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Cosmetic Toxicity & Its Management - An Ayurvedic Perspective

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ABSTRACT

People in every civilization used cosmetics to protect and embellish their skin, which naturally leads us to conclude that this is a primordial need. The demand of cosmetic products have increased in recent times, resulting in massive production without following any standard guidelines. Many of them contain dangerous ingredients such as Hydroquinone, Talcum, Parabens, Phthalates, Fragrance, Heavy metals like Lead, Arsenic etc. Studies have shown that about 50% skin fairness face creams available in India contain steroids. Due to long term use, it accumulates in the body and can cause irritation, increased susceptibility to infections, Kidney and Liver damage, Reproductive toxicity and Carcinogenicity. In Ayurveda, the concept of *Gara Visha* can be well incorporate with Cosmetic toxicity. Acarya Susruta mentions about various *Gara Visha Adhishtanas* and its different manifestations. The widespread use of cosmetic products is increasingly recognized as a public health and social justice issue due to the deleterious health side effects and the potential reinforcement of racial and social inequalities. So this article review the concepts of Cosmetic toxicity in Ayurveda, their prevention and management.

Key words: *Cosmetic Toxicity, Gara Visha, Parabens, Talc, Heavy Metals.*

INTRODUCTION

Skin fairness has been understood to be a cultural marker of class, wealth, beauty and social status for centuries. Global cosmetic market values about US\$ 58.6 billion in 2018 and the market is expected to grow annually by 6.4% (CAGR 2019-2023). The cause of this unbelievable growth may be the rising disposable income, growth of upper middle class population and increasing awareness about the

beauty products. Now there is an increase in demand of organic, herbal and Ayurvedic products. The trend is primarily a result of growing health consciousness. The advertising industry in particular is argued to play a significant role in reinforcing and capitalizing on stereotypical notions of caste, age, race, and beauty.^[1] Due to this, nowadays the use of cosmetic products are increasing worldwide. But here comes the question. Do all the cosmetics we are using safe?

The demand of cosmetic products ranging from skin-lightening creams, deodorants, face powder, lotion, shampoo, etc. have increased in recent times, resulting in massive production without following any standard guidelines. Government reports in the US and EU indicate that about 90% of the ingredients used in cosmetics are not safe for people in the long-term.^[2] In Ayurveda, the toxic cosmetic ingredient can be correlated with *Gara Visha* (artificial poison) and symptoms of cosmetic toxicities can also be well explained under various *Gara Visha Adhishtanas* (source of *Gara Visha*).

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HISTORY OF COSMETICS

The word cosmetics derives from a Greek word- 'Kosmetikos' which means art of dress and ornament. FDA defines cosmetics as the substances which are intended to be applied to the human body for cleansing, beautifying, promoting attractiveness or altering the appearance without affecting the body's structure or functions. Around 10000 BC Egyptian were started to use scented oils and creams. Around 840 BC Romans and Greeks started to use cosmetics. They used lead ore and copper to improve the complexion and ochre clays and red iron as lipstick. Later the toxic lead combo was replaced by zinc oxide. While coming into the Indian cosmetic history, use of turmeric, kajal, henna preparations were more prevalent at that time. They used different kinds of oil for massaging and used butter/ ghee to protect the lip from cracking. To improve complexion and to fight against acne *Chandana* (Sandal wood), *Agaru* (Agar), *Nimba* (Neem), *Kumkuma* (Saffron) etc. were used.^[3]

Classification of Cosmetics

Cosmetics can be broadly classified into 4 categories;

1. Skin care cosmetics - cleansers, toners, moisturizers, creams, lotions, sunscreens etc.
2. Hair care cosmetics - shampoo, conditioners, hair spray, gel etc.
3. Colour/ make up cosmetics - primer, concealer, compact powder, foundation, mascara, eye liner, lip stick, lip liner etc.
4. Fragrance/ perfumes

Table 1: Major toxic contents in the Cosmetics^{[2],[4],[5]}

Content	Product	Purpose	Toxic effect
BHA & BHT	Moisturizers	Anti-oxidant	Endocrine disruption Cancer
DEA-related ingredients	Moisturizers Shampoo	Thicken the aqueous portion	Cancer
Parabens	Body lotions Diaper wipes	Preservative	Endocrine disruption

			Breast cancer
Fragrance	Almost all cosmetics	Good smell	Clogs lymphatic system Endocrine disruption Organ system toxicity
Talc	Eye shadow Blush Baby powder Deodorant Face powder	Absorbent	Lung tumour Ovarian cancer
Formaldehyde	Nail products, Hair dye, Fake eyelash adhesives, Shampoos	Preservative	Cancer
Phthalates	Fragrance Perfumes Deodorants Lotions	Solvent and fixative in fragrances Denaturant	Headaches, Asthma, Dermatitis, Endocrine disruption, Liver/Kidney/ Lung damage, Cancer
Lead	Lipstick Hair dye	Contaminants	Cancer Neurotoxicity
Mercury	Mascara some eye drops	Contaminants	Allergen Impairs brain development
Sodium Lauryl Sulfate (SLS, SLES)	Used in foaming cosmetics such as shampoos, cleansers, soaps.	Surfactant	Eye and skin irritation Depression Liver damage Cancer
Toluene	Nail polish Hair dye	Solvent Colouring agent	Reproductive & developmental damage Liver and Kidney damage
Oxybenzone	Sunscreen	Protects from	Contact

