

rudraksha has been in use as an Ayurvedic medicine and finds mention in several books for herbal preparations both as a preventive and as a curative medicine. The residents of the area where rudraksha trees grow use the bark of the tree, its leaves and also the outer shell of the beads for various ailments, particularly mind-related disorders, headache, fever and skin diseases and to heal wounds. It is listed as a medicinal product in Indian Materia Medica. (Ref. 41)

As is widely known, a man's health can be properly maintained by balancing vaat (wind), pitta (bile) and kaf (phlegm) and without having to resort to allopathic medicines and thus protecting from their side effects. As rudraksha influences the mind through its subtle electro-magnetic properties, many diseases can be cured using it.

Vaat, pitta and kaf get regulated when a person's thought process is streamlined. This is possible as one becomes fearless and calms down and maintains a stable mind. A stable mind makes the body strong, which in turn wards off diseases.

Rudraksha may be having its effect in the following manner:

1. The subtle acupressure exerted on the body through the beads. The most advanced electro acupressure techniques

developed in China, Western Europe or the USA too adopt similar techniques. The modern gadgetry of acupressure can hardly match the natural characteristics of rudraksha because wherever the beads touch the body, continuously for several hours a day, which make both the mind and body to function properly.

2. Faith. Medicines cure illnesses more effectively when the patient has confidence in the doctor or on the medicine. Faith healing can take place only when one develops an inner confidence. Rudraksha is superior to any other form of natural healing as it is without any side effects. One does not require any special regulator or special training to wear or use rudraksha. Most importantly, this is the only healing technique, which uses spirituality in its most flexible form.

3. Research: There are a few published and unpublished research works on rudraksha showing its effectiveness as a medicine. For example, tests carried out at the University of Mumbai have established its positive impact on intelligence and memory and on cardio vascular disorders. There is ample scope for the bead to be used as an ingredient in making several herbal medicines. Experiences of local residents of the areas where rudraksha trees are found, have indicated that the most profound usage of this tree and the bead has been on mind-related disorders and in the control of blood pressure. Unfortunately, these beneficial aspects have never got noticed because the bead became a symbol of spirituality and its uses remained limited.

4. Pauranic Reference: Our ancient scriptures mention the bead as useful for several ailments.

Raj Nighantu: Rudraksha is acidic and warm and controls vaat and kaf. It removes headache, cures mental diseases.

Nepali Nighantu/Chandra Nighantu: Rudraksha belongs to Lord Neelkantha (Shiva); it is pure and destroys ghosts (all evil things). It is also known as Sharvaksha, Shivaksha, Shivarpriya and Haraksha.

Shaligram Nighantu: Properties described are similar to Raj Nighantu. (Ref. 42)

Swasth Vritta: Rudraksha is a good antidote for fever, vaat and pitta, for stomach disorders, mental imbalance, blood pressure, liver and breathing related disorders.

Dravya Gun Vigyan: Rudraksha is good for curing body swellings, infection, mental disorders, insomnia, headache, stress and for mental peace. It regulates blood flow and cures liver disorders. It is also extremely good for controlling blood pressure, breathing problems and problems of the heart. (Ref. 43)

Ras Yog Sagar: The beads are good for blood pressure, heart diseases and mental disorders. (Ref. 44)

Abhinava Nighantu: Rudraksha has heat-generating quality and is good as a remedy for poison and for diseases of children.

Vana Aushadhi Chandrodaya: Rudraksha is effective in the treatment of cancer, skin problems and tuberculosis; epilepsy, vaat, pitta, vomiting of blood, typhoid (the bead should be boiled in water and the concentrated form of this water should be consumed) and cough (taken in powdered form along with honey or a paste which can be made by rubbing the bead against a hard and clean surface, which can then be consumed by the patient).

Bhav Prakash: It explains various uses of shell (skin) of the

bead for mental illness.

Rudraksha beads can be put in water that is meant for regular drinking purposes. Preferably, a mud pot can be used to soak the beads overnight and this is recommended for use in summer. When this water is consumed regularly in the morning on an empty stomach, it is found to control blood pressure and heart problems.

Wearing of five mukhi rudraksha is considered good for heart diseases and the beads are recommended to be worn in red thread and should touch the skin over the heart. The beads are also found to be very effective in treating insomnia, liver diseases, migraine and mental disorders.

