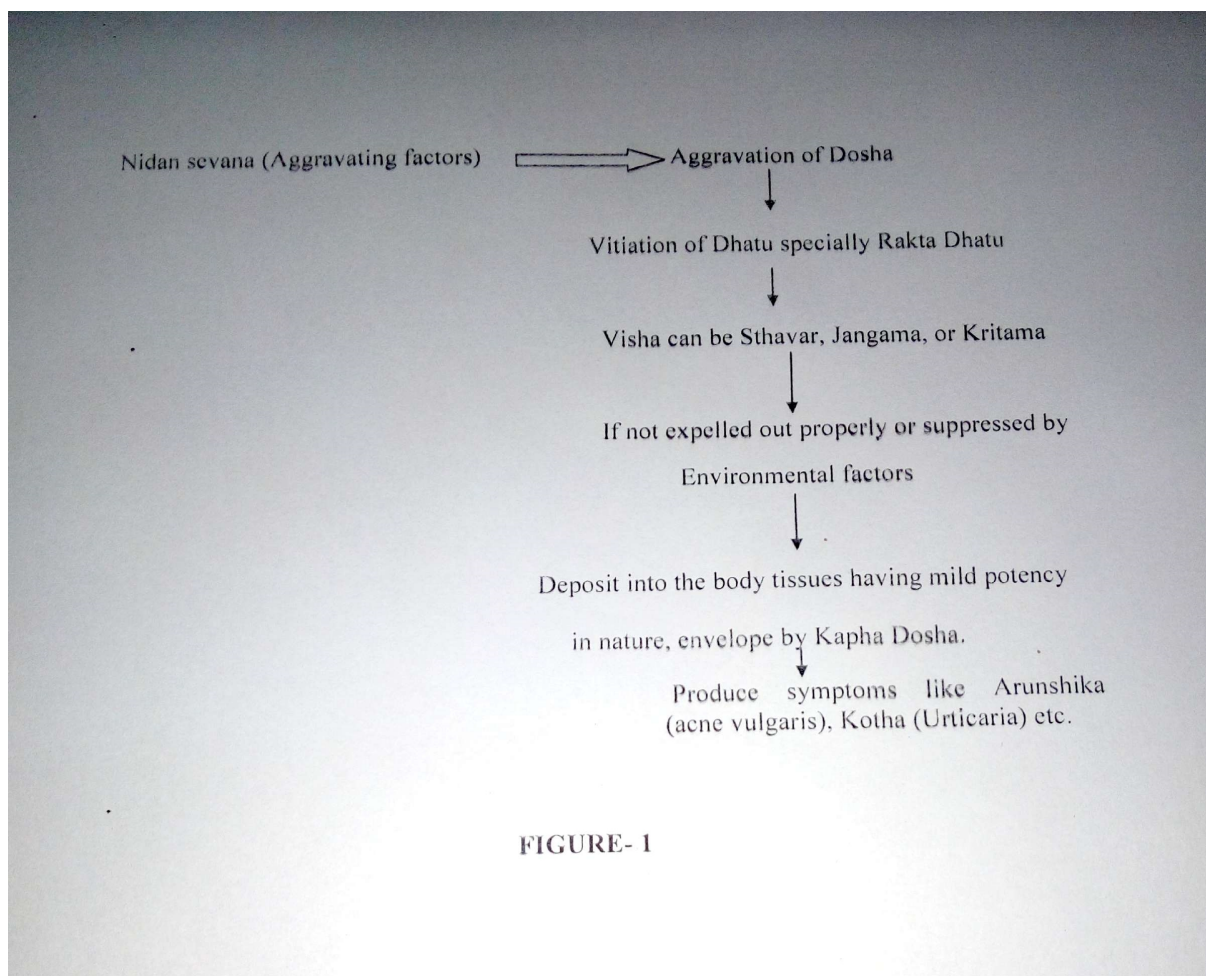


FIGURE- 1

Table 1: Chronic toxicity of cosmetics¹¹

	Cosmetic name	Name of toxic chemicals	Effect to the body
1.	Skin Care Cosmetics - Cleansing agent, Moisturizing agent.	DEA (Diethanolamine) and its compounds- (Used to make cosmetics creamy, act as a pH adjuster). MEA(Monoethanolamide), TEA (Triethanolamine)	Mild to moderate skin and eye irritation, high dose of these chemicals cause liver cancers and precancerous changes in skin and thyroid.
2	Hair Care Cosmetics - Shampoo, Hair Colour agent etc.	Cocamide and Lauramide, DEA found in shampoo. P-Phenylenediamine in many forms of permanent hair dyes Called oxidative Dyes (As a known Skin sensitizer), coal tar	Cocamide and Lauramide, DEA - It leads to allergic reactions. P-Phenylenediamine, as well as the products of its reactions with hydrogen, can alter the genetic material of cells. Coal tar can cause Skin tumours and neurological damage.
3	Face Care Cosmetics -Facial foundation, Powder, eye shadow, lipsticks etc.	Lead (Pb)	Target multiple body systems, including the neurologic, hematologic, gastrointestinal, cardiovascular and renal systems.
4	Nail Care Cosmetics - Nail paint, Paint remover	Formaldehyde and Formaldehyde-releasing preservatives (FRPs) like quaternium-15, diazolidinyl urea, polyoxymethylene urea, sodium hydroxyl methyl glycinate, bromopol and glyoxal. (More of These chemicals are Banned from use in cosmetics and toiletries in Japan and Sweden)	Acetone - (Nail polish remover), Headache, dizziness, irritated eyes, Skin and throat. Acetonitrile -Irritated nose and throat, breathing problems, nausea, vomiting, Weakness and exhaustion. Dibutyl Phthalate (DBP) - Nausea and irritated eye, skin, nose, mouth and throat, high level can cause fainting. Isopropyl acetate - Sleepiness and irritated eye, nose and throat. Toluene - Headache, Dizziness, numbness, irritated eye, nose, Throat and lungs. Damage to liver and kidney and harm to unborn children during pregnancy.
5	Fragrance Product - Deodorants, Perfumes etc.	Coumarin, Phthleugenol Phthalates	Some irritants can cause allergies, severe headache, and asthma especially in children. It is ranked the second most common cause of allergy in patients. Coumarin, Phthleugenol are suspected as a carcinogen, Phthalates suspected as hormones disrupters. Perfume spray in air can cause air born contact dermatitis.
