"APPLICATION OF AGNIHOTRA ASH AS INNOVATIVE THERAPY IN SKIN WOUND HEALING IN GOLD FISH"

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I. **INTRODUCTION**

Wound healing disorders are therapeutic problem of extensive clinical importance as wound healing involves multiple complicated events. Even in modern times wound healing agent continue to puzzle medicals scientists. Thus it is reasonable to search for simple and easily available or otherwise treatment to establish novel therapeutic approaches on other hand. Since the tine of holy prophet application of ash is reported categorically in sahih bhukhari.

Physiological affect of different topical ointments available are well documented throughout the literature. Even the mechanism of some of those is also known.

Wound healing in skin depends upon the availability of appropriate metals and trace elements as enzyme co-factors and structural component in tissue repair also needed.

Ash provides an appropriate requirement of trace metals on one hand and also antioxidant, anti-inflammatory and anti-infective coat on other hand.

Thus provides favorable internal environment for regeneration and proliferation.

On other hand role of traditional knowledge in nature conservation is emphasized by the convention on biological diversity.

What is Agnihotra?

Agnihotra, the basic healing fire of homa therapy is a copper pyramid exactly at sunrise and sunset each day. Agnihotra can neutralize the effects of pollution on plants, animals and human beings and at the same time give nourishment. Agnihotra is an ancient powerful method of purifying our environment. In an age of growing pollution and toxicity of air, water and soil, a technology is now available that has been used for thousands of years and recently validated scientifically for removing pollution. Not only does it remove pollution but it benefits and nourishes all forms of life and has an immensely balancing effect on the human mind. Various studies have shown its efficacy with de-addiction from alcohol and drugs. It is performed in a small copper pyramid of specific proportions at the exact moment of sunrise and sunset. The reason for this is that at the transition from day to night or night to day, a very special effect is present in the atmosphere and by performing it at this time; it has a much more powerful effect. Dried cow dung, ghee and rice are the only other ingredients needed.

Agnihotra is performed all around the world and was revived in this century by a great teacher from Maharashtra called Shri who resided in Akkalkot. He has setup a renowned instutute which is teaching Agnihotra throughout India and promoting it around the world.

The beauty of the practice is that it can be done by anyone, anywhere and the effects are most profound on the mind of the performer and all around. By purifying and nourishing our atmosphere, we subsequently purify ourselves.

Vedic Society is supporting that Agnihotra can reach every corner of the world, we have established a project called Agnihotra Direct. We suggest each and every person perform Agnihotra as often as possible, those living in particularly polluted places should do it daily if possible. It has been proven to compliment natural farmining methods immensely and the government in Peru is supporting massive programs promoting Agnihotra as the results saving crops from certain failure have been overwhelming. Many farmers around the world are performing Agnihotra too.

MATERIAL REQUIRED FOR AGNIHOTRA

PYRAMID: For agnihotra w required a copper pyramid of specific size. Copper is a conductor for subtle energies also.

RICE: Brown rice, highly polished rise looses nutritional value and hence we use less polished rice. Only unbroken piece of rice should be used for Agnihotra. If rice is broken the subtle energy structure around the material is disturbed and hence is not fit for agnihotra healing fire.

DRIED COW DUNG: Take dung from male or female progeny of a cow. Make pancake-like patties and dry them in sun. Agnihotra fire is to be prepared from this dried cow dung. Cow dung is treated as medicine in all ancient cultures whether they are Indians of north or South America, east or west Europeans, Africans or Asians.

GHEE: Take some butter from cow's milk, which has no additives and is pure. Heat it on low heat. After the water has evaporated and white solids have risen to the top pass the liquid through a fine strainer. What passes through is clarified butter (Ghee). This can last without refrigeration for a long time. Ghee is a very special medicinal substance. When used in agnihotra fire it acts as carrier agent for subtle energies. Powerful energy is locked up in this material.

TIMINGS: Agnihotra is practiced exactly at sunrise and sunset each day. Computer-generated time tables are available for any place using software developed in Germany.

AGNIHOTRA PROCEDURE:

A few minutes before the actual time of sunrise and sunset we should start to prepare the agnihotra fire as follows:

Place a flat piece of dried cow dung at the bottom of the copper pyramid. Arrange piece of dried cow dung in the pyramid in such a manner as will allow air to pass. Apply a little ghee to a small piece of cow dung and light it. Insert this lighted piece of cow dung in the middle of the pyramid. Soon all the dung in the pyramid will catch fire.

We may use a hand fan to blow the air and help the flame. However, do not blow on the fire so as to avoid bacteria from the mouth affecting the fire. Do not use any type of mineral oil or similar material to start the fire. At sunrise and sunset the fire should be fully ablaze in the pyramid.

