



"SHILAJATU - A BOON FROM AYURVEDA A CRITICAL REVIEW"

Dr. Ravindra. G. Varma

Ph.D Scholar, Department of Shalya Tantra, Ayurveda Mahavidyalaya Hubli Karnataka.

Dr. S. K. Bannigol*

Principal, Sanjeevini Ayurvedic Medical College, Hubli, Karnataka, India.
*Corresponding Author

ABSTRACT

This article aims to provide a critical review on Shilajatu. Shilajatu is a pale-brown to blackish-brown exudation, of variable consistency, exuding from layers of rocks in many mountain ranges of the world, especially the Himalayas and Hindukush ranges of the Indian subcontinent. It has been found to consist of a complex mixture of organic humic substances and plant and microbial metabolites occurring in the rock rhizospheres of its natural habitat. Shilajatu has been used as a rejuvenator and an adaptogen for thousands of years. Many therapeutic properties have been ascribed to it, a number of which have been verified by modern scientific evaluation. Shilajatu has been attributed with many miraculous healings. It is widely used in traditional medicinal system of India has been reported to possess antioxidant, anti-inflammatory, memory enhancer and anti-ageing property. It is known as a rich source of humic substances, including fulvic acid. The innumerable medicinal properties and therapeutic uses of Shilajatu prove its importance as a valuable medicinal substance.

KEYWORDS : Shilajatu, fulvic acid, humic substances, traditional uses.

Introduction:

Shilajatu is considered as miraculous and magical drug of *Ayurveda*. *Shilajatu* is not a plant origin neither an animal origin. *Charaka* and *Sushruta* were the pioneer of *Shilajatu*. *Shilajatu* is blackish-brown exudation of various consistency, obtained from steep rocks of different formations found in the Himalayan mountains¹. It is used in *Ayurveda*, the traditional Indian system of medicine. The composition of *Shilajatu* has been investigated numerous times in both India and the former USSR, and depends on the location where it is found. It has been reported to contain at least 85 minerals in ionic form, as well as triterpenes, humic acid and fulvic acid. A similar substance from the Caucasus Mountains and the Altai Mountains is called *mumijo* (Russian)². For the purpose of Ayurvedic medicine the black variant is the most potent. *Shilajatu* has been described as 'mineral oil', 'stone oil' or 'rock sweat', as it seeps from cracks in mountains due mostly to the warmth of the sun³.

Origin of Shilajatu:

According to *Ashtanga Sangraha*, *Shilajatu* was formed during churning of ocean as a sweat of *Mandara Parvata* which was deposited in the mountains by lord *Brahma*⁴.

According to *Charaka Samhita*, *Sushruta Samhita*, *Rasa Ratna Samuccaya* and other important Ayurvedic texts, during summer due to intense heat, *Shilajatu* exudates from Himalayan mountains.

Derivative:

The word *Shilajit* is composed of two words "*Shila*" means rock and "*jit*" means winner. Hence the literary meaning of *Shilajit* is "conqueror of rock/ mountains". Some scholars also state that '*Shilajatu*' composed of two terms, one '*Sila*' and other '*Jatu*'. The word *Sila* denotes rock, which is considered as one of the most important sources. Term *Jatu* denotes a blackish brown substance, which is similar to '*Lak a*'. Thus '*Shilajatu*' is the exudates of rocks having blackish brown colour and oozes out from steep rocks of mountain during summers because of intense sun heat. Sanskrit meaning is "Conqueror of mountains and destroyer of weakness.

Synonyms:

There are several synonyms for *Shilajatu* which conveys an attribute and explains *Shilajatu*. In Latin, it is described as *Asphaltum punjabinum*. In English, it is called asphalt,

mineral pitch or Jew's pitch. In Various parts of our country *Shilajatu* is spelled as *Silajit*, *Shilajit*, *Shilajatu*. There are several other terms for *Shilajatu* such as *Dhaturas*, *Dhatusara*, *Shiladhātu* etc. which have been used in Ayurvedic texts.

Shilajatu synonyms are *Agajam*, *Adrijam*, *Parvatam*, *Silajam*, *Asmajatu*, *Silaniryasa*, *Silavyadhi*, *Silamal*, *Usnajam* etc.

In Greek, it is called as *mumijo* which means 'saving body' or 'protecting organism' while in Arabic *arakul-dzhibol* means 'sweat of mountain', whereas Tibetan or Mongolian *brag-shun* or *brag-zhun* means 'juice of rock' and Burmese *kao-tui* or *chaotui* implies 'blood of the mountains'⁵. It is called, *momio* in Persian, *myemu* in Russian and *mumie* or *salhumin* in German. It is also found in Afghanistan, Bhutan, China, Nepal, Pakistan, Tibet as well as Norway⁶.