In many of the references, it is recommended to take rudraksha in powder form twice a day and one time quantity is about 300 milligrams. The recent study done at University of Mumbai too, the recommended dosage was almost the same. (Please see page 309.)

Recent studies show that wearing rudraksha changes the aura of a person and this may lead to some changes in his or her physical condition. The results of Kirlian photography or Aura Imaging confirm this observation. While the effects of wearing rudraksha come to be felt rather slowly, these are always of permanent nature. It has been observed that wearing the beads helps to maintain the energy fields of a living organism properly. Although aura imaging has several flaws and inconsistencies yet there are noticeable changes in aura of persons after wearing rudraksha.

To summarize, wearing rudraksha is beneficial to the nervous system bringing in calmness and peace of mind. It controls blood pressure and consequently paves the way for mental stability, removal of stress and helps one to retain a healthy body.

Given below is a summary of the properties of rudraksha in curing various diseases. (These examples and results should be used as guidelines to understand the scope and benefit of using the beads and its potential as a medicine.)

It can be seen from the above classification that rudraksha is an age-old traditional medicinal herb used in various ailments. Now, whether it has to be used orally as powder or in the form of an extract or to be simply worn over the body is a matter to be seriously investigated. The benefits if any in oral administration is an interesting subject of study and several scientists are attempting to correlate the results. The emanating energy from rudraksha mukhis (mouth) is known to possess great remedial powers.

Rudraksha Type	Deity	Planet	Uses in illnesses
1 mukhi	Shiva	Sun	Thrombosis, urinary stones, respiratory diseases, heart diseases, diseases of the eyes and skin, fistula, dyspepsia, night blindness
2 mukhi	Ardha Nareeshwar	Moon	Heart and lung diseases, disorders of the left eye, leukaemia, liver, breast problem, loss of memory, infections and diseases of the urinary bladder.
3 mukhi	Agni (fire)	Mars	Infection of the blood, blood pressure, cholera, ulcer, swellings, weakness, eye protection, cleansing arteries, disorders of the sex glands and adrenal glands and cold (practically used in all health problems)

Rudraksha Type	Deity	Planet	Uses in illnesses
4 mukhi	Brahma	Mercury	Diseases of ear, throat and nose, paralysis, sexual problems, gall bladder diseases, memory loss, all mental ailments, diseases affecting hands, arms, lungs and thyroid gland.
5 mukhi	Kalagni Rudra	Jupiter	Diseases of the liver, fistula, acidity, blood pressure, breast ailments, problems of thighs, vertebral column and for memory, inflammability and cardiac problems.
6 mukhi	Kartikeya and Ganesh	Venus	Problems of throat, neck, kidney, sex organs, thyroid, sexuality, dropsy, urinary and eye diseases, conceiving problem, indigestion, arthritis and for all obstruction in veins/nerves
7 mukhi	Lakshmi, Saptarshi, Saptamatikas, Anang (Kamdev), Anant (Snake Lord), Mahasen (Kartikeya)	Saturn	Weakness, stomach ache, paralysis, epilepsy, dumbness, impotence, abortion, problems in women, arthritis, purification of sperms and flow of ojas (divine energy)
8 mukhi	Mahasen (Kartikeya), Ganesh, Ashtamartrika (8 mother goddesses), Vasu, Ganesh, Batuk Bhairav	Rahu	Diseases of nervous system, prostrate, gall bladder and lungs, fear of snakes, cataract, hydrosil and breathing problems

Rudraksha Type	Deity	Planet	Uses in illnesses
9 mukhi	Bhairav, Nav Durga, Yamdev	Ketu	Diseases of brain, lungs, breasts, sexual organs, abortions, conceiving problems, epilepsy, eye problems
10 mukhi	Vishnu, Dashdigpal (Guardian of 10 directions), Yamraj, Mahasen (Kartikeya), Dash-Maha-Vidya	N.A.	Fear of someone standing behind, insomnia, conceiving problems, hear diseases
11 mukhi	Ekadashi Rudra (Hanuman), Indra	N.A.	Heart problems, blood pressures, diabetes
12 mukhi	Sun (12 Adityas), Vishnu	N.A.	All diseases of the skin, heart, eyes and nose and blood pressure, base disorders and for jyotishmati (seventh charka)
13 mukhi	Indra, Kamdev (along with Rati)	N.A.	Problems of throat, neck, kidney, sex organs, thyroid, sexuality, dropsy, urinary and eye diseases, conceiving problem, indigestion, arthritis, all obstruction in veins/nerves and psychiatric disorders
14 mukhi	Hanuman, Shreekanth Swaroop	N.A.	Weakness, stomach ache, paralysis, epilepsy, dumbness, impotence, abortion, problems in women, arthritis, purification of sperms, flow of ojas (divine energy), increase in secretions of eight charka (Vishnu)

