INTRODUCTION
Rasashastra is a branch of Ayurveda which deals with pharmaceutical preparations that contain metals and minerals for treating diseases as well as promoting health. Rasashastra gives a detailed account of purification, incineration, therapeutic application, dosage and antidotes of different mineral and metals. Parada (Mercury) is important among them. Other minerals and metals are categorized in to different groups namely Maharasa, Uparasa, Sadharana Rasa, Ratna, Uparatna, Dhatuvarga and Sudhavarga. The classification of this kind has a specific applicability based on the utility of these minerals with the mercury. Recent books of Rasashastra have included one more group of minerals under the heading of Sikata varga. Kousheyashma is a mineral raw drug included in Sikatavarga.

MATERIALS AND METHODS
In the present study an attempt was made to collect details of this mineral drug. A thorough electronic and print search was done related to formulations of Kousheyashma in Ayurvedic texts including few monographs, compilations and text books. Books of Ayurveda as well as Siddha system of medicine in Sanskrit, Hindi, English, Malayalam, Tamil and Kannada language were searched.

Observations
It is observed during this study that Kousheyashma does not find a place in any of the authoritative literatures of Ayurveda like Brihat trayis and Laghu trayis. In medieval literatures like Nighantu’s also there is no reference about this drug. It is not recorded in the important books or commentaries of Rasashastra. From these observations it can be inferred that it was not known much during the earlier stages of Ayurveda.

In Ayurvedic books of Malayalam, the references of this mineral are seen. It is termed as Kalnar, Kannaram and Hiravi in these books. In the mineral index of old edition of Ayurvedic Formulary of India, it is named as Kousheyashma. It is called as Sangaresha in Hindi and as Ratinara in Telugu and Asbestos in English. Information regarding Shodhana (Purification) and Marana (Incineration) of Kousheyashma is available in literatures of Siddha system of medicine. It is included under the list of sikata varga in the syllabus of Rasashastra and Bhaishajya Kalpana of Bachelor of Ayurveda Medicine and Surgery (BAMS) of Central Council of Indian Medicine. It is also included under group of Calcium compounds. Kousheyashma is a mineral drug, which looks like a stone made of compressed fibers. It will be usually yellowish white in colour. A number of minerals belonging to the Amphibole group exhibit the properties of Kousheyashma. Hence it may be considered as the equivalent of the industrial mineral name ‘Asbestos’. The mineralogical studies have shown that physical properties resembles with Asbestos. The analytical studies have suggested that it is essentially a variety of Asbestos with composition of Silicate of magnesium and Calcium. By all these observations it can be inferred that the first reference of this mineral medicine is found in Malayalam literatures of Ayurveda. The word Kalnar implies that it is a stone with fibrous nature. The equivalent English term given is Asbestos which is supported by the research studies. The asbestos, apart from its industrial uses is also used as a material for preparation of fire proof fabrics. It gives an impression that the word Kousheyashma is a coined term in Sanskrit. Eighteen formulations of Asbestos are found in Ayurvedic literature and seven formulations of Kousheyashma.

In Ayurveda, Asbestos is one such mineral drug listed under group of Sikata varga (Silicates). The details of this drug are not found in authoritative texts of Ayurveda. Recent books of Rasashastra have a brief description of this drug. Few formulations described in Ayurveda books of Malayalam contain this drug as one of ingredient. More details about pharmaceutical processing of this mineral drug is mentioned in literatures of Siddha system of Medicine. Kalnar, Kannaram, Hiravi, Sangaresha, Ratinara and Asbestos are the vernacular names of the drug Kousheyashma. A thorough electronic and print search was done related to formulations of Kousheyashma. It was found that there were 18 formulations of the study drug of varied dosage forms.

Number of Metals and Minerals are described in Rasashastra (iatrochemistry). Kousheyashma (Asbestos) is one such mineral drug listed under group of Sikata varga (Silicates). The details of this drug are not found in authoritative texts of Ayurveda. Recent books of Rasashastra have a brief description of this drug. Few formulations described in Ayurveda books of Malayalam contain this drug as one of ingredient. More details about pharmaceutical processing of this mineral drug is mentioned in literatures of Siddha system of Medicine. Kalnar, Kannaram, Hiravi, Sangaresha, Ratinara and Asbestos are the vernacular names of the drug Kousheyashma. A thorough electronic and print search was done related to formulations of Kousheyashma. It was found that there were 18 formulations of the study drug of varied dosage forms.

