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Review Article

CRITICAL APPRAISAL OF COSMETICS IN AYURVEDA

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ABSTRACT

The ancient science of cosmetology is believed to have originated in Egypt and India, but the earliest records of cosmetic substances and their application dates back to circa 2500 and 1550 B.C, to the Indus valley civilization. There is evidence of highly advanced ideas of self-beautification and a large array of various cosmetic usages both by men and women, in ancient India. Many of these practices were subtly interwoven with the seasons and the normal rituals of life. Significantly, the use of cosmetics was directed not only towards developing an externally pleasant and attractive personality, but also towards achieving excellence, longevity with good health and happiness. Harmful chemicals found in synthetic cosmetics such as hair dyes, shampoos, nail polishes, face creams etc. results in occupational hazards like allergies, dermatitis, respiratory health problems and even carcinogenic effects. Keeping the health hazards with the synthetic cosmetics in view, the present study has been taken up to reveal the safest herbal beautifying formulations embedded in the lore of Ayurvedic literature.

Keywords: Cosmetics, Health Hazards, Ayurvedic formulations.

INTRODUCTION

The word cosmetic is defined as 'A preparation, such as powder or a skin cream, designed to beautify the body by direct application'. Similarly the study or art of cosmetics and their use is known as Cosmetology.

In the ancient classical literature of Ayurveda, there are several references related to a number of medicinal plants and the mode of application of their processed formulations for enhancing complexion, treating acne, dark patches, boils and carbuncles etc. are available. Ayurvedic cosmeceuticals are very much prized for their safe and holistic action. Based on the vast and established knowledge of Ayurveda, herbal extracts, fruit extracts and essential oils are now being effectively used in medicines, food supplements and personal care. Ranges of Ayurvedic cosmeceuticals are available for ageless skin, tonifying it, smoothing its imperfections, and increasing its hydration level, thus restoring a radiant and healthy look. Such preparations actively protect the skin and prevent premature aging.

Objectives:

- To reveal the health hazards of the synthetic cosmetics
- To find out the safest herbal beautifying formulations embedded in the lore of Ayurvedic literature

MATERIALS AND METHODS

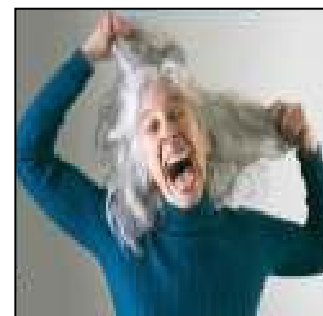
A thorough study of cosmetics is done by consulting the available ancient and modern literature as well as electronic material and documented the useful and safest herbal beautifying formulations.

Observations:

A number of practically proven and safest formulations related to different conditions viz. Grey hair, Baldness, Dandruff, Depilation (Hair removal), Acne, Warts, Black spots, Wrinkles, Nail diseases, Cracks on the foot, Floppy Breast etc. have been recorded in the present study.

Greyhair

Nowadays grey hair is seen in many a number of people and become embarrassing, particularly when it happens in the early age. Grey hair occurs when the hair is devoid of the pigment called "melanin". The other factors responsible for the occurrence of grey hair are genetic predisposition, use of synthetic shampoos, hair dyes and exposure to



environmental pollution. However, some of the recipes mentioned in Ayurveda can be helpful to alleviate premature greying of hair and also restore natural colour in certain cases.

- External application of the paste of *Triphala* (*Terminalia chebula*, *Terminalia bellerika* and

Emblica officinalis), *Neeli Patra*(leaves of *Indigofera tinctoria*), *Bhringaraja Patra*(leaves of *Eclipta alba*) and *Loha Bhasma* (incinerated Iron) mixed with sheep urine turns the grey hair into black².

Table 1: Showing the chemicals useful in cosmetic industry and their health hazards¹