Rudraksha Type	Deity	Planet	Uses in illnesses
15 mukhi	Pashupati (Shiva)	N.A.	Diseases of the heart, eyes, all general diseases, disorders of the lymph and throat area
16 mukhi	Lord Ram, Maha-kaleshwar	N.A.	Mental disorders, epilepsy
17 mukhi	Lord Vishwakarma, Katyayani Devi	N.A.	Stomach ache, skin diseases, ulcer
18 mukhi	Bhumi (Prithvi or earth), Avani	N.A.	Abortions, healthy child upbringing
19 mukhi	Narayan (Vishnu)	N.A.	For sexual disorders and various incurable diseases
20 mukhi	Brahma (Supreme Divinity)	N.A.	Diabetes, deafness and diseases as a result of planetary positions and to get power of eye
21 mukhi Gaurishankar, Shiv-Parvati	Kuber, Shiva	N.A.	To retain male power To maintain even flow of 108 frequencies in human body, fertility

Note: Consult your doctor before starting any of the above treatments oral administration of rudraksha powder has no side effects, yet prior consultation with doctor is advised.

Here are details of the effects of Rudraksha of various mukhis on different parts of the body: (This requires only wearing of rudraksha over the body in the form of a necklace or bracelet)

1	mukhi	pineal, pituitary, optic chiasma, hypothalamus
2	mukhi	heart
3	mukhi	throat, celiac plexus
4	mukhi	adrenal, heart
5	mukhi	all major chakra points
6	mukhi	prostrate and reproductive organs, root chakras
7	mukhi	optic chiasma, pancreas
8	mukhi	medulla oblongata
9	mukhi	pineal, pituitary
10	mukhi	heart power
11	mukhi	abstract nerve energy
12	mukhi	cerebral hemisphere, hiatus of stomach, esophagus
13	mukhi	celiac plexus, prostrate
14	mukhi	heart
15	mukhi	ileocecal valve, lymphatic throat area system
16	mukhi	thyroid thymus, spleen, pancreas
17	mukhi	small intestine, lungs and bronchial tree
18	mukhi	liver, womb
19	mukhi	lungs, bronchial
20	mukhi	adrenal
21	mukhi	reproductive organs

For best results, rudraksha should be worn over the chest in proper numbers. Rare and expensive rudraksha can be worn along with cheaper and easily available rudrakshas – 12 mukhi with several of 5 mukhi or 6 mukhi beads – so that there are at least three beads. The beads should be bigger like Amla (12 mm and above) and in case only smaller beads are available (for example, Indonesian variety), use them in numbers like

27, 54 or 108. The number of beads to be worn is mentioned in Chapter 7.

Rudraksha can be worn either vertically (in the direction of its mouth) or horizontally, but in both the cases, the beads should touch the skin. How long the beads can retain their energy is difficult to say yet, because no material on earth can last for ever – be it the energy giver like a rudraksha or a flower that gives out its smell or a fruit that exhibits its colour. The energy packed inside rudraksha (the seed within the bead) normally may not decay even after 10 or 100 years, yet their effective lifespan is a matter of further study. The heavier rudraksha has wet seeds inside and the lighter beads have dried seeds. Nature has provided a protective and insulated outer shell so well made that the seeds do not get dried quickly and the energy gets dissipated through the mukhi (lines or facets) so subtly that the rudraksha remain effective for a very long time.

Experience gained by using the beads can answer this question to some extent. However, to be on the safer side, if rudraksha is being used for medicinal purposes, then the beads should be replaced after a maximum of five years.