We take a few grains of the rice in a dish or our left palm and apply a few drops of ghee to them. Exactly at sunrise utter the first mantra and after the word SWAHA add a few grains of rice to the fire. Utter the second mantra and after the word SWAHA add a few grain of rice to the fire. This are using completes morning agnihotra.

At sunset do the same by using evening mantras. This completes evening agnihotra.

If we miss the timing it is not agnihotra and we will not get the healing effect on the atmosphere or in the ash.

After each agnihotra try to spare as many minutes as we can for meditation. We can sit at least till the fire extinguishers it. Agnihotra creates medicinal and healing atmosphere. Just before the next agnihotra collect the ash and keep it in a glass or earthen container.

MANTRAS FOR HOMA THERAPY:

There are vibrations that exist everywhere. It is only vibration when we go into it. Where there are vibrations there is also sound. When we do these mantras, the sounds we utter activate this special vibration that will create certain atmosphere of effects. Then the desired results are realized. These vibrations exists for everything, so anything can be activated, controlled or changed by mantras

SUNRISE AGNIHOTRA MANTRA:

Sooryaya swaha sooryaya idam na mama

Add the first portion of rice after swaha.

Prajapataye swaha prajapataye idam na mama

Add second portion of rice after swaha.

SUNSET AGNIHOTRA MANTRA:

Agnaye swaha agnaye idam na mama.

Add the first portion of rice after swaha.

Prajapataye swaha prajapataye idam na mama

Add second portion of rice after swaha.

Agnihotra should be performed every day at sunrise and sunset.

These mantras are easy to chant. Agnihotra mantras generate relaxing and purifying effect on the mind. They create vibrations of peace and love and positively manipulate our mind and atmosphere.

These Mantras are in Sanskrit are ordained by the Vedas. All the alphabets of the Sanskrit language are endowed with special vibrational powers. Their utterance in esoteric combination produces unique sound waves of magnificent vibrations. These vibratory sound waves are powerful beyond imagination. Their immediate effect on the atmosphere and all life, even plant is extremely gratifying and nutritious. These particular combination of sound and meanings of the Sanskrit language are known as Mantras. Agnihotra Mantras are to be uttered in their original form that is in Sanskrit. They are not to be translated in any other language because it will destroy original scientific sound waves and frequency patterns. The translated words will be devoid of creating the beneficial

vibratory sound waves and hence no benefits can be derived from uttering such words.

The offering to the fire are to be made uttering only two Mantras. These are prescribed for the performance of Agnihotra by the Vedas. There are two mantras in the morning at sunrise and two mantras in the evening at sunset. Agnihotra mantras are to be uttered in such rhythmically balanced s of these mantras.

ACTUAL PERFORMANCES

Check the local sunrise sunset timings from the annual timetable provided for performing Agnihotra. Adjust your watch correctly as per the standard time. Normally about 5-10 minutes before the actual sunrise time arrange pieces of dry cow dung cakes in the Agnihotra pot. First, take a small piece of cow dung cake and place it at the bottom of the pot. Now put Gugul camphor or cotton wick duly soaked in cow’s ghee on the bottom piece and then start arranging the other pieces of cow dung cakes around it neatly. Use a matchstick and light the fire. If necessary use the fan so that all the pieces are fully ablaze. Take two pinchfuls of clean, unbroken rice grains (raw) on the palm of your left hand or in a small dish...

Agnihotra atmosphere induces on your watch and sooner its needle touches the exact sunrise time, start uttering first mantra ‘ Sooryaya Svaha ‘ immediately on saying ‘Svaha’ offer one part of the rice grains to the fire and at the continuing the mantra complete the first line uttering ‘ Sooryaya Idam Na Mama ‘. Uttering the other line of the mantra offer other part of the rice grains to the fire after saying

‘Prajapataye Svaha ‘and complete the mantra uttering ‘Prajapataye Idam Na Mama ‘. Concentrate on the fire till the offerings are fully burnt. The morning Agnihotra concludes here.

In the evening before the Agnihotra time remove very carefully the morning Agnihotra ash from the pot and put it in a bag or box specially kept aside for it. Repeating the morning process prepare a fresh fire from the cowdung cakes in the pot. Also prepare two equal parts of the cow ghee smeared rice grains for the two offerings. Exactly at sunset time, accompanied by the chanting of sunset Agnihotra mantras – ‘ Agnaye Svaha ‘ offer the first part after saying ‘Svaha’ and complete the mantra by saying ‘ Agnaye Idam Na Mama ‘. Similarly, uttering the second line of the mantra offer other part of the rice grains to the fire after saying ‘ Prajapataye Svaha ‘ and complete the

mantra uttering ‘ Prajapataye Idam Na Mama ‘. Concentrate on the fire till the offerings are fully burnt. This concludes the evening Agnihotra.