		UVB rays	allergies, photo allergies Endocrine disruption Organ system toxicity
p-phenylenedia mine	Hair dye	Colouring agent	Skin irritation, Liver toxicity Birth defects Cancer

CONCEPT OF GARA VISHA

As per the classics, *Gara Visha* is mainly an artificial poison which can be prepared from the combination of substances which are not poisonous in nature or weak poisons. It can be drugs, chemicals, incompatible foods, alcohols, body parts of insects etc. It causes physical, psychological and social issues. According to Cakrapani, "as it takes much time for digestion *Gara Visha* is always *Cirakarirogajanaka*" (which does not endanger life soon).^[6] But Vagbhata says that the symptoms may manifest immediately/ after some time/ after long time.^[7] In case of cosmetic toxicity also, the signs and symptoms usually manifest in different time periods. Some cosmetic ingredients produce immediate effects like non-immunological allergic contact dermatitis, immunological dermatitis, contact urticarial syndrome etc. eg: Benzoic acid, Cinnamic acid, Cinnamal, Methyl nicotinate, SLS, Formaldehyde etc. On long term usage some produces toxic effects like endocrine disruption, reproductive toxicity and carcinogenicity. eg: Parabens, Fragrance, Triclosan, Phthalates, Talc etc.

Gara Visha Adhishtanas (source/ mode of poisoning)

Susruta mentions about various *Gara Visha Adhishtanas*. Some of them have direct link with cosmetic toxicity like *Abyanga Visha*, *Anjana Visha*, *Parisheka Visha*, *Anulepana Visha*, *Mukhalepa Visha* etc. If collyrium is poisonous, it will produce *Daha* (burning sensation), *Vedana* (pain), *Drshti Vibhrama* (visual difficulties) and *Andhyam* (blindness). *Abyanga Visha* produces symptoms like *Sphota* (eruptions), *Ruja* (pain), *Srava* (exudation), *Twakpaka* (ulcer),

Jwara (fever), *Mamsanam Daranam* (deep seated ulcers) etc. *Mukhalepa Visha* produces symptoms similar to that of *Abyanga Visha* with additional symptoms like *Syavamukha* (blackish discolouration of the face) and thorny eruptions like those found in the *Padminikantaka* (lotus flower).^[8]

DISCUSSION

Ayurvedic management of Cosmetic toxicity

Samanya Chikitsa (general management) of *Gara Visha* is mainly *Sodhana* (purifactory therapies) - *Vamana* (emesis) and *Virecana* (purgation). Along with this *Hridayavarana* treatment (protection of Heart), administration of *Swarna* (gold), *Samana Prayogas* (palliative treatment) can be utilized.^[9] But in case of cosmetic toxicity, *Samana* therapies (palliative) will be more useful than *Sodhana* therapies (purifactory). Because usually we are identifying cosmetic toxicity of immediate nature like urticarial reaction, allergic dermatitis etc. So *Samana* (palliative therapies) will be more apt for this condition. Here we can use both internal and external therapies with drugs having properties like *Pācana* (promoting digestion), *Deepana* (kindling digestive fire), especially with *vishshara* (anti-toxic) properties. According to the condition, we can use internal medicines like *Lodrasevyadi Kashaya*, *Guluchyadi Kashaya*, *Drakshadi Kashaya*, *Murvadi Churna*, *Dushivishari Gulika*, *Dasanga Gulika* and external medicines like *Pathyakshadathryadi Kshalanam* (pouring of medicated water), *Neelidaladi Keram*, *Paranthyadi Keram*, *Sigrupunarnavadi Lepam*, *Kottamtakaradi Churnam*, *Triphala Churnam* etc. *Gara Adhishtana* treatment can also be incorporate in suitable conditions.

Prevention

1. Healthy life style
2. Attitude
3. Natural methods

The best prevention strategy is to maintain a well regulated life style. A balanced nutritious diet is important in maintaining healthy and beautiful skin.

Food with vitamin A, vitamin C, vitamin E, polyphenols etc. should be included in the diet.^[10] Accept yourself and Love the way you look is the important one in the prevention. In Ayurveda, there are so many natural methods mentioned which includes single drug therapy and combinational therapy. For example, as cleansers we can use Licorice, *Manjishta* (Indian Madder), Sandal wood, Fenugreek, Lemon peel with water/milk/lemon juice/yoghurt. For scrubbing action - Oats, *Tulasi* (Holy basil), Rose petals with water or barley, Rice bran, *Amalaki* (Gooseberry), Neem, *Manjishta* (Indian Madder) with lemon/aloe. As face packs we can use fruits and vegetables with honey/lemon/yogurt according to the skin texture. For normal skin almond oil will be good as moisturizer. Arrow root powder mixed with any *Suganda Dravyas* (aromatic drugs) can be used as face powder. As lip balm butter/ghee/*Yashti* (Licorice) + honey or bee wax + butter will be good choice. Traditional Kajal preparation with *Sahadevi Moola Swarasa* (juice of *Vernonia cineria*) can replace the toxic eye care cosmetics.^{[11],[12]}

CONCLUSION

The widespread use of cosmetic products is increasingly recognized as a public health, environmental justice, and social justice issue. There is a great demand of application of Ayurveda principles in this field. Awareness of the toxic ingredients and utilizing the natural products will help to reduce the incidence of cosmetic toxicity.

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