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Natural Drugs from Marine Originates: A Review

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ABSTRACT

Humans are fortunate to have a huge biological diversity on the Earth. The marine environment is an exceptional reservoir of bioactive natural products many of which are not reveal on land surface. As marine originates are adapted for protection, reproduction, communication because of physical and chemical conditions in the marine environment so from the fundamental view of biodiversity, the ocean is for more diverse and really would have been better place to start to evolve a natural pharmacy.

KEYWORDS

Natural drugs, Marine origine, Ayurveda, Sidha, Unani



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INTRODUCTION

Our Earth is covered with 70% of water. It says that there is a larger world situated in the marine water than as on land.

Nowdays a lot of researches are going on Natural drugs¹³ because allopathic drugs have a very bad side effects on human body as well as they are not easily absorbable one². So demand of natural drugs is going up. Herbal drugs are commonly used for treating diseases but now we have to focus on marine originates as they are tremendous in nature and easily available. In this article we want to make a small contribution for assembling use of marine originates as natural drugs AYUSH (Ayurveda, Yoga, Unani, Sidhi, Homeopath-pathies).

AIMS AND OBJECTIVES

To highlight the therapeutic efficacy of marine originates as natural drugs and explore their safety profile.

Medicinal Marine Organisms

• **Coral (Praval) :-**

Coral (Praval) is the calcareous skeleton called spicules that mainly contains calcium carbonate; it has a special affinity for iron as it combines with a calcium organic complex to give colouring pigments¹⁵. Coral also contains small amount of magnesium, iron and phosphorous. Calcium percentage in

Pravala is approximately 80-90. Synonyms are Sanskrit- Pravala, Hindi- Muga, English- Coral¹⁶.

In the Ayurvedic system, the ash form of corals, popularly known as *PravalaBhasma* has been used in treating respiratory tract infections like cough, pulmonary tuberculosis, bronchial asthma, chronic bronchitis, fever, urinary diseases, spermatorrhoea, gleet, gonorrhoea, carbuncle, scrofulous affections. It is also used in headache, giddiness and vertigo. It is used in the treatment of breast cancer²⁰, lungs, stomach and uterus, anaemia, and haemolytic jaundice. Ayurvedic drugs are *Kasturibhairav rasa*, *Pravalpanchamrit*, *Chudamani rasa*, *Unmadbhanjan rasa*¹⁸.

In Siddha system of medicine, coral is mentioned as *Pavalam* and *Pavalamb* based drugs have been used to treat Anorexia, Delirium, Oligospermia, Eye diseases, Rickets, Diabetes mellitus, Skin diseases, Ulcers, Puerperal sepsis⁸ and many diseases as used in Ayurveda.

In Unani system of medicine, Root (*BikheMarjan/Bussud*) and branch of coral (*Shakh-e-Marjan*) are used separately for different medicinal purposes²³. Internally it is astringent in action, styptic, controls Diarrhea, UTI and a general tonic. It is also useful in treating Melancholia, Epilepsy, Insanity, Palpitation,



Enlargement of spleen, Gastric disorders, Renal calculi and Piles²⁵.

- **Conch(Shankha):-**

It is the largest class of mollusca containing species and includes snails, slugs, limpets, whelks etc. The most characteristic feature is spirally coiled shell enclose visceral mass, found very commonly in Indian Ocean coasts³. Conch is the empty shell of *Turbinella rapa* or *Xanchuspyrum*, a marine gastropod.

Synonyms are in Sanskrit- *Sankha*, *Kambhu*, *Kamboj*, *Sankhak*, *Haripriyo*; Hindi- *Sankh*; English- *Conch shell*.

Chemical Constituents of shankha are Carbonate of Calcium, Iron, Magnesium, Sulphate, Phosphate and Chloride.

