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**A COMPREHENSIVE STUDY
ON NĪLAM**
(A PRECIOUS STONE-BLUE SAPPHIRE)



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S U M M A R Y

In Buddhistic era, when Indian civilization was at its Zenith in all spheres of life, the knowledge about the use of metals and minerals for the therapeutic purposes was at its peak and started to attract the attention of the world. Mineral therapy (Rasa Cikitsa) had been recognized as Daivi Cikitsa (divine therapy) by all concerned, considering its superiority over the other types of treatment. (Manusi and Asuri). It is evident that the use of metals and minerals for the medicinal purposes was prevalent even in pre-historic period but to a very limited extent. Their usage in therapeutics has started only after the development of Rasasastra as an independent branch of learning and therapy. Thus after the development of Rasasastra metals, minerals, precious and semi-precious stones were used in the form of fine powder, Bhasma, and as Pisti.

This dissertation captioned, "A comprehensive study on Nīlam" comprises conceptual study, practical study, discussion and conclusions.

The conceptual study is dealt with the Ratnas in general and Nīlam specifically along with gemstones and blue sapphires.

The study of Ratnas in general reveals the position and importance of Ratnas in the mineral kingdom. The Ratnas have been introduced with their history,

definitions, classifications, characters, qualities, properties, examination, identification as well as their therapeutic importance and indications. In order to have a better understanding the gemstones are also introduced under the same subheadings. The literature of Nīlam reveals that it is a Srēṣṭa Ratna, (great Ratna) classified under the Ratna group of the minerals. It's name 'Nīlam' indicates that it is of blue colour. The main sources of origin mentioned in the classics are Kashmir (India) Burma and Lanka (Srilanka).

The Nīlam which belongs to the Kuruvind family is to be have numerous varieties. It is evident from the descriptions of the colour of the Nīlams. Textual referances describes various hues of blue colour, equating it with colour of various substances, animals and vegetarians. Some authors are of the openion, that it is of four varieties depending upon their colours. They were related with four casts i.e. Vipra - White, Śatriya - pink, Vaiśya - yellow and Śudra - black. Mainly two varieties are named and described as Śakranīla and jalanīlā which are of blue colour. Śakranīla is of blakish blue colour (deep blue) and Jalanila is of whitish blue colour. The excellent qualities of Nilama are described as deep blue, having one colour only, heavy, clear, shining and beautiful, smooth to the touch and bright. The Nīlam which is having these qualities is considered as a superior quality Nīlam and recommended

for use. Sakranila is supposed to have these qualities.

The inferior quality Nilam is described as soft, light, redish colour, having blood like smell, rough, small, flat and has one colour in one half and another colour in the remaining half. Jala Nila is supposed to have these qualities.

Sakranila is synonymed as Indranila, Mahanila, Krsna, Garbhita Nila while Jalanila is synonymed as Sveta Garbhita Nila.

Sakranila of superior quality is indicated for therapeutic use. IN action it is Balya, Vrsya, Dipana, Rasayana, Medhya, Hradya, Visahara, Twacya, Varnya and Papagne. In therapeutically it is indicated for Kasa, Svasa, Jwara, bisamajwara, Kustha, Pandu and Arsa. It is Tridosaghna in dose Karma and Samgraha and Santikaraka in Prabhava. It acts on Rasa, Rakta, Prana, Purisa, and Maha Srotas. Further, it is therapeutically indicated internally as well as externaly for the diseases which are supposed to have due to the influence of Malefic Planet Saturn. viz. Svasa, Kasa, Arsa, Hridroga, Roga, Visamajvara, Ksaya, Unmada, Ajirna, Vata Vyadhi, Bhagandara, Pandu, Yaksma, Murcca, Snayuroga, Krimi, Pliha roga, Paksaghata, hastapada prakampa, Vatodara, Kustha nasaka and Papanasaka.

The drug forms of Nīlam are Bhasma and Piṣṭī. The dose of Bhasma is indicated as 1/8 Rati - 1/2 Rati.

The study of Nīlam follows the study of blue sapphire. As there are numerous blue colour gemstones belonging to some other mineral groups, and synthetic imitation gemstones of blue colour the natural gemstone cannot be identified only by optical properties. They should be measured physically and analysed chemically. The modern mineralogists have identified and classified these gemstones by measuring their hardness, specific gravity, streak of colour, cleavage, fracture, refractive index, characters depending upon light such as colour transparency etc. and by analysing its chemical composition.

The natural gemstones of blue sapphire as well as synthetic and imitation gemstones are used only as ornaments.

In order to identify the blue mineral Nīlam and to evaluate its therapeutic efficacy, mineralogical, experimental, pharmaceutical and clinical studies have been taken up. The role of Nīlam in Astrology was studied by Manidharana.

The second chapter comprises all the practical studies regarding mineralogy, experimental studies, pharmaceuticals clinical studies, and Manidharana.

In order to identify the Nilam and to understand the mineralogy of Nilam two blue mineral samples which was obtained in the name of Nilam and blue sapphire were studied. The sample No.1 which was addressed to Nilam was obtained from the pharmacy of I.P.G.T. & R., Jamnagar - India. It has been purchased from a recognised seller in the name of Nilam and its biological data are not known.

The second; Sample No. 2 was obtained from a mine in Ratrapura - Srilanka in the name of mineral blue sapphire. Both the samples were identified physically and chemically according to modern mineralogical methods. Physical properties such as hardness, specific gravity refractive index, cleavage, fracture, colour of streak and characters depending upon light such as colour, transparency, refractive index have been studied; of both the samples. Their chemical composition was studied by the chemical analysis. The physical properties and chemical analytical reports were compared with the standard data and mineralogy of both the samples were studied. The mineral sample No.1 addressed to Nilam was some other blue mineral called as Cardierite, (Iolite) and mineral sample No. 2; obtained as natural blue sapphire was confirmed that it was of corundumfamily.