In case the bead is being used for water therapy (whereby 3 beads of 5 mukhis are dipped in water at night), the effectiveness remains for one year and thereafter the beads should be replaced. The old beads can be used for worshipping as they will otherwise remain intact, except that they will turn almost black due to touch with water.

Arrangement of beads in a mala or combination

The epics mention that the beads should be strung in such a way that the mouth of one bead faces the mouth of

another bead and the tail of one faces the tail of the other. In this way, the distances between the beads are automatically maintained. The mala thus made also looks balanced. However, the primary reason for such an instruction is to make the energy levels balanced. If all the beads are laid in one direction – for example all the mouths of the beads are positioned to face only one direction, say the south, then the energy flowing from each bead in the mala will get into the southerly direction. Hence, if the beads face each other – mouth to mouth and tail to tail – the positive and negative energies will get balanced. It is, therefore, very important to follow this principle. Even in case of small-sized beads, if one wants to have the best effects, the mouth and tail of these should be identified and strung accordingly.

Also, remember that the knot between the beads is a symbol of union of two forces. Hence it should be sanctified by chanting Om after each knot is placed by the artisan himself/herself. It is for this reason that mala making is always entrusted to a learned person having pious feelings and who follows these rituals properly. In this way, for all the 108 knots, the artisan must utter Om slowly and correctly. A mala made this way becomes a truly blessed item. In many ashrams in olden days, the Guru used to make malas under his own supervision choosing each bead carefully, checking the direction of the beads and placing knots in the silk/cotton thread (2½ times knot known as Nagpash granthi) properly, chant Om on completion of each knot and thus make a powerful mala for wearing or for Jap. Only the meru mani is placed with its mouth upwards in order to give support to the energies of all other beads.

For medical usage, it will be better if the beads are strung

using a metal wire (copper, panch-dhatu, silver or gold). Panch-dhatu is an alloy of copper, bronze, gold, lead and silver. It is believed that the cumulative energies of all the beads will act all over the body, though there are differences of opinion on the beneficial uses of this method.

Rudraksha can also be worn on the wrist, arm or other parts of the body. It can be worn around waist (17 mukhi, 21 mukhi) to open chakras and to control internal energies. An expert's advice is recommended for such uses.

The oral administration of rudraksha is also done in any of the following ways:

1. Make a fine powder of the rudraksha after cleaning it. This powder can be orally taken in quantities of about 350 milligrams per day. (Average weight of rudraksha of 20 mm diameter is around three grams or 3,000 milligrams, which will mean that one rudraksha will be required per week.

2. Methanolic extract: Grind the beads and extract using medical grade methanol (or n-hexane). The solvent is evaporated in a distillation apparatus and then the extract obtained is orally administered to the patient in recommended dosages. Some vaidyas, who are unable to use extraction process, boil the crushed rudraksha in any edible oil (mostly til oil) and the oil of rudraksha gets mixed with til oil. This oil is administered as a drug. The oil may be filled in gelatin capsules and this may become one of the many ways of administering rudraksha as a drug in times to come.

3. Using rudraksha as a paste: Rudraksha is rubbed over a hard and rough surface along with milk or water and a paste is prepared. This paste is orally given to the patient with additional water or milk. The efficacy of this treatment

cannot be vouched as the internal seeds are not used until the outer lignin shell is exhausted while making the paste.

4. Boiling in milk: Four or six mukhi rudraksha beads are boiled in milk for about 10 to 15 minutes and the milk is given to people suffering from any mental disorders, epilepsy, loss of memory and serious depression. It is also used for improving memory power and intelligence. This is a useful procedure to obtain benefits from four and six mukhi rudrakshas. Care should be taken to keep cleanliness of the bead after boiling. The beads should be replaced with a new set of beads after every month to get the best results. Sometimes the beads may break due to heat, but the broken pieces may continue to be used.

5. Treatment by wearing rudraksha over the head: A crown having 550 beads of four, five and six mukhi rudrakshas, if kept over the head of a person suffering from acute mental problems, may result in calmness and help the user. Some experts also make a pyramid or hut-shaped crown using rudraksha and make a person sit beneath it for meditation.