There will be an aid in your efforts.

AGNIHOTRA ASH:

Agnihotra ash, a healing substance is experienced to contain many therapeutic properties. It is mentioned that the healing effect of the agnihotra fire is locked in the Agnihotra ash. Therefore its effect is available in the form of Agnihotra ash. Agnihotra ash cannot bought or sold, as everyone practices his own agnihotra and can use the resulting ash for simple applications. As homa therapy uses only natural substances, please also use only natural substances with agnihotra ash in your recipes. The simplest way to use the Agnihotra ash is in pure powder form. In order to have fine readily usable powder, pass the agnihotra ash through a fine sieve, such as tea strainer. It is easy to shake the agnihotra ash through such a sieve or strainer and we will then have a fine agnihotra ash powder. The bigger, harder parts that remain in the strainer can be given to plants or put into water sources like river or lakes.

HISTORY:

The place where Shivpuri is presently located was initially defined as a special area by Shree Swami Samartha Maharaja. During one of His journeys, He stopped in the area of Shivpuri and sang a Hymn of Lord Shiva. This was His indication for the times to come and to foretell the fact that this land will be known far and wide as the land of Lord Shiva. In Vedic tradition the word Shiv is also used to denote fire or energy.

The place was named Shivapuri after Swami Shivanand Yogendra Maharaj, the father of Parama Sadguru Shree Gajanan Maharaj.

Shivanand Maharaj was the highest among Yogis. He was a Nada Brahma Yogi who exemplified the Shabda Brahma concept.

Shabda Brahma means "the word that was in the beginning, which was with God, which was God and by which everything was made that was made" People held him in highest esteem as the incarnation of Maharishi Jamadagni, the great sage of Bhrugu dynasty, who enunciated the Akshar Brahma concept (concept of the indestructible word). Literally the word Jamadagni in Sanskrit means the blazing Yajnya fire.

The Vedic word Shiva also connotes Yajnya fire. Hence Shivanand means fire which grants Ananda or 'eternal bliss'.

Shivanand Yogendra Maharaj possessed astonishing Yogic powers. Even while he used to be in deep sleep one could hear the chant of Mantra in his breathing rhythm. This great Yogi once declared "Death shall not conquer us".

The devotees believe that he is still in the state of Samadhi in Shivapuri in the cellar where the holy body is preserved before the place was sealed with stone. It seems that there is some mission yet to be performed by the holy body in the cellar called Shiva Gumpha.

Before actually purchasing this small piece of land in the year 1953 as a proposed site for preparing Swami Shivanand's Samadhi many auspicious signs were shown to Shree. He had seen the 'Rising of the sun' on the horizon as he first cast his glance on the piece of land which later was to be known as Shivpuri.To Shree, thatsymbolised the ushering in of the New Era.

II. **METHODS AND MATERIALS**

MATERIAL:

Goldfish

The goldfish (*Carassius auratus auratus*) is a freshwater fish in the family Cyprinidae of order Cypriniformes. It was one of the earliest fish to be domesticated, and is one of the most commonly kept aquarium fish.

A relatively small member of the carp family (which also includes the koi carp and the crucian carp), the goldfish is a domesticated version of a less-colorful carp (*Carassius auratus*) native to East Asia. It was first domesticated in China more than a thousand years ago, and several distinct breeds have since been developed. Goldfish breeds vary greatly in size, body shape, fin configuration and coloration (various combinations of white, yellow, orange, red, brown, and black are known).

Scientific classification

Kingdom	-	Annimelia
Phylum	-	Chordata
Class	-	Actinopterygii
Order	-	Cypriniformes
Family	-	Cyprinidae
Genus	-	Carassius
Species	-	C. auratus

History : Starting in ancient China, various species of carp (collectively known as Asian carps) have been domesticated and reared as food fish for thousands of years. Some of these normally gray or silver species have a tendency to produce red, orange or yellow color mutations; this was first recorded in the Jin Dynasty

A western aquarium of the 1850s of the type that contained goldfish among other coldwater species

During the Tang Dynasty (618–907), it was popular to raise carp in ornamental ponds and water gardens. A natural genetic mutation produced gold (actually yellowish orange) rather than silver coloration. People began to breed the gold variety instead of the

silver variety, keeping them in ponds or other bodies of water. On special occasions at which guests were expected they would be moved to a much smaller container for display.

By the Song Dynasty (960–1279), the domestication of goldfish was firmly established. In 1162, the Empress of the Song Dynasty ordered the construction of a pond to collect the red and gold variety. By this time, people outside the imperial family were forbidden to keep goldfish of the gold (yellow) variety, yellow being the imperial color. This is probably the reason why there are more orange goldfish than yellow goldfish, even though the latter are genetically easier to breed.

