ABSTRACT

*Mukta Shukti* is the choice of drug for many indications in Ayurvedic practice. *Mukta Shukti* (pearl-oyster) is the source of pearl which is the best among type of *Shukti* comes under *Sudha varga*. It is used in *Hridyaroganashara* (Heart disease), *Shoolhara* (Pain), *Kasahara* (Cough), *Snayurogahara* (Ligament disease), *Jwarahara* (Fever), *Raktarogahara* (Disease of blood), *Agnimandhya* (Digestive impairment), *Aruchi* (Tastelessness). *Mukta Shukti Bhasma* is used as an antacid, anti-pyretic, and as a source of calcium. It is also used in tuberculosis, cough, asthma, dysmenorrheal, arthritis, rheumatism, conjunctivitis. It contains Calcium carbonate 85-95%, Phosphate and Sulphate of Calcium and Magnesium. It have brilliant luster which is unrivalled by any other shell and raises their commercial value. Its property is similar to Pearl. Literatures of ancient and current science are reviewed to highlight the importance of it.

Keywords: Ayurveda, Mukta Shukti, Pearl oyster Shell.

INTRODUCTION

Ayurveda is an ancient traditional system of medicine of India evolved and practiced over thousands of years.\(^1\) Ancient Acharyas of *Rasa Shastra* had included *Shukti* in different vargas like *Shukla Varga\(^2\)*, *Shodhaniya Gana\(^3\)*, *Shweta Varga\(^4\)*, *Uparasa\(^5\)*, *Uparatna\(^6\)*, *Shankhadi Viganyam\(^7\)* etc. But later on in the 20\(^{th}\) century A.D., it was included under *Sudha Varga* due to the predominance of calcium or *Sudha*, in Ayurveda Prakasha\(^8\). *Mukta Shukti* is procured from sea water\(^9\). *Mukta Shukti Bhasma* is a Calcium containing bhasma. This biomedicine is synthesized through special calcinations of the mother of pearl. It is used...
in Hridyaroganashara (Heart disease), Shoolhara (Pain), Kasahara (Cough), Snayurogahara (Ligament disease), Jwarahara (Fever), Raktarogahara (Disease of blood), Agnimandhya (Digestive impairment), Aruchi (Tastelessness)\textsuperscript{11}. Mukta Shukti Bhasma is used as an antacid, anti-pyretic, and as a source of calcium. It is also used in tuberculosis, cough, asthma, dysmenorrheal, arthritis, rheumatism, conjunctivitis\textsuperscript{12-15}. In the present scenario the use of Mukta Shukti preparations are single drug or as ingredient in many Ayurvedic medicines has evoked concerns and debate in the scientific formula in the recent times. The present study was undertaken to review the Ayurvedic as well as Modern concept of Mukta Shukti.

**Synonyms**

Muktashukti, Shukti, Shuktika, Muktamata, Muktagruha, Mahashukti, Mouktikaprasava, Mouktika mandira, Muktaprasu, Mahashukti, Shuktija , Muktasphota, Abdhimandooki, Muktaprasu, Mouktika, Tautika\textsuperscript{5,7,8,10,16,17,18}.(Table -1)

**Historical Review**

Acharya Charaka has described Shukti under Varishaya Varga\textsuperscript{19} & it also mentioned external application of Shukti in the Visarpa Treatment\textsuperscript{20}. Acharya Sushruta\textsuperscript{21} and Kasyapa Samhita\textsuperscript{22} have described both external & internal use of Shukti. In Ashtanga Hridaya\textsuperscript{23} only external use of Shukti is found. In Rasa Hridya Tantra\textsuperscript{24} Shukti used as drug in Jarana samskara of Parada. In Rasarnava\textsuperscript{2} it included in Shukla verga. The use of Shukti is confined to different samskara of Parada. In Rasa Ratnakar\textsuperscript{4} it used in the preparation of vida for Hema jaranaa. Therefore , in Rasa Kala almost all author have described about the different aspect of Shukti types, synonyms, Shodhana, Marana, guna-karma & therapeutic utility in various disease.

**Vernacular Name of Mukta Shukti**\textsuperscript{6,10,18}

Arabi – Shadak
Bangali – Jhinuka
English – Pearl oyster shell
Farasi – Ghosmahi
Gujrati – Motini chip
Hindi – Shipa, sipa, Moti ki sipa
Kannada – Muktini shipu
Malwadi – Khipadhi
Marathi – Motayanchi shipa, Moti shipa
Panjabi – Shipa
Sanskrita – Shukti, Muktashukti, Muktagriha

Classification
Shukti is included in different group in different literature like –

Varishaya prani in Charaka Samhita¹⁹,
Anoopa varga in Shusruta Samhita²¹,
Matasya Varga in Ashtang Samhita²⁵ & Ashtang Hridya²³,
Sweta varga in Rasa Ratnakar²⁴,
Shukla varga in Rasarnava² & Dhanvantari Nighantu²⁶,
Suvarnadi Varga in Raja Nighantu¹⁰ & Madanpala Nighantu¹⁷,
Dhadhwadi varga in Bhavprakash Nighantu⁶ & Kaiydeva Nighantu¹⁶,
Uparasa varga in Ayurveda Prakash⁸, Ananda Kanda⁵ & Rasendra Bhaskara²⁷,
Shodhaniya varga in Rasa Ratana Samucchaya³.