Recently research workers have proved that Nilam is nothing but natural blue sapphire; but as far as its therapeutic value is concerned it is not clear whether

Nilam is natural blue sapphire or any other blue colour mineral. Therefore in order to confirm this doubt it was decided to carryout a comparative study on both the samples.

"Ratnanam Sodhanam Srestham

Maranam Durgunah Pradam....."

According to the above cited cortation regarding Ratnas by the process of incineration the Ratnas will loose their qualities and that purification is the most suitable pharmaceutical procedure. Therefore in order to evaluate the clinical efficacy of Nilam Pisti was prepared, following the textual references.

Both the mineral samples were purified with water and Tila oil, according to the general purification method of Ratnas, then following the specific purification method the minerals were subjected to Swedana proces with Nili Swarasa (Juice of plant Indigofera Tinctoria) using Dola Yantra for 3 hours.

The purified mineral samples were powdered and seived through 80 mesh.

Gulab Arka (agues rose) was prepared according to the textual references using the modern distillation apparatus. 2 lits. of aques rose were prepared with 1 kg of pink roses.

The Nilam powder; of Sample No. 1 (Indian) was subjected to Bhavana process with Gulab Arka seven Bhavanas had been performed within 40 hrs. and the prepared light blue colour tinted white Piṣṭī was of 120 mesh powder. The Piṣṭī prepared with the powder of Sample No. 2 (Sri Lankan) had been given 10 Bhavanas to prepare 120 mesh powder. It was a grey colour tinted white powder. Both the Pisti samples were tasteless, odourless and smooth in touch.

The experimental study was carried out to assess the toxicity of the samples as well as to have an idea of the margin of the dose for human beings. Two groups of Charles's foster strain albino rats of either sex each group containing rats weighing between 200-250 g were used in the study. The rats were bred and maintained in the Institute's animal house on Lipton's gold mohur rat pellets and tapwater given ad libitum. According to their body weights the dose was decided and Nilam Pisti dissolved in 3% tween 80 solution was given for 10 consecutive days. Eleventh day the animals were sacrificed and blood was taken from Jugular veins for haematopathological estimation. Five organs heart liver, kidney, testis and jejunum of rats of both the groups were excised and tissue sections of those organs were prepared for histopathological examinations.

The experimental studies revealed the toxicity of both the samples of all the five organs. The degree of

toxicity was less in Indian Sample than in the Srilankan sample. Therefore the Piṣṭī prepared with the Indian sample was selected to evaluate the clinical efficacy. The dose was decided as 5 mg twice daily.

The disease Tamak Śvāsa has been selected for the present study because Nīlam is indicated in Svasaroga. Six patients who are admitted in the I.P.G.T. & R., Hospital were selected according to the symptoms of Tamaka Svasa. The symptoms were recorded in the system as nil, mild, moderate and severe respectively in numericals - 0,1,2 and 3.

The Nīlam Piṣṭī of 5 gms twice daily was given in capsule form. Normal hospital diet was provided. No other medicine was given along with Nīlam Piṣṭī. Pathological investigations were carried out on blood, stool, and urine before and after treatments. Datas are statistically calculated. The relief of symptom Śvāsa was significant. No toxic symptom was noted.

Maṇḍhārana is also indicated in therapeutics. It is believed that it is helping someone to restore health fastly specially suffering from the diseases occurred due to the malefic planetary influence. Apart from this fact Maṇḍhārana is indicated for one's protection, to remove evil effects of malefic planets, etc. The utility of blue sapphire through its constant touch with the body is much more Praised by many Astrolgers too. In order to

assess this effect two gemstones of Nilam of whitish blue colour and one gemstone of deep blue (blackish blue) colour each weighting $1\frac{1}{2}$ Rati were selected for the present study.

10 Volunteers who are under the influence of Sani Graha (planet saturn) were selected as Nilam is representing the planet soturn. With help of an expert Astrologer the horoscopes were examined and the volunteers who are under the Sani Maha Dasa, Sade Sati of Sani, Sani Graha in Lagna, and in his own Rasi. That is of Makara Lagna and Sani of Makara were being selected for the study.

The gemstones fashioned on rings were given to wear on the middle finger of the right hand for 14 consecutive days. They were advised not to wear any other gemstones on the body during that period. In general the effect of this gemstone Nilam on the volunteers found that it has reduced mental tension and subsided mental worries. Further more it was noted that it enhanced the power of work, mental strength and different types of pleasure. No any adverse effect was recorded. Study of Mani Dharana specially Nilam should be studied elaborately according to modern scientific methods such as by blood investigations encephalography readings etc.

Therapeutic use of precious stones is in a decline to the lack of awareness regarding the identification of

therapeutically useful qualities, its availability and expense etc. It has been found in this study that the treatment using non gem quality stones is not so, expensive as generally believed; and therapeutic dose of these gem preparations is so small, that much material is not needed for treatment. Hence the utility of precious stones specially non-gem quality stones can be exploited in the field of the treatment of various ailments indicated against them and this may prove as a blessing to the ailing huminity specially when greenery of the glow is vanashing rapidly due to the ecological imbalance. Here the worker ends the dissertation with a recommendation that further research work in this field may proved fruitfull.

14. Skandapurana

15. Ratnavijayana