Keywords: Ayurveda, Rasashastra, Kousheyashma, Kalnar, Kannaram, Asbestos

*Correspondence
Dr. Sharma Govinda K
Associate Professor, Department of Rasa Shastra and Bhaishajya Kalpana, SDM College of Ayurveda and Hospital, Hassan, India

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Abstract


t is termed as Kalnar, Kannaram and Hiravi in these books. In the mineral index of old edition of Ayurvedic Formulary of India, it is named as Hiravi the equivalent name of which is given as Kannara and chemically as Silicate of Magnesia. The recent editions however give some other synonym for the drug Hiravi. It is called as Sangaresha in Hindi and as Ratinara in Telugu and Asbestos in English. Information regarding Shodhana (Purification) and Marana (Incineration) of Kousheyashma is available in literatures of Siddha system of medicine. It is included under the list of sikata varga in the syllabus of Rasashastra and Bhaishajya Kalpana of Bachelor of Ayurveda Medicine and Surgery (BAMS) of Central Council of Indian Medicine. It is also included under group of Calcium compounds. Kousheyashma is a mineral drug, which looks like a stone made of compressed fibers. It will be usually yellowish white in colour. A number of minerals belonging to the Amphibole group exhibit the properties of Kousheyashma. Hence it may be considered as the equivalent of the industrial mineral name ‘Asbestos’. The mineralogical studies have shown that physical properties resembles with Asbestos. The analytical studies have suggested that it is essentially a variety of Asbestos with composition of Silicate of magnesium and Calcium. By all these observations it can be inferred that the first reference of this mineral medicine is found in Malayalam literatures of Ayurveda. The word Kalnar implies that it is a stone with fibrous nature. The equivalent English term given is Asbestos which is supported by the research studies. The asbestos, apart from its industrial uses is also used as a material for preparation of fire proof fabrics. It gives an impression that the word Kousheyashma is a coined term in Sanskrit. Eighteen formulations of Asbestos are found in Ayurvedic literature and seven formulations of Kousheyashma.
Kousheyashma are found during this study which is detailed and analyzed here.

**Kachuradi Churna**
This formulation includes 30 other ingredients with Kousheyashma (3.22 %). This churna is indicated as an external application in Hidhma, Peenasa, Jwara, Shiroruja, Buddhibrama, Netaraga, Karnaroga, Kaphaja, and Sannipataja roga.

**Shirastoda Gulika**
This tablet contains 4 other ingredients with Kousheyashma (14.28 %) and other ingredients. This Ghrita is composed of Kosheyashma (0.08 %) and Kousheyashma (2.52 %) and is indicated in Vataja shirashala with Tilataila, in Pittaja shrishula with Ghrita and in Kaphaja shrishala with Narikela kshira.

**Marma Gulika**
The formulation consists of 43 other ingredients with Kousheyashma (5.2 %). This tablet is rubbed on grind stone and is used for external application with hot water in Marma vikara and Aghatha.

**Valiangadi Kashaya (Shresta Kashaya)**
This Kashaya contains 43 ingredients including Kousheyashma (2.52 %) and is indicated specially in Sannipataja Jwara.

**Tengipookkuladi Ghrita**
This Ghrita is composed of Kosheyashma (0.08 %) with 25 other ingredients. This ghrita is indicated in Rakthasrava and is usually used in Post natal period.

**Asrigdhara Chikitsa**
Kousheyashma (25 %) and other three ingredients are taken in equal quantity and powdered well. This churna is indicated in Asrigdhara.

**Atyagni Chikitsa**
Kousheyashma (25 %) and other 3 ingredients are taken in equal quantity and powdered well. This is a formulation found under Atyagni chikitsa.

**Balashoolari Churna**
This churna contains 11 ingredients in total including Kousheyashma (9.09 %). This powder is indicated in childhood disorders like Kshaya, Kasa, Shwasa, Kukshiroga; Udararoga, Gulma, Hridroga and Chardi.

**Vayu Gulika**
32 ingredients including Kousheyashma (3.8 %) are taken in equal quantity and are triturated with Gulab Jal or Bringarajana rasa (Eclipta alba) for three days, rolled in gulika and are dried in shade. This tablet is known for its action on Mudhavata and Shula and acts as Anulomana.