6	UV light screening preparations	-DEA (diethanolamine) and DEA compounds -Benzophenones -Debenzoylmethanes -Para-aminobenzoic acid (PABA), cinnamates. -Heavy metal like inorganic mercury -Hydroquinone(HQ)	Sun screen agents can cause irritation, allergic, phototoxic or photo allergic reactions. Debenzoylmethanes, PABA and cinnamates may cause photo - allergic dermatitis. Hydroquinone can cause ochronosis and mutagenicity. Onchrosis is an adverse effect of HQ with progressive darkening of area of skin.

Poisonous features of cosmetics

Mention by our Acharyas, if poisoned cosmetic is applied on face, the face become blackish and exhibits the features of poisoned massage. It also covered with eruption like padminikantaka. For this drink of honey and ghrit mixed together should be used and also the paste of candana, ghrit, payasa, maduka, bandhujiva, punarnava¹².

General principal of Ayurvedic management

The patient of Dushi Visha should be administered swedan (sudation therapy) and then Vaman (emesis) and Virechana (purgative therapies), followed by Dushi vishari agada (antidote) internally mix with honey¹³.

- I. **Hetu Viprit Chikitsa**- The causes due to which the symptoms of those dosa are prominent. The treatment should be opposite of their nature¹⁴.
- II. **Vaman** followed by bath with cold water. Poison is having hot potency it aggravates pitta dosha so to pacify pitta dosha, cold water bath is indicated. Administration of Agada (anti poisonous medicine) should be administered mixed with Honey and ghee immediately¹⁵.
- III. **Pathya**- Foods which are sour in taste is given.
- IV. **Administration of kushtaghan Aushadha**- Since in Ayurveda all skin diseases are involve under the heading of kushth, cosmetic toxicity produces different skin problems. So some kushtaghan Ausadha can be used.
- V. **Rakta shodhak Aushadha**.

According to doshas

- I. When patient is having kapha prakriti and Poison is also kapha dosha in nature, in that condition vaman is indicated and application of paste of drugs (drug possess hot and penetrating property). Foods should be astringent, pungent and bitter tastes.
- II. When dominancy of pitta- Poisons of Pitta nature by mild virachana (purgations), swedana (sudation), poultices applied very cold and foods which are astringent, bitter and sweet in taste, added with ghee.
- III. When dominancy of vata- Poisons of vata nature should be won over by foods which is sweet, unctuous (fatty), sour, salty and added with ghee, application of drugs of the same properties and of meat as food. Purgation, external application of paste of drugs, food and medicine without the addition of ghee is not suitable. There is no medicine better than ghee in all kinds of poisons and in all stages of poisoning especially it is best when vatta dosa is very powerful¹⁶.