Sl. No.	Chemical	Uses	Hazards
1.	<u>Petroleum based products:</u> a) Petrolatum b) Mineral oil c) Paraffin d) Paraffin oil e) Paraffin wax	a) Shampoos b) Hair relaxers c) Anti-aging creams d) Mascaras e) Perfumes f) Lipsticks g) Lip balms.	<ul style="list-style-type: none"> • Potential carcinogenic (cancer causing) effect.
2.	a) Sodium Lauryl Sulphate (SLS)/ Ammonium Lauryl Sulphate	a) Shampoo b) Bath & shower products c) Toothpaste	<ul style="list-style-type: none"> • Damage to the liver, lungs, and immune system • Depression of nervous system • Reproductive system disorders • Severe skin irritant
3.	<u>Phthalates:</u> a) Dibutyl phthalate (DBP) b) Di(2-ethylhexyl) phthalate (DEHP) c) Butyl benzyl phthalate	a) Perfumes b) Hairsprays c) Nail polishes d) Skin moisturizers	<ul style="list-style-type: none"> • Negative effects on the reproductive system and early development.
4.	<u>Parabens:</u> a) Alkyl parahydroxy benzoates b) Butyl c) Methyl d) Ethyl e) Propyl f) Isobutyl paraben	a) Deodorants b) Moisturizers	<ul style="list-style-type: none"> • Interfere with estrogens levels.
5.	a) Hydroquinone	a) Skin lightening products b) Moisturizers	<ul style="list-style-type: none"> • Carcinogen • Neurotoxin • Skin sensitizer • Cause ochronosis
6.	a) Lead acetate	a) Hair dyes b) Cleansers	<ul style="list-style-type: none"> • Toxic to the human reproductive system
7.	a) Mercury also known as thimerosal.	a) Eye drops b) Ointments c) Mascara	<ul style="list-style-type: none"> • Toxic effects on the human reproductive system • Carcinogen.
8.	a) Triclosan also known as 5-chloro-2, 4 dichlorophenoxy)-phenol.	a) Liquid soaps b) Deodorants c) Mouthwashes d) Toothpastes e) Vaginal washes etc.	<ul style="list-style-type: none"> • Cancer causing dioxins
9.	a) Toluene	a) Nail polish.	<ul style="list-style-type: none"> • Skin irritant, Irritates the respiratory tract • Highly poisonous and toxic to the central nervous system, eyes, blood, liver, kidneys, and skin • May cause women to have spontaneous abortions.
10.	a) Xylene or Xylol or Dimethyl benzene	a) Nail polish	<ul style="list-style-type: none"> • Irritates the skin and respiratory tract. • May damage the liver. • Has a narcotic effect at high concentrations

- Nasal administration of *Yashtimadhuka Taila* [*Yashtimadhu* (Glycyrrhiza glabra), *Yavakshara* (alkali prepared from *Hordeum vulgare*), *Amalaki* and *Tila Taila* (sesamum oil)] for a period of seven days is useful for the management of grey hair³.
- *Nimba bija taila* [*Nimba Bija* (seeds of *Azadirachta indica*), *Bhringaraja*, decoction of *Asana* (*Pterocarpus marsupium*) and *Tila Taila*] used as nasal drops is effective in premature graying of hair⁴
- Regular use of *Sarshapa taila* (mustard oil) as *Nasya* is also effective in the management of grey hair⁵
- Intake of the decoction of *Dasamoola*, *Bhringaraja* and *Jatamansi* (*Nardostachys jatamansi*) with goat's milk at bedtime relieves premature graying of hair⁶.
- External application of the paste of *Tila*, *Amalaki*, *Kinjalka* (stamens of the lotus flower), *Yashtimadhu* and honey on the scalp restores the normal color of the hair and also promotes hair growth⁷.

Research profile:

1. Datta et al reported that the methanol extract of *Eclipta alba* may have potential as a hair growth promoter⁸.
2. *Eclipta alba* is possessing rich source of natural dyes and the ultrasonic dyeing of cotton fabric with aqueous extract of *Eclipta alba* is reported by P.S.Vankar, R. Shankar and J. Srivastava⁹
3. K.P.Sampath Kumar, Debjit Bhowmik et al. reported that the *Amalaki* fruit is the richest source of Vitamin C and is a diuretic, Laxative and hair dye¹⁰
4. Compared to Minoxidil, *Eclipta alba* initiated hair growth quickly. Even the time for completed hair growth was significantly less. This herb for hair growth is 46% more than Minoxidil¹¹.

BALDNESS:

Baldness is the partial or complete lack of hair growth, and part of the wider topic of "hair thinning". Both hair relaxer solutions, and hot hair irons can also induce hair loss. In some cases, alopecia is due to underlying medical conditions, such as iron deficiency. Generally, hair loss in patches signifies alopecia areata. Alopecia areata typically presents with sudden hair loss causing patches to appear on the scalp or other areas of the body. If left untreated, or if the condition does not respond to treatment, complete baldness can result in the affected area, which is referred to as alopecia totalis. When the entire body suffers from complete hair loss, it is referred to as alopecia universalis. It is similar to the effects that occur with chemotherapy.