Varieties of Shilajatu:

Shilajatu has been classified into 6 types since *Samhita* period which are as follows-

Sl no	Types	Ore in Vicinity
1	<i>Swarna</i>	Gold
2	<i>Rajata</i>	Silver
3	<i>Tamara</i>	Copper
4	<i>Lauha</i>	Iron
5	<i>Vanga</i>	Tin
6	<i>Sisa</i>	Lead

Rasaendra Cudamani Classified as on the basis of colour and smell *Shilajatu* is of two types⁷:

1. Gomutra Gandhi:

It is blackish brown and the odour similar to cow's urine.

2. Karpura Gandhi:

It is white and possess odour similar to camphor.

General Properties of Shilajatu:

Text	Rasa	Anurasa	Guna	Virya	Vipaka
<i>Charaka Samhita</i> ⁸	<i>Anamla Kashaya</i>	-----	-----	<i>Natyus na Sita</i>	<i>Katu</i>
<i>Sushrut Samhita</i> ⁹	<i>Tikta, Katu</i>	<i>Kashaya</i>	<i>Sara</i>	<i>Ushna</i>	<i>Katu</i>

Ashtanga Sangraha ¹⁰	Tikta, Katu	-----	-----	Natyusna	Katu
Anandakanda ¹¹	Tikta, Katu Madhura	-----	-----	Natyusna	Katu
Chakradatta ¹² Rasendra Chintamani ¹³	Anamla Akasaya	-----	-----	Natyusna Sita	Katu

View of Commentators on Rasa:

1. Charakopaskara interprets the rasa as slightly *Amla* (sour) and *Kashaya* (astringent).
2. Sivadasa Sen and Maniram Sharma interpret that *Shilajatu* is devoid of *amla* and *kasaya rasa* (indicating the presence of other four rasas).
3. According to Chakrapani *Natyusnasheeta virya* indicates that specific *viryas* of *Swarna* and other *Shilajatu* do not tend to become powerful.

Purification:

Shilajatu being a natural exudation from rocks containing a large amount of contaminants like rock pieces, heavy metal ions, vegetable compounds, reactive free radicals, toxins and soil particles etc, which cause illness. Hence it is necessary to purify the *Shilajatu* before using it for therapeutic purpose. *Shilajatu* is purified as per classical methods, in decoction, with *Triphala* and expressed juice of *Bhringraja* in an iron container successively for one day each. It may also be purified with by mixing *Shilajatu* in water/cow milk^{14,15}.

Chemical Constituents:

Shilajatu from different regions contained a large variation of organic compounds that can be broadly grouped into humic acid (80-85%) of total organic mass and non-humic (15-20%) substances. Generally *Shilajit* contains 14-20% humidity, 18-20% minerals, 13-17% proteins, 4-4.5% lipids, 3.3-6.5% steroids, 18-20% nitrogen free compounds, 1.5-2.0% carbohydrates and 0.5-0.8% alkaloids, amino acids and other compounds^{16,17}.

The chemical composition of *Shilajatu* is a Phyto complex. The components, humins, humic acids and fulvic acids, are found in all *Shilajit* along with dilbenzo- pyrones which act as carrier of other substances. The humic substances are the results of degradation of organic matter mainly vegetable substances which is the results of the action of many microorganisms. A large amount of benzoic acid, benzoates, hippuric acid and their salts as active substances are reported from *Shilajit*. Chemical investigation of *Shilajit* carried by Ali and co-workers furnished six compounds namely, *shilajityl acetate*, *shilajitol*, *silacatechol*, *silaxanthone*, *shilacanthranil* and *naphsilajitone*. The other molecules present in *Shilajatu* are lipids, steroids, carbohydrates, alkaloids, amino acids, free fatty acids, colouring matters such as carotenoids and indigoids, coumarins, organic acids including adipic, succinic, citric, oxalic and tartaric acids, waxes, resins, polyphenols, essential oils, and vitamins like B and B12, eldagic acid, latex gums, albumins, triterpenes, sterols, aromatic carbocyclic acids, phenolic acids, tannoids and lignins^{18,19}. Determination of heavy metals/minerals was carried out which gave the presence of Fe, Al, Zn, Cr, Mn, Mg, Co, Pb, K and Ca. The percentage of these metals are very minimal amount which are permissible level as prescribed by World Health Organisation (WHO) and not associated with health effects.