Conch is known as *Shankha* in Indian medicine and *Shankhabhasma*(Conch shell ash)prepared by incinerating⁷. Conch shell is used in treating Dyspepsia, Digestive impairment, Malabsorption syndrome, Hepatomegaly, asthma, Phthisis ,Tumours and Duodenal ulcer. The flesh of this animal, used as an anodyne, is nutritious and is a cardiac stimulant.*Shankhabhasma*(Conch shell ash) is used for Earache, Ulcers, and Eye troubles and is indicated internally in case of Dyspepsia, Gonorrhoea, Colic, Dysentery, Jaundice, Tympanitis and Flatulence.*Shankhabhasma* is used for treatment of Hyperpyrexia-high fever, Eye-

salves and pastes prepared using burnt conch shells are used in Ophthalmic and other Ocular infections. A pill called *Sankhavati* made from conch shell is used in Dyspepsia, Acid urine, Diarrhoea and Chronic dysentery. Other Ayurvedic medicines prepared from Shankha are *Shankhadravak*, *AgnikumarRas*, *Bhaskarr asetc*

In Siddha medicines, it is used in all kinds of Eye diseases including colour and night Blindness, Itching of eyelids and Chronic conjunctivitis with mucous discharge, especially in children⁸.

- **Cowries (Kapardika):-**

Cowries are small convolute glossy external shells of sea animal called as *Cypraea moneta* linn. Usually after collection from coastal area they are dipped in boiled water and the fleshy portion is taken out and used as a diet. Cowries contain carbonate of calcium, magnesium phosphate, manganese, sodium chloride. Calcium percentage in Kapardika is 91.35. Varieties of cowries are white, red and yellow used in medicine. The ash form of *Cypraea moneta* known as *Kapardikabhasma*.

Synonyms for Kadi has been mentioned are Hindi- *Kadi*; Karnataka- *Kabadi*; Bengali- *Kori*; Gujarati- *Kadi*¹⁶.

The *Kapardika* is used in Parinamsula (duodenal ulcer), Grahani (colitis),



Kshayaroga (tuberculosis), Netraroga (eye disease), Vata-kaphavikar (disease related to vata and kapha). It is used in the treatment of Jaundice, Enlarged Spleen and Liver, Asthma ,Cough. It is externally used as caustic in various forms of ointments¹⁵.

- **Pearl (Mukta):-**

Pearl – ‘the queen of the sea’ is a hard, rounded object produced by certain molluscs, e.g. Pinctada such as an oysters. The pearl is a valued gemstone and is cultivated or harvested for jewellery⁶.

The principal difference between "natural pearls" and "cultured pearls" is the thickness of the nacre⁵. Calcium percentage in Mukta is calcium 70-80%.

Synonyms are Sanskrit- Mouktikam; Hindi- Moti; English- Pearl

Pearls have been used in medicine by the Ayurveda and Unani physicians from ancient times. In general, pearls are considered to possess antacid and tonic properties and are mostly used in the form of pearl ash (*Muktabhasma*), obtained as a result of powdering or calcining the pearls. MauktikBhasma is efficiently used in treating Jaundice, Tuberculosis, UTI, Pthisis, Heart diseases, Dysphagia, Cough, Asthma, Nervous diseases like chronic Headache, Epilepsy, Convulsant attacks, Piles, Leucorrhoea and Spermatochezia. Some of Ayurvedic drug VasantaKusumakar Rasis a good tonic,

stimulant and antacid.

In Siddha medicine, calx/bhasma are used in treating of Urinary diseases and Diabetic neuropathy. In the Unani system of medicine, pearl, known as *Mervareed*, is used in treating Anaemia, Neurosis, Palpitations, Tuberculosis, Heart weakness, Myocardial degenerations, and Habitual abortions⁹.

- **Cuttle Fish (Samudraphena):-**

Samudraphena is often found floating on sea-water. It is 1 to 3 inches in width and 5 to 10 inches in length. The skeleton is an oblong, elliptical or oval, flat substance, of whitish colour, very hard and brittle. It can be easily scratched with the nails and is highly pulverisable.

Cuttle fish (Samudraphena) are common on the Indian coasts. It comes under family Cephalopoda and class Mollusca¹³. The description of Samudraphena is available from Samhita period¹³.

Synonyms are Sanskrit- *Samudraphena*; Hindi- *Samudraphen*; English- Cuttle fish.

Formulation in Ayurveda are SukhavatiVarti, DristipradanaVarti, DantaVarti, LekhanaAnjan, MahanilaGutika²⁰. all These preparations are useful in different diseases of Eye and Dentals.

Calcium percentage in Samudraphena is 80-85.



• **Sea Salt(SamudraLavan):-**

Sea salt, salt obtained by the evaporation of seawater, It is also called bay salt or solar salt¹¹.