**Sannipata Chikitsa**
71 ingredients with Kousheyashma (0.42 %) are cooked with Nimba taila. This formulation is used as Abhyanga in Sannipata roga.

**Indralupta chikitsa**
Kousheyashma (11.11 %) with other 8 ingredients are powdered well. This churna is externally applied over scalp on Indralupta.

**Kasturyadi Gulika**
This tablet includes 38 other drugs with Kousheyashma (3.13 %). It is known for its action on Vayu kshobha, Shwasa, Kasa and Angamarda.

**Jalamanjari**
10 ingredients including Kousheyashma (6.25 %) are melted on a shallow crucible and then solidified by cooling them. It is indicated in Obesity, Edema, Anemia, Chlorosis and Swelling.

**Kshaya Kulantaka Chendooram**
This is a bhasma formulation containing Kousheyashma (14.28 %) in it. This bhasma is indicated in all respiratory diseases including tuberculosis.

**Nandhi Mezhugu**
This is a compound formulation with Kousheyashma (0.60 %) with other 50 ingredients. This will be like an Avaleha and is indicated in insect bite, rat bite, carbuncle, rheumatism, colic, skin diseases, cancer, eczema, urinary diseases, piles, paralysis, leprosy, anemia, spermatorrhea, edema, headache, fever, ascitis, fistula and dental diseases.

**Kalnar Parpam**
Parpam means Bhasma. This is a procedure of Marana in which Final product will have 100 % Kousheyashma. This Bhasma is indicated in Biliousness, painful micturation, inflammation of urogenital tract; and leucorrhrea. Experimental studies on Albino rats have proved that kalnar parpam have anti-inflammatory property at a dose of 40 mg/kg body weight.

**Kashayam for Madhumeha**
Kousheyashma (2.16 %) with other 13 ingredients are boiled with water to prepare Kashaya. This is indicated in diabetes mellitus, relieves thirst and burning sensation of body associated with diabetes mellitus.

**Amirtha Gandha Kukkil Valathy**
Kalnar (0.86 %) with 39 other ingredients are powdered well and are ground with honey. The medicine is useful in treatment of Osteoarthritis in a dose of 500 – 700 mg twice daily.

**DISCUSSION**
This study has shown that the mineral drug kousheyashma is an ingredient in 18 formulations. Out of 18 formulations discussed in this study, 12 are found mentioned in Ayurvedic literatures and 6 in Siddha literatures. The formulations included 7 Churna, 4 Gutika, 2 Kashaya, 2 Bhasma, 1 Ghrita, 1 Taila and 1 Lehya dosage forms. The percentage of Kousheyashma was ranging from 0.08 % to 100 % (Table 1).
In Ayurvedic books single drug usage of Kalnar is not mentioned. Siddha books however, mention the use of Kalnar parpam as a single drug. In folklore practice, powder of Kousheyashma is used as tooth powder. This practice is seen in South India, especially in rural areas of Karnataka, Tamil Nadu and Kerala. They use it in the treatment of “Gingivitis”. The ranges of indications of these formulations were too wide. Different formulations of Kalnar are indicated in diseases like swellings, obesity, anemia, respiratory diseases; tuberculosis, insect bites; rat bites, carbuncles, rheumatoid arthritis, skin diseases, urinary diseases, piles; paralytic leprosy, cancer, fever, spermatorrhoea; edema; headache, ascitis, fistula, dental diseases, bladder stones and retention of urine. Kalnar, as a single drug, is not indicated for external use. In combination, a frequently used formulation ‘marmani gulika’ is used externally in marmavikara and aghata (injury). Kachuradi churna is used for external use in peenasa, jwara shirashula.

CONCLUSION
Kousheyashma is a mineral drug grouped under Sikatavarga. No much references of this mineral are available in authoritative books of Ayurveda in Sanskrit, Hindi or English. Malayalam books of Ayurveda mention about this drug as Kalnar. It has been included in BAMS Undergraduate syllabus. It is mentioned in Mineral index of Ayurveda formulary of India. In English this mineral is called as Asbestos. Siddha literatures also contain the description on this mineral drug. Studies have proved that this mineral drug is useful in multi systemic diseases of Kayachikitsa. From the list of diseases for which Kalnar is used, it is evident that when used as a single drug it is indicated in pittaja vyadhi and in combination the application extends to tridoshas.

REFERENCES

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