Description
Pearl oysters are the source of pearls. Oyster shell has small, hollow ovate excavation in which the animal with a soft, fleshy suborbicular body is enclosed. The fleshy layer of the skin, the mantle, lines the inside of shell and surrounded the body organs. It produces liquid substances that harden and form the shell. It also makes the colour and designs that appear in the shell. The shell has a sort of hinge at one end and opens into two valves, one shallow and the other deep which is found adhering to the rock.²⁸,²⁹,³⁰

Habitate
Oysters in the United States come from under sea farms that are located along the Atlantic, Pacific and Gulf coasts. The range of distribution of pearl oysters extends from the Indian ocean to the central pacific.²⁸,²⁹

Morphology
Oysters are often called bivalves, which mean two valves. The lower valve is deeper, larger and thicker than upper valve and the oyster’s body rest on it. The second valve acts as a lid. The surface of shell is coarse and irregular and ruffled.²⁸

Physical Property
In Rasa literature grahya Muktashukti is white like silver and heavy weight.³¹ The shell is hard, externally gray or dark brown and rough, marked with lateral undulated streaks and
internally white, smooth and shining. It is white and inside much bright, no perforated.\textsuperscript{30,32}

**Modern view**

Oyster is belongs to mollusca phylum and Pelecypoda class. Latin name of the Pearl oyster is Pinctada vulgaris.\textsuperscript{33} An oyster’s mature shape often depends on the type of bottom to which it is originally attached. Oyster usually reaches maturity in 1 year. An Oyster shell consist of two parts called valves so also called Bivalvia. When the body of mussel is removed from the two valves are seen to be united along a straight hinge line by a tough elastic substance, the hinge ligament.

The valves are marked externally by a series of concentric lines parallel with the free edges and starting from a swollen knob or elevation the umbo, situated towards the anterior edge of the hinge line. These lines are line of growth. The shell is thickest at the umbo which represents the part first formed in the young animal, and new layers are deposited under this original portion, as secretion from the mantle.\textsuperscript{32}

**Purification (Shodhana)**

“Shodhana” is processes which remove the impurities of drug and increase therapeutic qualities of drugs. Purification of Muktashukti mention in different Rasa literatures is given in table-2

**Incineration (Marana)**

“Marana” means process of killing. The drug subjected to various experiments so as to convert them in such a form, not be converted back to original form and which will be easily absorbed and assimilated into body. Bhasma (Ash) is often used to final product after process of marana. The inner surface is chiefly used in preparing the Ash. Incineration of Muktashukti mentioned in different Rasa literature is given in table-3

**Mukta Shukti Bhasma**

Muktashukti Bhasma is a compound consisting of pearl oyster shell (Moti ka sipa), Aloe Vera Linn (Guar-patha) and vinegar(Kanjij). The compound is prepared from the outer covering of the shell, ground and triturated with Aloe Vera and vinegar in sufficient quantity to make a homogenous paste. Recommended proportions of pearl oyster and Aloe Vera are in the ratio of 1:4. Medicinal properties have been attributed to this preparation in ancient Ayurveda and Unani systems of medicine. Muktashukti bhasma been used in treatment of
tuberculosis, cough, chronic fever, conjunctivitis, abdominal discomfort, biliary disturbance, asthma, heart disease, vomiting and acidity, dyspepsia, dysmenorrheal, general weakness and arthritis, rheumatism and musculoskeleton disorders.35-39

Table No. 1 Synonyms of Muktashukti

<table>
<thead>
<tr>
<th>No.</th>
<th>Sanskrita Name</th>
<th>Rasa</th>
<th>Ayurveda Prakash</th>
<th>Ananda Kanda</th>
<th>Raaj Nighantu</th>
<th>Kaiydeva Nighantu</th>
<th>Madanpala Nighantu</th>
<th>Shalikagram Nighantu</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Muktashukti</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>2.</td>
<td>Shukti</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>3.</td>
<td>Shuktika</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>Muktamata</td>
<td>+</td>
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<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>Mukta gruha</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>+</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>Mahashukti</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>7.</td>
<td>Mouktika prasava</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>8.</td>
<td>Mouktika mandira</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>9.</td>
<td>Shuktija</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>10.</td>
<td>Muktaspora</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>11.</td>
<td>Abdimanduki</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>12.</td>
<td>Muktaprasu</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>13.</td>
<td>Mouktika</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>14.</td>
<td>Toutika</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table No. 2 Shodhana of Muktashukti