6. Rudraksha Ash (Bhasm): There are instances where rudraksha is burnt slowly and converted into ash, which is taken with milk or honey. This process needs to be scientifically investigated as rudraksha contains gold, barium and other metals, which can be medically effective if taken this way. In ayurveda, bhasm is usually made by putting the material in clay pots, which are sealed and then burnt using dry cow dung cakes. Some experts feel the properties of the seeds may get diluted or destroyed if burnt like this. Besides, the bhasm route of treatment needs to be examined for its usefulness.

7. Rudraksha Fruit's outer pulp is also a remedy for several ailments, particularly mind related diseases.

All these modalities are described in order to indicate the diversity of rudraksha and the manifold benefits out of its use. However, a thorough study is required to understand the best procedure to be followed and its advantage over wearing the beads over the body.

Ayurveda originated from Lord Shiva. He wears the crescent-shaped moon over his head. The moon (soma) is the preserver of all medicinal plants. Therefore rudraksha, being the blessed medicinal plant and its beads worn by Shiva, have special properties.

Following are some of the typical beliefs associated with the use of rudraksha. Some of these are known to and practiced by traditional doctors or vaidyas. All these need to be clinically evaluated but many of these are interesting.

Treatment by wearing:

1. It is believed that those who wear rudraksha on their right or left arm do not get paralytic strike.
2. Wearing three or five rudrakshas on the waist will give relief from back pain. The beads should invariably touch the back portion of the body.
3. Wearing mala made of five mukhi or large Nepali variety rudraksha along with 12 mukhi rudraksha can control blood pressure as well as prevent heart diseases.
4. Wearing rudraksha in the neck can give relief from ailments of the throat like tonsillitis and hoarse voice.
5. Wearing 11 mukhi rudraksha on the tuft over the head can cure headache, migraine, vertigo, weak memory and continual cold.

In addition to the above, I have mentioned several other treatments in the book while describing the properties of beads of different mukhis.

Treatment as medicine in different forms:

(These are some oral applications of rudraksha. Readers are requested to consult a vaidya, an expert or a doctor before they resort to these methods. Rudraksha is a very hard seed and making a fine powder of it is not an easy task and requires good grinding facility and sieving. If the powder is not made fine and there are hard particles of rudraksha shell, it may cause some harm.)

1. Crush rudraksha and put it in boiling water (the quantity of water should be six times the quantity of rudraksha by weight and the beads should be fresh). When it becomes one-fourth in volume, remove it from fire and use it as quath. When taken regularly along with honey, it is found to be useful as a blood purifier and a general tonic for energy.

2. Boil rudraksha along with harad, adusa's bark and raisin in equal quantities in water three times the weight of the herbs to make a quath. This quath can be taken along with honey as a cure for breathing problems, cough and general weakness.

3. Use the pulp of the rudraksha fruit or the bark of the tree or the bead itself and make powder. Use this to control epilepsy.

4. Use rudraksha and apamarg seeds four times the weight of rudraksha and make a quath as described earlier. 10 to 12 drops of the decanted quath should be consumed daily to cure piles. Piles can also be treated using powder made from rudraksha, triphala and guggul in the ratio of 1:4:4.

5. Make a quath of rudraksha, devdaru, chitrak, harad,

daruhaldi, giloy, saunth, punarnava and dharangi in equal quantities and consume regularly to treat jaundice, stomach ache and liver problems.

6. Use rudraksha and the root of kakoda in the ratio of 1:4 and make a quath using one litre of water. Ninety per cent of the water should be allowed to evaporate and consume one spoon of the quath with twice the quantity of ghee made of cow's milk to treat poisonous effects due to bites, etc. of insects.

7. Boil four or six mukhi rudraksha in milk and take this milk regularly for a month to improve memory power.

8. To improve sexual power, make a paste of rudraksha by rubbing it on any hard and rough surface and apply the paste over the forehead. Wearing 13 mukhi rudraksha (for best results three beads) around neck along with six mukhi rudraksha mala has also been found to be very useful for this purpose.

Rudraksha as a beauty aid:

1. For wrinkles and black circles under the eye: Apply rudraksha paste made in water along with some drops of fresh lime and tulsi on the affected parts.

2. For skin diseases: Apply paste made out of five mukhi beads mixed with cow dung in water, preferably from Ganges, over the affected areas. This is helpful in treating ring worm infection, eczema etc.