- External application of the paste of *Gokshura* fruits (*Tribulus terrestris*), *Tila* (*Sesamum indicum*) flowers, honey, and ghee on the scalp relieves baldness¹².

- Similarly application of the oil prepared with the leaf of *Jatiphala* (*Myristica fragrans*), *Karanja* (*Pongamia pinnata*), *Varuna* (*Crataeva religiosa*), *Karavira* (*Nerium indicum*) and *Chitraka* (*Plumbago zeylanica*) over the scalp alleviates baldness¹³.
- Application of *Hastidantamasi* (ash of elephant's tusk) over the scalp gives much better results in curing baldness¹⁴.

Research profile:

1. Many a number of research works have proved that *Tribulus* is a testosterone booster. Low testosterone might cause excessive hair loss. Hence, *Tribulus* can be considered as one of the drugs of choice in baldness¹⁵.

DANDRUFF:

Dandruff is a common scalp disorder affecting almost 50% of the population at the post-pubertal age and of any gender. It often causes itching. It has been well established that keratinocytes play a key role in the expression and generation of immunological reactions during dandruff formation. The severity of dandruff may fluctuate with season as it often worsens in winter. Most cases of dandruff can be easily treated with specialized formulations.



- Pound *Khas-Khas* seeds (*Papaver somniferum*) in milk and apply on the scalp for the management of dandruff¹⁶.
- External application of the paste prepared by pounding *Amra beeja* (*Mangifera indica*) and *Haritaki* (*Terminalia chebula*) with milk alleviates dandruff¹⁷.
- Similarly oil prepared with *Gunja phala* (*Abrus precatorius*) and *Bhringaraja Swarasai* also useful in dandruff¹⁸.
- Application of the oil of *Nimba* and *Karanja* mixed with *Karpura* (*Cinnamomum camphora*) over the scalp cures the dandruff¹⁹.
- Grains of black gram dipped in sour gruel for three weeks and apply over the scalp for the management of dandruff²⁰.

Research profile:

1. Neem oil is reported to be the best fungicide²¹.
2. The anti-microbial activity of different types of Neem extracts & Neem products are well documented in various studies. (Shankar narayanan 1965, Rao et al 1986, Singh et al 1988)²²
3. Antifungal activity of *Haritaki* fruit is reported by Inamdar et al 1959²³
4. The essential oil from the plant possesses potent anti fungal activity against many fungi such as *Aspergillus fumigatus*, *Candida albicans* etc. (Thind and Suri 1979)²⁴

DEPILATION (HAIR REMOVAL):

Presence of excessive hair on the face, chest and other body parts where terminal hair does not normally occur in women is known as Hirsutism. It refers to a male pattern of body hair and it is therefore primarily of cosmetic and psychological concern. Many women with unwanted hair seek methods of hair removal by means of waxing, shaving, laser treatment etc. Since antiquity the following depilation measures were in practice.



- External application of *Karaviradi taila* [roots of *Karavira*, *Danti* (*Baliospermum montanum*), *Trivrit* (*Operculina turpethum*), *Koshataki Phala* (*Luffa acutangula*), *Kshara* of *Rambha* (alkali prepared from *Musa paradisiaca*)] over the unwanted hair is giving good results²⁵
- Prepare the paste from *Sankha Bhasma* (incinerated conch shell - 2 parts), *Manahshila* (Arsenic disulphide ½ part), *Talaka* (Arsenic trisulphide 1 part), mixed with water and apply over unwanted hair for 7 times. It is a good remedy for depilation.²⁶
- Application of the paste of *Dhattura bija* (*Datura metal*) over unwanted hair is also beneficial for depilation.²⁷

ACNE:

Acne is a common skin disease that involves the sebaceous glands at the base of hair follicles and occurs during puberty when these glands are stimulated by male hormones produced by the adrenal glands of both males and females. There are many myths about what causes acne. Chocolate and greasy foods are often blamed, but there is little evidence that foods have much effect on acne in most people. Ayurveda has some potent remedies for treatment of acne from the inside out.