Specific treatment for Dushi visha

The Treatment of Dushi Visha (Cumulative poison) can be broadly classified into two groups (a) Shodhana, (b) Shamana.
Shodhana-This is a Panchakarma therapy or bio purification procedure to detoxify the human body as well as cleanse the body before starting a treatment. It can also neutralize toxin created in our body due to high level of stress of modern society.

There are five procedures including Sodhana Karma like Vamana, Virachana, Basti, Nasya, and Raktamokshana. Panchakarma therapy consists of three steps.

1. Purvakarma- Preparations which have to be done before the detoxification.
2. Pradhanakarma – The main detoxifying process.
3. Pashchatakarma – Rehabilitating the diet and life style after the detoxification process.

Purvakarma

Snehana karma (Oleation therapy)

It is a process of lubrication of internal and external body channels and tissues with Snehna Dravyas. It is of two types

1. Abhayanga (External Oleation)
2. Snehapana (Internal Oleation)

Swedana karma (Fomentation /Sudation therapy)

Snehana and Swedana Karma help to soften the channels and remove toxins.

Pradhana karma–The main detoxifying process.

- I. Vamana- emesis Therapy.
- II. Virechana- Purgation Therapy
- III. Basti Karma- enema Therapy
- IV. Nasya karma- errhine Therapy
- V. Rakta mokshna - Bloodletting Therapy

Pashchata karma

A strict diet and lifestyle procedure has to be followed throughout Panchkarma treatment. The rehabilitative procedures to bring back the diet and lifestyle to normal are considered as Pashchata Karma. In this stage, the digestive power is brought to normalcy.

Shaman chikitsa

- I. **Agada** (Antidote) - 1. Dushi Vishari Agada, 2. Shleshmaatak Agada (Yogaratanakara), 3. Chandrodaya Agada (Vanagsena Samhita), 4. Sanjivani Agada (charaka samhita), 5. Dasang Agada (Astanga Hridayam), 6. Maha Agada.
- II. **Ghrita**- Amrita Ghrita (Vanagsena Samhita), Nagadantyadi Ghrita (Vanagsena Samhita), Tanduliyai Ghrita (Vanagsena Samhita), Ajeya Ghrita (Vanagsena Samhita),
- III. **Vati**- Amrita Ankoor Vati (Bhaishajya Ratnavali),
- IV. **Bhasma**- Tutha Bhasm,
- V. **Rasayana**- Gandhaka Rasayana.

For external application

- I. **Taila**- Bhringaamalakyadi tail, Nilibhringyadi tail¹⁸
- II. **Mukhakantivardhak yoga**- Dwiharidrayadi Tail (Bhaishajya Ratnavali), Manjishthyadi Tail (Bhaishajya Ratnavali), Kumkumyadi Tail (Bhaishajya Ratnavali).
- III. **Lepa**- Lal Chandanayadi Lepa (Bhaishajya Ratnavali), Semalayadi Lepa (Bhaishajya Ratnavali),
- IV. **Krishnikaran yoga**- Lohamalayadi Udvartan, Kpaalranjan Yoga, Triphalayadi Lepa.
- V. **Raktashodhak yoga**- Saariwayadi vati, Khadirarista, Mahamanjishthayadi Kwath.

Prognosis of chronic toxicity with special reference dushi visha

Poison which has localized at the site of shlesma (Amasaya) is curable even without much treatment, that localized in the site of pitta (small intestine) is curable with significant effort and that localized in site of vata (large intestine) is either very difficult to cure even with earnest effort or not curable at all¹⁷.

Table 2: Pathya and Apathya¹⁸

DO	DO'NT
1. Brinjal, Malta juice, Indian pannywort.	1. Avoid antagonistic diet.
2. Sour pomegranate, soups of green. gram and common pea.	2. Over eating
3. The meat juices antelope, porcurine, common quail, partridge and. soups and meat juices prepared with drugs curative of poison and non-irritants food.	3. Anger
	4. Fear
	5. Exertion
	6. Sexual intercourse
	7. Day sleep particularly

DISCUSSION

Dushi Visha nothing but the cumulative toxicity and toxicity means- a threshold level of substance by which it can harm an individual. It is accumulation of toxic substance in body, which produce toxic effect after a long time. In case of cosmetic items or products, it accumulates in body which does not eliminated from the body by any means due to repeated application or usage it shows to cumulative effect on the body. Then there will be production of symptoms likes Indigestion, Anorexia, patches, allergic rashes, mental confusion etc., which are like Dushi Visha.

CONCLUSION

From above discussion, we can conclude that Dushi Visha can be consider as cumulative toxicity. In case of cosmetic products after long time usage. The symptoms will produce as like of Dushi Visha. Therefore, the management of chemical toxicity of cosmetic will be same as the treatment for Dushi Visha janya vyadhi.

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