Uses of *Shilajatu* in traditional medicine:

Shilajatu has an important and unique place in traditional texts such as *Ayurveda Siddha* and *Unani medicine*. *Shilajatu* is prescribed to treat genitourinary disorder, jaundice, gallstone, digestive disorders, enlarged spleen, epilepsy, nervous disorder, chronic bronchitis, anaemia. *Shilajatu* is

given along with milk to treat diabetes. *Shilajatu* has also been ascribed a potent aphrodisiac property. According to *Ayurveda*, *Shilajatu* arrests the process of aging and produces rejuvenation which are two important aspects of an *Ayurvedic rasayana* (Ghosal, 1990). *Shilajatu* is useful for treating kidney stones, oedema, piles, internal antiseptic, adiposity, to reduce fat and anorexia. *Shilajatu* is prescribed along with *guggul* to treat fractures. It is believed that it goes to the joints and forms a callus quickly. The same combination is also used to treat osteoarthritis and spondylitis. *Shilajatu* is also used as *yogavaha* (Ghosal et al., 1991b; Ghosal et al., 1995c). *Shilajatu* is soaked in the decoction of one or more of the following plants as this is said to increase their efficacy: *Shoria robusta* (sala), *Bachanania lactifolia* (piala), *Acacia farnesiana* (acacia), *Terminalia tomentosa* (asana), *Catechu nigrum* (catechu), *Terminalia chebula* (myrobelan) and *Sida cordifolia* (bala).

PATENTS ON SHILAJIT:

Extensive research has been carried out on *shilajatu* to justify its claims. A research study on *shilajatu* bioactive constituents proved that they have healing, antiaging and restorative properties. The following is a list of patents so far filed on *shilajit*:

- US Patent No. 5,405,613 – vitamin/mineral composition (Rowland, 1995);
- US Patent application No. 20030198695 – Herbo-mineral composition (Ghosal, 2002a);
- US Patent No. 6,440,436 . – Process for preparing purified *shilajit* composition from native *Shilajit* (Ghosal, 2002b);
- US Patent No. 6,558,712 – Delivery system for pharmaceutical, nutritional and cosmetic ingredients (Ghosal, 2003)

Commentary and Discussion:

Shilajatu has a comfortable position as the *rasayana* because of its excellence, well known in the Eastern culture, and now being introduced with great interest in the occidental world. The vast majority of published papers on this theme are from India, leaving this sector of the planet as an expert in their field, since this is a product that is extracted, marketed, and investigated in these latitudes. However, this generates a segmentation of *shilajatu*, relegating it only to what has always been assumed: a natural product that is part of natural alternative medicine and not as a result of medical and biotechnology innovation worldwide. This is evidenced quite clearly by reviewing the literature today, and note that the journals where studies on *shilajatu* are published (jobs are plentiful) are mainly reviewed in the Eastern. Given this, it is necessary that *shilajit* break the cultural paradigm and enter into the rest of the world by the hand of rigorous research at the molecular and cellular levels, which could elucidate the interactions of the active ingredients of the different *shilajit* preparations with biomolecules. This will facilitate our understanding of their mechanisms of action.

Shilajatu is an *ayurvedic* drug with a long history of human use and has been used in nervous, diabetic, urinary, immune, cardiac, and digestive disorders, and is also used as a performance enhancer. Traditionally, it has been recommended for the cure of almost all kinds of human diseases. Ancient works such as the *Hindu Materia Medica*, *Charaka Samhita*, and *Sushruta Samhita* also describe the medicinal properties of *Shilajatu*. Hence, it is a highly recommended drug in the *ayurvedic* and other traditional medicine systems of India. It would certainly be helpful to fight against common high-altitude problems like hypoxia, AMS, HAPO, HACE, dehydration, UV radiation etc when taken as a supplement by people ascending to high altitudes²⁰.

In light of *Shilajatu*'s tremendous medicinal potential, it would not be an exaggeration to say that it can be a panacea for all

human ailments and Nature's wonderful gift to mankind.

Conclusion:

Shilajatu is a naturally occurring multi-component with humous rich blackish brown substance, which is widely used in Indigenous system of medicine for the cure of variety of diseases and to accelerate the process of rejuvenation. It is mentioned and claimed as a panacea in classical texts. In other words, it means a remedy for all diseases or universal medicine. It serves as potent tonic. *Shilajatu* is a potent and very safe dietary supplement, potentially able to prevent several diseases in pure form, but its main medical application now appears to come from its actions in benefit of cognition and potentially as a dietary supplement. In essence, this is a nutraceutical product. Considering the expected impact of *shilajatu* applications in the medical field, more investigations at the basic biological level are necessary, and certainly well-developed clinical trials, in order to understand how its active principles act at molecular and cellular levels.

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