- Thorns of *Salmali* (*Bombax ciba*) are pound in milk and apply the paste over the face for 3 days for the management of Acne²⁸.
- External application of the paste of *Vata ankura* (leaf buds of *Ficus bengalensis*) and *Masura dala* (*Ervum lens*) alleviates acne²⁹.
- *Manjistha Churna* (*Rubia cordifolia*) mixed with honey and apply over the face is an effective remedy in acne³⁰.
- External application of the paste prepared by pounding *Varuna* (*Crataeva religiosa*) bark with goat's urine cures acne.³¹
- Application of the paste of *Jati phala* (*Myristica fragrans*) is simple and effective remedy in curing acne.³²

- Application of paste prepared with *Jati phala*, *Chandana* (*Santalum album*) and *Maricha* (*Piper nigrum*) also cures acne.³³

Research profile:

1. Rathod had conducted clinical studies on 90 patients of the patients aged in between 15-30 yrs. and reported that *Salmali* thorn powder is very effective in acne (*Mukhadushika*)³⁴.
2. Anil S.Managali had conducted a clinical trial and reported that *Manjista Madhu Lepa* was found effective in the management of *Yavanapidaka*³⁵.
3. In another study it is reported that *Rubia cordifolia* prevents serious allergic reactions to foods and it is useful for the management of acne³⁶.
4. Khan.N et al. contributed for the development of anthraquinones rich anti-acne gel from *Rubia cordifolia* and reported that it is a potential, safe and efficacious remedy for treating acne³⁷.
5. Yaouxuebao in the year 1990 reported that *Rubimallin* extract of *Rubia cordifolia* showed anti-bacterial activity³⁸.
6. Tripathi et al. in the year 1993 studied the blood purification effect of the partially purified fraction of this whole plant of *Manjistha* on rabbit platelets³⁹.

BLACKISH SPOTS:

Dark spots on the skin, also called hyperpigmentation, are a common skin problem especially beginning in middle age. There are a variety of conditions and agents that can cause dark spots to develop.



- External application of paste prepared by pounding *Haridra* (*Curcuma longa*) with *Arka Kshira* (milky latex of *Calotropis gigantia*) over the spots is the best remedy to remove blackish spots⁴⁰.
- Application of the paste of *Manjistha* and honey is a simple remedy in curing blackish spots⁴¹.
- Prepare the paste of *Masura dala* by pounding with milk and apply over the blackish spots after mixing with ghee⁴².

NAIL DISEASES:

Fungal infections are caused by microscopic plants that live on our skin and on the dead tissue of our hair and nails. Paronychia infection, *Pseudomonas* bacterial infection, *Tinea Unguis* (ringworm of nails), *Onychogryposis* (claw-type nails), *Onychorrhexis* (brittle nails), *Leuconychia* (white lines), *Psoriasis* of the nails, *Brittle Nails* (vertical splitting) etc. are some of the diseases of the nails.

Chipya (Onychia purulenta):

- Take *Haridra Swarasa* (fresh juice of *Curcuma longa*) in iron bowl and mix *Haritaki Churna* (*Terminalia chebula*) and apply on the nail for the management of *Chipya*⁴³.
- Application of the bandage with the paste of the leaves of *Kashmarya* (*Gmelina arborea*) on the nail relieves *Chipya*⁴⁴.

Research profile:

1. Anti-inflammatory activity of volatile oil of the *Haridra* was investigated with reference to the inhibition of activated proteases responsible for acute inflammatory processes (Tripathi et al. 1973)⁴⁵
2. The anti-inflammatory effect of volatile oil of the *Haridra* has been found to be greater than that of hydrocortisone (Katare, 1974)⁴⁶
3. Various extracts prepared from the powdered fruits of *Haritaki* have been wide antibacterial and antifungal spectrum (Inamdar et al., 1959)⁴⁷
4. *Kashmari*, Premnazole showed anti-inflammatory activity comparable to that of phenylbutazone in reducing cotton pellet induced granuloma formation in rats. (fitoterapia 1992,63,295)⁴⁸
5. Rambir Singh et al., Dr B. R. Ambedkar Center for Biomedical Research, University of Delhi, reported that the *Curcuma longa* rhizome extracts were evaluated for antibacterial activity against pathogenic strains of Gram-positive (*Staphylococcus aureus*, *Staphylococcus epidermidis*) and Gram-negative (*Escherichia coli*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*) bacteria. Essential oil was found to be most active and its activity was compared to standard antibiotics gentamycin, ampicillin, doxycycline and erythromycin in these strains⁴⁹.
6. Ronita de, Parag Kundu et al., reported the Antimicrobial Activity of Curcumin against *Helicobacter pylori* isolates from India and during Infections in Mice⁵⁰
7. N. Niamsaand C. Sittiwet reported that the aqueous extract of *C. longa* exhibited antimicrobial activity against *Escherichia coli*, *Staphylococcus aureus*, *Krebsilla pneumonia* and *Staphylococcus epidermidis*⁵¹
8. Rana Pratap Singh* and D.A.Jain reported that the total curcuminoids content showed better antibacterial as well as antifungal activity as compare to volatile oil extracted from turmeric. Kanamycin was used as standard drug for antibacterial activity and Fluconazole as standard for antifungal activity⁵²
9. Sujata & Kulkarni, 1989 studied In Vitro antibacterial activity of extracts from *T.chebula* against gram positive & gram negative bacteria.⁵³
10. Dhar et al., 1968 reported that the anti-viral activity of *Kashmarya* against Ranikheth disease.⁵⁴