3. For a glowing face: Mix rudraksha and majeetha powder with honey and ghee made out of cow's milk and rub the paste on the face to add a glow.

4. Clear skin: Prepare a paste of rudraksha, red sandalwood, leaves of vat-vraksha and chameli and apply it on the face. Wash it off with lukewarm water after 10 to 15 minutes. It will make the skin clear.

5. Removing wrinkles: Prepare a paste of eight mukhi rudraksha and almond seed powder in rose water, apply it on the face and leave it for about one hour. Wash the face in clean water not using soap. In a few days, it will add charm to the face and remove wrinkles. Wrinkles can also be treated in the following way: prepare a mixture out of fine powder of rudraksha and bark of Arjun tree and make a paste using honey. Apply it on face and leave it for an hour before washing with clean water.

Rudraksha to treat burns

1. Mix rudraksha powder in coconut oil and apply it on the affected part.

2. Mix powdered form of white sandalwood, giloy and rudraksha in limestone water (made out of adding limestone in water and decanting it) and add equal quantity of coconut oil. Apply this on the burnt part of the body.

Rudraksha to treat piles

1. Prepare a paste out of rudraksha, bark of karanj and saur tumbi leaves using goat's urine and add the juice of aakada (a type of fruit) to this. Apply this preparation locally.

2. Prepare a paste out of root of kaner and rudraksha (in a 4:1 combination) and apply it locally.

3. Take rudraksha and triphala in 1:4 ratio and prepare a paste. Mix this with honey and apply locally.

Rudraksha for hair

For premature graying of hair: Prepare a paste of rudraksha, iron powder, black soil and bhringraj and add sugarcane juice. Bury this preparation in a pot in the soil for about one month and then take it out and apply it on the hair three to four times a day. In three to four months, it will give back the natural colour of the hair and help in its growth.

Rudraksha water

Immerse three to five beads of rudraksha in one litre of water in earthen or copper pot for about 20 hours. Decant the water, allow the beads to dry for two to three hours and again put them back in the water for another 20 hours. Remove the beads thereafter. Drinking this water on a daily basis will help control blood pressure and is good for heart ailments. The same beads can be used upto one year.

This water can also be used in:

headache or migraine (put a few drops in the ears)

any external infection or wound (apply this water locally and also drink it regularly)

cold and cough (put a few drops in the nose)

eye diseases (put a few drops of this clear water in the eyes)

Detailed experimentation and studies were carried out at Mumbai University in the Department of Pharmacology under Professor Dr. A.V. Juvekar during the years 2005-2007. Following are the summarised finding of the same:

1. Evaluation of Anti-inflammatory activity of Rudraksha in experimental rats

(In all studies healthy Wistar rats sourced from Haffkine Biopharmaceuticals Corporation, Mumbai were used. Protocol as per approved practices was followed for maintaining, feeding and trials on the rats.)

Discussion and Conclusion

Herbal medicines derived from plant extracts are being increasingly utilized to treat a wide variety of clinical diseases, though relatively little knowledge about their mode of action is available. There is a growing interest in the pharmacological evaluation of various therapies used in Indian traditional systems of medicine.

Elaeocarpus ganitrus popularly known as Rudraksha, holds a very special place in Hinduism, and is credited to possess mystical and divine properties. Rudraksha beads are considered auspicious as well as powerful, and are supposed to have profound astrological and health benefits. According to the Ayurvedic medical system, wearing Rudraksha can have a positive effect on the heart and nerves, and relieve you from stress, anxiety, depression, palpitations and lack of concentration. It is also known for its anti ageing effect, and electromagnetic and inductive properties. People with high blood pressure have benefited from the use of Rudraksha seeds. According to Ayurveda, fruits are sour, appetizer, sedative and useful in treatment of cough, bronchitis, nerve pain, epilepsy, migraine etc.

There are scanty reports that Rudraksha is effective in treatment and management of inflammation and related

disorders. Hence the present work was undertaken to scientifically evaluate and validate the said claim.

The methanolic extract of Rudraksha was evaluated for its anti-inflammatory activity in acute model. Significant anti-inflammatory activity was observed for methanolic extract of Rudraksha in carrageenan induced oedema model. The extract showed inhibition in inflammation at the doses 200 mg/kg and 400 mg/kg. However, the extract showed maximum inhibition of 36.6% at the dose of 400 mg/kg after 3 h of drug administration. Carrageenan induced oedema is commonly used as an experimental animal model for acute inflammation and is believed to be biphasic, of which the first phase is mediated by the release of histamine and 5HT followed by kinin release and then prostaglandin in the later phase.