Synonyms are Sanskrit- Lavana, SamudraLavana, Hindi- Namak, Nun, English- Sea salt,

Sea salt is used as in Antiseptic, Anthelmintic, Galagandanasak (hypothyroidism), Pandu; also used in cooking and cosmetics purposes¹⁰.

• **Cephalopods**

The internal shell of *Sepia officinalis* is often found floating in sea water. The shell (cuttle fish bone) is an oblong, elliptical or oval, flat substance of whitish colour, porous and brittle. It is an antacid like chalk, used as astringent and a local sedative. When powdered, it is used as a dusting powder to relieve the ear pain or in otorrhoea and medicated oil prepared by boiling fine scraping of the bone used as drops for same purpose. Its paste made with lime-juice is used in treating itches and other skin diseases¹². It is also used with rose water to control prickly heat. The powder is an ingredient of various tooth-powders. A thin paste made of cuttle-fish bone and rock salt in rosewater is used to control conjunctivitis. The powder is also given internally to control Sprue and Dysentry.

• **Fishes**

In Ayurveda, different properties have been

described not only to different fishes, but also to same fish living and growing in different waters. Fish from different sources are also recommended to be taken in different seasons. In Ayurveda mentions that a seafish is heavy, unctuous and sweet. The fish and its eggs are sweet and have aphrodisiac properties. It increases stool and semen and is an excellent promoter of strength because the sea fish are mostly carnivorous. Fish liver oil derived from liver of shark, skate and sand fishes are beneficial in debilitating diseases and in malnutrition. *Clarias batrachus* Linn. is used in the treatment of diarrhoea. The flesh of *Saccobranchus fossilis* is a demulcent, a cardiac stimulant, aphrodisiac, galactagogue and also used in treating Jaundice²¹. Oil of *Scomberomorus commersoni* Lacep. (Seer Fish) is used as a substitute for codliver oil. The flesh of *Trichogaster fasciatus* has astringent and constipating properties.

• **Turtles**

Oil extracted from the turtle, *Chelonia mydas* is nutritious and used as demulcent. The turtle fat is given to control Scrofula, Rickets, Anaemia and Pulmonary infections. Turtles shell is used in Siddha medicines to treat Opacity of cornea, Cataract, Ophthalmic keratitis, Iritis, granular lids, Night blindness and Colour blindness²².



- **Sea mammals**

Sea Cow, *Halicore dugong* (*Dugong dugon*) Erxleben.

The oil extracted from sea cow, *Halicore dugong* Erxleben known as Dugong oil or oil of Sen Hog is used other than cod liver oil¹³.

- **Sponges (*Spongia officinalis*)**

Sponges occur as a light lump of porous nature and they are yellowish- brown, soft, elastic and irregularly shaped, collected from submerged rocks to which they adhere. Dry sponge consists of albumin and iodine. Its ash is obtained by burning the sponge in a closed vessel and used as an astringent. It is mixed with oil and applied to swollen glands (Goitre). It is also given in treating Dysentery and other bowel complaints¹².

- **Edible oyster**

It is a shell fish found in the Atlantic and Indian Ocean coasts. The shell has a hinge at one end and opens into two valves; one shallow and the other deep, which is found adhering to the rock. The shell is hard, externally grey or dark- brown, rough and marked with lateral undulated streaks; it is white, smooth and shining internally. It contains calcium carbonate (85-95%), phosphate and sulphate of calcium and magnesium, iron oxide, alumina and silica. The inner layer is chiefly used in preparing

the ash, called *Kalubhasma*²⁵. The ash is antacid and alterative and is used in treating cases of Diarrhoea and Chronic intestinal disorders. This animal is supposed to possess aphrodisiac properties and is therefore, eaten raw or cooked.

Oyster shells are used in Siddha preparations for treating Ear troubles. The Ayurvedic text Sushruta Samhita mentions the use of shells of marine oysters and pearls in eye-salves in ophthalmic and other ocular infections⁹.

- **Crustaceans(Crabs)**

Oil extracted from crab's flesh is used in preparations used in treating Ear troubles in Siddha medicines¹⁸. The crab, *Scylla serrata* has antibilious, Diuretic, Laxative and Haematinic properties and is a Cardiac stimulant.

CONCLUSION

The marine ecosystem offers a clinical evaluation of various organisms providing natural products is to be done. Scientific approach is needed in order to transfer innovative discoveries and traditional medicine into active clinical therapeutics.



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