Kunakha (Onychogryphosis):

- Apply the paste prepared of *Kushta* (*Saussuria lappa*) & *Jeeraka* (*Cuminum cimum*) over the nail to alleviate Kunakha⁵⁵
- Dusting the powder of *Tankana* on corners of nail and tying relieves in curing *Kunakha*⁵⁶

Research profile: The essential oil of *Kushta* roots has strong antiseptic and disinfectant properties especially against streptococcus and staphylococcus (Chopra, 1958)⁵⁷.

CRACKS ON THE FOOT:

One of the neglected parts of our body is foot, which leads to cracks on the foot and is predominantly seen in winter season.

It is not only a cosmetic problem but also when the fissures or cracks are deep, they are painful to stand and the skin can bleed and in severe cases they can be infected. For this condition some of the Ayurvedic preparations are mentioned below.



- External application of the powder of *Sarjarasa* (gum resin of *Vateria indica*) and *Saindhavalavana* mixed with honey and ghee relieves cracks on the foot⁵⁸.
- Application of *Ankola patra Swarasa* (leaf juice of *Alangium salvifolium*) or *Vata Ksheera* (milky latex of *Ficus bengalensis*) shows positive results in crack foot⁵⁹
- Application of *Vacha* (*Acorus calamus*) *Churna* mixed with *Madhuchista* (beeswax) and ghee is also beneficial in crack foot.⁶⁰

Research profile:

1. *Sarja rasa* exhibited significant Anti-ulcer activity against induced gastric ulcers in rats (Biswas et al., 1993)⁶¹
2. Bagade Sarojini was conducted a clinical trial on 60 patients by comparing the efficacy of *Sala Niryasa* and *Madhuchista* and reported that both are equally effective in the management of *Padadari*⁶².

FLOPPY BREAST:

Floppy breast probably means that more fat in breasts than glandular tissue, which helps maintain firmness. Another cause: The ligaments that support breast may have become stretched out. Other droop-inducers include breast-feeding and weight loss. And jogging without proper support also may result in floppy breast.

- External application of the oil prepared from *Vata Kshira* (*Ficus benghalensis*) is useful for the management of floppy breast.⁶³
- Application of oil to the breast prepared from bark, root and leaves of *Kashmarya* (*Gmelina arborea*) is also useful.⁶⁴
- Application of the paste prepared by pounding *Eranda patra* (*Ricinus communis*) with vinegar alleviates floppy breast⁶⁵.

**DISCUSSION AND CONCLUSION**

In fact, the concept of beauty and cosmetics is as old as mankind and civilization. Nowadays the consciousness of beautification is increasing day by day not only in women but also in men by adorning themselves with jewelry, scent and cosmetics. Harmful chemicals found in cosmetics such as hair dyes, nail polishes results in occupational hazards like allergies, dermatitis and other respiratory health problems; and which has forced approximately 20% of hair dressers to stop practicing their profession. Hence, herbal cosmetics have been

of great demand as they are efficient, safe and have lesser side effects. Currently Ayurveda concepts have got lot of attention and have been witnessing a huge rise in demand not only nationally but on international arena. The cosmetics industry registered impressive sales worth Rs 422.3 Billion (US\$ 9.3 Billion) in 2010. Indian cosmetics sector is expected to witness noteworthy growth rate in near future, owing to the rising beauty concerns of both men and women. This is the time to awake and tap the market demand by making the practically proven herbal cosmetic formulae into value added products.

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