During the Ming Dynasty (1368-1644), goldfish also began to be raised indoors which led to the selection for mutations that would not be able to survive in ponds. The occurrence of other colors (apart from red and gold) was first recorded in 1276. The first occurrence of fancy tailed goldfish was recorded in the Ming Dynasty. In 1603, goldfish were introduced to Japan, where the Ryukin and Tosakin varieties were developed. In 1611, goldfish were introduced to Portugal and from there to other parts of Europe. During the 1620s, goldfish were highly regarded in Southern Europe because of their metallic scales, and symbolized good luck and fortune. It became tradition for married men to give their wives a goldfish on their one

year anniversary, as a symbol for the prosperous years to come. This tradition quickly died, as goldfish became more available, losing their status. Goldfish were first introduced to North America around 1850 and quickly became popular in the United States.[9][10]

In aquaria

A Fantail goldfish

Like most carp, goldfish produce a large amount of waste both in their faeces and through their gills, releasing harmful chemicals into the water. Build-up of this waste to toxic levels can occur in a relatively short period of time, and can easily cause a goldfish's death. For common and comet varieties, each goldfish should have about 20 US gallons (76 l; 17 imp gal) of water. Fancy goldfish (which are smaller) should have about 10 US gallons (38 l; 8.3 imp gal) per goldfish. The water surface area determines how much oxygen diffuses and dissolves into the water. A general rule is having 1 square foot (0.093 m^2). Active aeration by way of a water pump, filter or fountain effectively increases the surface area.

The goldfish is classified as a coldwater fish, and can live in unheated aquaria at a temperature comfortable for humans. However, rapid changes in temperature (for example in an office building in winter when the heat is turned off at night) can kill them, especially

if the tank is small. Care must also be taken when adding water, as the new water may be of a different temperature. Temperatures under about 10 °C (50 °F) are dangerous to fancy varieties, though commons and comets can survive slightly lower temperatures. Extremely high temperatures (over 30 °C (86 °F) can also harm goldfish. However, higher temperatures may help fight protozoan infestations by accelerating the parasite's life-cycle—thus eliminating it more quickly. The optimum temperature for goldfish is between 20 °C (68 °F) and 22 °C (72 °F).

Like all fish, goldfish do not like to be petted. In fact, touching a goldfish can endanger its health, because it can cause the protective slime coat to be damaged or removed, exposing the fish’s skin to infection from bacteria or water-born parasites. However, goldfish respond to people by surfacing at feeding time, and can be trained or acclimated to taking pellets or flakes from human fingers. The reputation of goldfish dying quickly is often due to poor care. The lifespan of goldfish in captivity can extend beyond 10 years.

If left in the dark for a period of time, goldfish gradually change color until they are almost gray Goldfish produce pigment in response to light, in a similar manner to how human skin becomes tanned in the sun. Fish have cells called chromatophores that produce pigments which reflect light, and give the fish coloration. The color

of a goldfish is determined by which pigments are in the cells, how many pigment molecules there are, and whether the pigment is grouped inside the cell or is spaced throughout the cytoplasm.

Because goldfish eat live plants, their presence in a planted aquarium can be problematic. Only a few aquarium plant species for example *Cryptocoryne* and *Anubias*, can survive around goldfish, but they require special attention so that they are not uprooted. Plastic plants are often more durable, but the branches can irritate or harm a fish that touches one.

Feeding

In the wild, the diet of goldfish consists of crustaceans, insects, and various plant matters. Like most fish, they are opportunistic feeders and do not stop eating on their own accord. Overfeeding can be deleterious to their health, typically by blocking the intestines. This happens most often with selectively bred goldfish, which have a convoluted intestinal tract. When excess food is available, they produce more waste and faeces, partly due to incomplete protein digestion. Overfeeding can sometimes be diagnosed by observing faeces trailing from the fish's cloaca.

Goldfish-specific food has less protein and more carbohydrate than conventional fish food. It is sold in two consistencies—flakes that

float, and pellets that sink. Enthusiasts may supplement this diet with shelled peas (with outer skins removed), blanched green leafy vegetables, and bloodworms. Young goldfish benefit from the addition of brine shrimp to their diet. As with all animals, goldfish preferences vary.

Behavior

Behavior can vary widely both because goldfish live in a variety of environments, and because their behavior can be conditioned by their owners.

Goldfish have strong associative learning abilities, as well as social learning skills. In addition, their visual acuity allows them to distinguish between individual humans. Owners may notice that fish react favorably to them (swimming to the front of the glass, swimming rapidly around the tank, and going to the surface mouthing for food) while hiding when other people approach the tank. