

BEAUTY AND ITS BEASTLY SECRETS: THE TOXIC TRUTH ABOUT COSMETICS

Sailekha P¹, M G Anitha², Manu R Mangalath³, Ittoop J. Ancheril⁴

^{1,4}P.G Scholar, ²Associate professor, Dept.of Agada tantra, ³P.G Scholar, Dept. of Shalya Tantra, Sri Dharmasthala Manjunatheshwara College of Ayurveda & Hospital, Hassan, Karnataka, India.

ABSTRACT

According to Drug and Cosmetic Act 1940, 'Cosmetic' means any article intended to be rubbed, poured, sprinkled or sprayed on, or introduced into, or otherwise applied to, the human body or any part for cleansing, beautifying, promoting attractiveness, or altering the appearance, and includes any article intended for use as a component of cosmetic but doesn't include soap. Cosmetics are an unavoidable part of our day to day life, notwithstanding the hazardous fact. The synthetic ingredients in cosmetics can induce a wide range of health hazards that varies from skin allergies to cancers, hormone disruption and damage even at the cellular level.

Keywords: *Cosmetics, synthetic ingredients.*

INTRODUCTION

Today, consumers worldwide are looking for personal care products that supply multiple benefits with minimal efforts. Not only women but also males are using cosmetics usually to enhance their facial features. Cosmetics include skin moisturizers, perfumes, lipsticks, nail polishes, eye and facial makeup preparations, cleansing shampoos, hair colors, deodorants etc. In cosmetics, the main concern is to reach cutaneous cell while limiting the passage into the blood circulation. The objectives of topical therapy can therefore be classified into two major areas.

1. To modulate or assist the barrier function of skin.
 2. To administer an active ingredient to one or more skin layers or compartments while minimizing systemic involvement.
- Depending on the composition, a vehicle is used to exert mainly five types of effects on

the skin like cleansing, decoration, care, hydration and protection. Carrier technology offers an intelligent approach for drug delivery by coupling the drug to a carrier particle such as nanoparticles, microspheres, liposomes, etc. which modulate the release and absorption characteristics of the drug.¹

Synthetic ingredients: There are over 150 ingredients used in each product and, according to experts, many of these are toxic and potentially damaging our health. These include artificial fragrances, coloring agents, pesticides, preservatives and other synthetic chemicals. Now, we know that sixty per cent of any substance applied to the skin is absorbed into the body (researchers estimate the average woman absorbs about two kilograms of chemicals through toiletries and cosmetics every year), and there is major concern that these substances can cause a wide variety of health problems, from aller-

gies to cancers. The problem arises because of the combination of these ingredients in a single product, and the use of a combination of products, all containing a number of chemicals. One lipstick, for instance, may contain six to eight preservatives—some for the colour, some for moistness, and some for the fragrance. Together, they could be a harmful cocktail of toxic ingredients².

Some of the cosmetics in daily life and their ingredients

Talcum powder: It contains talc as an active ingredient, calcium carbonate as absorbent and calcium silicate and magnesium carbonate as anti caking ingredients. The fragrance used in most of the talcum powder is grade dipropylene glycol.³

Fairness cream: The whitening agent present in fairness cream is hydroquinone. Kojic acid (vitamin C derivative) and mercuric salts are used to block melanin production in skin. Retinoic acid (vitamin A derivative) helps to peel off the surface layers of the skin.⁴

Sunscreen lotion: The UVA filter used in sunscreen lotion is Oxybenzone. Other ingredients are Retinyl palmitate (vitamin derivative) and fragrances.⁵

Shampoo: The main ingredient, Sodium lauryl sulphate (SLS) is used in shampoos as a lather producing agent, Diethanol amine (DEA) function as emulsifiers to produce foam and bubbles and parabens are used as preservative. Dioxane is used as a solvent and glycol is used as a carrier for scents in shampoos.⁶

Lip stick: In lipstick, Tocopheryl Acetate (vit E acetate) is a main ingredient. Parabens are used as preservative. Retinyl Palmitate is a skin conditioning agent. Colorants like D&C Red 36 D&C Red 22 Aluminum Lake are also used as ingredients in lipstick.⁷

Eye liner: The main ingredients are Acrylate Co Polymer which can act as film formers, and for thickening Waxes, Natural Gums, and Clays are used. Other pigments like Ultramarine for Blue, Chromium Oxide for Green, Titanium Dioxide for White colour and as preservative parabens are used.⁸

Hair dye: The main ingredients in hair dye are P-phenylenediamine for brightening, Hydrogen Peroxide as a bleaching agent, Persulfates which act as oxidiser, bleach and detergent and Resorcinol as plasticizers.⁹

Deodorants and antiperspirants: The ingredient Butylated hydroxytoluene which acts as antioxidant while Aluminum-based compounds temporarily plugs the sweat ducts. Parabens are the preservative used.¹⁰

DISCUSSION

Talcum powder: In its natural form, some talc contain asbestos, a substance known to cause lung cancer. Studies show a strong link between frequent use of talc in the female genital area and ovarian cancer. It is able to move through the reproductive system and become imbedded in the lining of the ovary. Researches proved the occurrence of ovarian cancer with genital powder usage.¹¹

Fairness cream: Mercury damages the brain, nervous system and kidneys and is harmful to pregnant women also. Researchers have proved that 'Minimal change disease' can be caused by exposure to mercury-containing skin lightening cream which is presented with nephrotic syndrome and heavy proteinuria.¹²

Sunscreen lotion: The UVA filter ie, oxybenzone can cause hormone disruption in our body. Retinyl palmitate can cause skin tumour and lesions. The fragrance used in sunscreen can induce organ toxicities and

allergies. Studies have shown that currently used sunscreens can cause adverse skin and systemic reactions, owing to their penetration into the viable cutaneous strata and to transdermal absorption.¹³

Shampoos: All most all ingredients in shampoo are carcinogens. Apart from that glycol and dioxane disrupt kidney and liver functions. Studies have shown that a number of known contact allergens are used as ingredients in shampoos, and contact allergy due to shampoos is a well known entity. Xenoestrogens like parabens, aluminium salts, phthalates, or bisphenol A, are chemicals which have an estrogen-like effect or disrupt the normal metabolism of the natural estrogen and thus act as carcinogens. Some of them have been shown to result in DNA damage in animal and human mammary epithelial cells.¹⁴

Lipstick: Tocopheryl Acetate (vit E acetate) is known for making Skin Irritations. Parabens and retinyl palmitate are endocrine disruptors and Carcinogens. Colourants added to lipstick can cause nervous system damage and other health hazards.¹⁵

Eyeliner: Ingredients like Acrylate Co Polymer, Waxes, Natural Gums, And Clays and other colouring pigments are irritants. Paraben is a known carcinogenic.¹⁶

Hair dye: The main ingredient, P-phenylenediamine can induce disturbances in Immune system, CNS, Lungs, Kidneys & Liver. Hydrogen Peroxide can Damage DNA, induce disturbances in Digestive system, Lungs & CNS. Persulfates can cause asthma & lung damage. Resorcinol can induce Thyroid dysfunction & CNS damage.¹⁷

Deodorants and antiperspirants: The ingredient Butylated hydroxytoluene is a known Carcinogen and Hormone disruptor.

Aluminum-based compounds and Parabens are carcinogens.¹⁸

By looking at these ingredients of cosmetics, we can see that most of them are having carcinogenic and endocrine disrupting action. These synthetic chemical ingredients are absorbed into body and they mimic or block the hormones. Thereby they can disturb the normal body functions either by altering the normal hormone levels or halting or stimulating the production of hormones or by changing the way hormones travel through the body. For example, we can see the action of endocrine disruptors acting on hypothalamo-pituitary-ovarian axis. Here they alter gonadotropin hormone release from pituitary and act on ovaries for releasing oestrogens leading to the abnormal level of oestrogen in the body. This leads to bulky endometrium, ovarian cancer, breast cancer etc. Similarly the endocrine disruptors can act on any other systems and can lead to different ailments.

CONCLUSION

Makeup is so well known for causing acne that it has its own term in dermatology, *Acne Cosmetica*. Exposure from one cosmetic product might be less in quantity; daily use of a host of cosmetic products applied directly on the skin can lead to significant exposure and potential harm which can cause serious hazards to our body. This paper made an attempt to create awareness amongst society about the hazards of the synthetic cosmetics and has thrown some light on this area. Apart from this, hygienic usage of cosmetic is also a matter of concern. We should not use cosmetic products from unfamiliar sources, should not rely on advertisements or labels, and should not apply any products on irritated or damaged skin. It is better to avoid sharing personal

care products and avoid the usage of products other than intended use. It is our wisdom which has to be the guiding factor in deciding our preferences for cosmetics.

REFERENCES

1. <http://www.ijpsdr.com/pdf/vol4-issue3/2.pdf>
2. http://en.wikipedia.org/wiki/Ingredients_of_cosmetics
3. <http://www.thefactsabout.co.uk/content.aspx?pageid=100>
4. <http://www.skintherapyletter.com/2001/6.13/2.html>
5. <http://www.ijdvl.com/article.asp?issn=0378-6323;year=2009;volume=75;issue=7;page=10;epage=12;aulast=Kubba>
6. <http://www.thefactsabout.co.uk/content.aspx?pageid=100>
7. http://www.tcclinic.com/learning_centre/skin/acnecosmetica.htm
8. <http://www.webmd.com/beauty/makeup/makeup-decoding-eyeliner>
9. http://www.tcclinic.com/learning_centre/skin/acnecosmetica.htm
10. <http://www.breastcancerfund.org/clear-science/environmental-breast-cancer-links/cosmetics/>
11. <http://www.thefactsabout.co.uk/content.aspx?pageid=100>
12. <http://www.skintherapyletter.com/2001/6.13/2.html>
13. <http://www.ijdvl.com/article.asp?issn=0378-6323;year=2009;volume=75;issue=7;page=10;epage=12;aulast=Kubba>
14. <http://www.thefactsabout.co.uk/content.aspx?pageid=100>
15. http://www.tcclinic.com/learning_centre/skin/acnecosmetica.htm
16. <http://www.webmd.com/beauty/makeup/makeup-decoding-eyeliner>
17. http://www.tcclinic.com/learning_centre/skin/acnecosmetica.htm
18. <http://www.breastcancerfund.org/clear-science/environmental-breast-cancer-links/cosmetics/>

CORRESPONDING AUTHOR

Dr. Sailekha P

P.G Scholar

Sri Dharmasthala Manjunatheshwara

College of Ayurveda & Hospital,

Hassan, Karnataka, India

Email: dr.sailekha@gmail.com

Source of support: Nil
Conflict of interest: None Declared