The overall results of the present study indicate that, under the given experimental conditions, methanolic extract of Rudraksha has anti-inflammatory activity.

2. Antidiabetic activity evaluation of Rudraksha powder

Introduction

Diabetes mellitus is a chronic disease in which blood glucose (sugar) levels are too high. Cells in the body break down glucose in order to provide energy for movement, growth, and repair. The hormone insulin is responsible for regulating glucose levels in the blood. Abnormally high levels of glucose can damage the small and large blood vessels, leading to diabetic blindness, kidney disease, amputations of limbs, stroke, and heart disease.

There are three common types of diabetes. Type 1 diabetes is usually (but not always) diagnosed in children and young adults. Persons with type 1 diabetes make no insulin and must take insulin every day. Type 2 diabetes is usually (but not always) diagnosed in adults over the age of 45. In type 2 diabetes, either the person is not making enough insulin, or the body is resistant to insulin and cannot use it properly. Gestational diabetes occurs during pregnancy: 2-4 percent of all pregnant women have gestational diabetes. If a woman has gestational diabetes, she has about a 40 per cent chance of having type 2 diabetes later in her life.

About 17 million persons in America have Diabetes mellitus, but five million of them don't even know it. Nearly 1 million new cases are diagnosed each year. The disease affects men and women of all ages and ethnic groups. African Americans, Latinos, American Indians, Alaskan Natives, Asian Americans, and Pacific Islanders are more affected than other groups.

Diabetes mellitus is a major endocrine disorder affecting nearly 10% of the population all over the World. In spite of the introduction of hypoglycemic agents, diabetes and the related complications continue to be a major medical problem. Since time immemorial, patients with non-insulin dependent diabetes mellitus have been treated orally by folklore with a variety of plant extracts. In the indigenous Indian system of medicine (Ayurveda), a mention was made on good number of plants for the cure of diabetes or 'madhumeha' and some of them have been experimentally evaluated and the active principles were isolated. However, search for new antidiabetic drugs continues.

Discussion

Diabetes mellitus is possibly the world's largest growing metabolic disease, and as the knowledge on the heterogeneity of this disorder is advanced, the need for more appropriate therapy increases. Traditional plant medicines are used throughout the world for a range of diabetic complications. The study of such medicines might offer a natural key to unlock a diabetologist's pharmacy for the future.

Rudraksha powder (Batch No. 013CS) at the dose levels 250,500 and 1000 mg/kg of body weight in normal non-diabetic rats shows significant decrease in blood glucose levels at 2 hr after treatment, but do not show significant decrease thereafter as compared to control group.

Streptozotocin induced diabetic rats after treatment with Rudraksha powder (Batch No. 013CS) for 30 days at dose levels 250,500 and 1000 mg/kg of body weight show decrease in blood sugar level as compared a baseline values (day 0 of the treatment). Rudraksha powder at dose 250 mg/kg does not show significant decrease in blood glucose level as compared to diabetic control group even after 30 days treatment. Rudraksha powder at dose levels 500 and 1000 mg/kg showed significant decrease in blood glucose level after 30 days treatment. Fifteen days after stopping the treatment there was increase in blood glucose levels of all treatment group animals. Rudraksha powder treated groups showed no significant decrease in blood sugar levels as compared to diabetic treated group but Glibenclamide (10mg/kg) treated group showed significant decrease in blood glucose levels of rats as compared to diabetic control group.

The Rudraksha powder (Batch No. 013CS) treated rats at

dose level 250mg/kg do not show significant changes in HDL-cholesterol and triglycerides levels but shows significant decrease in LDL and total cholesterol levels as compared to diabetic control group. Rudraksha powder at dose levels 500 and 100mg/kg (Batch No. 013CS) treated rats showed significant increase in levels of HDL-cholesterol (good cholesterol) and decrease in levels of triglycerides, LDL-cholesterol, VLDL-cholesterol and total cholesterol levels.