<table>
<thead>
<tr>
<th>No.</th>
<th>Media</th>
<th>Procedure</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Amala Dravy</td>
<td>Swedana in Dola Yantra for 3 hours</td>
<td>7,8,</td>
</tr>
<tr>
<td>2.</td>
<td>Kanji</td>
<td>Swedana in Dola Yantra for 3 hours</td>
<td>8,11,14</td>
</tr>
<tr>
<td>3.</td>
<td>Jayanti swarasas</td>
<td>Swedana in Dola Yantra for 3 hours</td>
<td>7</td>
</tr>
<tr>
<td>4.</td>
<td>Nimbu swarasas</td>
<td>Swedana in Dola Yantra for 3 hours</td>
<td>4,32,47,53,54</td>
</tr>
<tr>
<td>5.</td>
<td>Takra or Amal dravy</td>
<td>Placed for 48 hours</td>
<td>7</td>
</tr>
<tr>
<td>6.</td>
<td>Gomutra, Nimbu swarasas, Saindhava</td>
<td>Pachana in kharagni for 3 hours</td>
<td>48</td>
</tr>
<tr>
<td>7.</td>
<td>Mattha</td>
<td>Placed for 3 days</td>
<td>36</td>
</tr>
<tr>
<td>No.</td>
<td>Media</td>
<td>Procedure</td>
<td>References</td>
</tr>
<tr>
<td>-----</td>
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<td>---------------------------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>1.</td>
<td>Putapaka</td>
<td>Gajaputa with cow dung cackes</td>
<td>7,8,11,35,50,54,55</td>
</tr>
<tr>
<td>2.</td>
<td>Putapaka</td>
<td>Gajaputa with cow dung cakes after Nimbu swarasa bhavna</td>
<td>7,46,47,55</td>
</tr>
<tr>
<td>3.</td>
<td>Putapaka</td>
<td>4 puta with 50 cow dung cackes after kumara swarasa bhavna</td>
<td>28,35,42,56,57,58</td>
</tr>
<tr>
<td>4.</td>
<td>Putapaka</td>
<td>Gajaputa with sandwiching between kumara pulp</td>
<td>31,48,55</td>
</tr>
</tbody>
</table>

**Table No. 3 Marana of Muktashukti**

**Pharmacological & Therapeutic Properties**

Rasa – Madhura$^{40}$, Katu$^{10}$

Guna – Laghu, Ruksha$^{40}$, Snigadha$^{10}$

Virya – Sheeta$^{40}$

Vipaka – Madhura$^{40}$

Karma – Deepan, Pachana, Ruchaya, Balya$^{10}$

Doshkarma – Pittahara$^{10}$ Tridoshhara$^{40}$


**Dose**

2 ratti$^{7}$, 2-4 ratti$^{11}$

**Anupana**

Madhu, Ghrita, Cowmilk$^{35}$, Honey, Lemon juice$^{11}$.

**Chemical composition**

Oyster’s shell is composed mainly of Calcium carbonate (CaCO$_3$) 85-95%, phosphate and sulphate of Calcium and Magnesium, Oxide of iron, Aluminum and Silica$^{28,29,30,41,42}$. 
Uses & Indication
Mukta Shukti Bhasma mainly used in Soft nature person like children in Calcium deficiency disorder Rickets & in pregnant lady for osteomalacia. The best Muktashukti Bhasma is decrease the Pain in abdomen & pain in chest due to cardiac disorder. It also increase appetite so used in Abdomen & Spleen disorder. It use in treatment of Asthma. In TB disease it is beneficial because it stimulates calcification and stops the cell damage. It used in Renal stone and removes urates in form of small pieces through urine & work as pain reliever. It used with supplement drug in Heart disease, Splenomegaly, Sweta pradara. It decrease the Pain in abdomen & pain in chest due to cardiac disorder. It also increase appetite so used in Abdomen & Spleen disorder. It use in treatment of Asthma. In TB disease it is beneficial because it stimulates calcification and stops the cell damage. It used in Renal stone and removes urates in form of small pieces through urine & work as pain reliever. It used with supplement drug in Heart disease, Splenomegaly, Sweta pradara. It used in treatment of Asthma. In TB disease it is beneficial because it stimulates calcification and stops the cell damage. It used in Renal stone and removes urates in form of small pieces through urine & work as pain reliever. It used with supplement drug in Heart disease, Splenomegaly, Sweta pradara. It is beneficial because it stimulates calcification and stops the cell damage. It used in Renal stone and removes urates in form of small pieces through urine & work as pain reliever. It used with supplement drug in Heart disease, Splenomegaly, Sweta pradara. It is beneficial because it stimulates calcification and stops the cell damage. It used in Renal stone and removes urates in form of small pieces through urine & work as pain reliever. It used with supplement drug in Heart disease, Splenomegaly, Sweta pradara.

Contraindicated
Mukta Shukti Bhasma not used in Vatavyadhi, Costipation and amenorrhoea condition.

Ayurvedic Formulation
Grahani Shardoola Rasa, Prawal Panchamrita Rasa, Badvanal Rasa, Visamajawarantaka Lauha, Mukta Panchamrita Rasa, Bahumutraghana Rasa, Navratanrajmrighank Rasa.

CONCLUSION
The Pearl oyster’s shell is animal source of calcium which included in Shukla varga & Shudha varga in Rasa literature. Its pharmacological & therapeutic properties make it able to work in many disorders. It is the review study of the Mukta shukti which is substitute drug of Pearl, according to different Rasa literature.

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