Conclusions

Current study indicated a significant lowering of blood sugar level with treatment of Rudraksha powder (Batch No. 013CS) at dose levels 500 and 1000 mg/kg of body weight in streptozotocin induced diabetes in Wistar rats. Hence Rudraksha might help preventing diabetic complications and serve as a good adjuvant in the present armamentarium of anti-diabetic drugs.

3. Evaluation of Cardioprotective Activity of Rudraksha

Introduction

Cardiovascular disorders account for 12 million deaths, annually worldwide and are known to be number one group of killer diseases. Ischemic heart disease (IHD) has emerged as a major health problem and is predicted that by the year 2020 this disease will persist as the major and the most common threat to human life.

Myocardial infarction or myocardial ischemia, commonly known as heart attack is the most dreaded among ischemic heart diseases and one of the major causes of mortality worldwide. It is associated with ischemic necrosis of cardiac

muscle due to compromised supply of blood to a portion of myocardium for proper physiological function. The pathogenic mechanism of myocardial ischemic damage is still not completely understood, but the role of oxygen-derived free radicals (OFR's) in myocardial ischemia has been established although not completely characterized.

Oxidative stress is implicated in the etiopathogenesis of a variety of human diseases, including cardiovascular diseases. The antioxidant status has a major influence on the development of coronary artery diseases. Myocardial ischemia is invariably followed by several biochemical alterations, such as lipid peroxidation, free radical damage. Hyperlipidemia etc., leading to qualitative and quantitative alterations of the myocardium. Hence, screening natural compounds with antioxidant potential for their cardioprotective activity is a valid and viable approach.

Rationale & Objective of the study

There are scanty reports that Rudraksha is effective in treatment and management of cardiovascular and related disorders. Hence the present work was undertaken to scientifically evaluate and validate the said claim.

Discussion

Isoproterenol-induced myocardial infarction in rats has been shown to be accompanied by hyperlipidemia, increased activity of serum creatine kinase, lactate dehydrogenase and aminotransferases. Damage to the myocardium could be owing to the induction of free-radical-mediated lipid peroxidation by isoproterenol. The free radicals generated by isoproterenol administration initiate lipid peroxidation of

membrane bound polyunsaturated fatty acids, leading to an impairment of structural and functional integrity of myocardial membrane.

The need for assessing the size of experimental infarction arises while evaluating the drugs for the beneficial effect against myocardial infarction. The serum enzymes serve as sensitive indices to assess the severity of myocardial infarction.

Pharmacological augmentation of endogenous myocardial antioxidants has been identified as a promising therapeutic approach in diseases associated with increased oxidative stress. During myocardial infarction these enzymes are structurally and functionally impaired by free radicals, resulting in myocardial damage. GSH has a direct antioxidant function by reacting with superoxide radicals, peroxy radicals and singlet oxygen, followed by formatting of oxidized GSH and other disulfides. The levels of endogenous antioxidant enzymes SOD, catalase and reduced glutathione were found to be significantly decreased in the heart tissue of isoproterenol treated rats. In EGM pretreated rats, there was augmentation of these endogenous antioxidant enzymes. These findings insinuate that the antioxidant enzyme systems may be directly related to the pathogenic mechanism of isoproterenol-induced myocardial infarction suggesting the protective effect of EGM on the myocardium.

Histopathological observations of the heart tissue of rats challenged with isoproterenol showed confluent necrosis, separation of muscle fibres and inflammatory infiltrations. EGM pretreatment protected these morphological changes, thus supporting the cardioprotective activity of EGM. The protection might have been mediated through EGM induced

increase in basal myocardial antioxidant enzyme activities.

These results are comparable with the standard drug Captopril, which was used as a positive control in the study.

Conclusion

The present study showed that pretreatment of rats with methanolic extract of *Elaeocarpus ganitrus* (EGM) offers significant protection against myocardial oxidative stress-induced injury. (Similar results were obtained when Rudraksha power was used – in later studies.)

4. Evaluation of Nootropic Activity of Rudraksha extract

The test evaluates the drug's potential in improving learning and memory (Nootropic potential). The control cholinergic pathways play a prominent role in learning and memory.

Conclusion

Rudraksha extract significantly improved the acquisition and retention of memory in spatial memory test. It also significantly improved basal and seopolamine-impaired performance in all four quadrants showing.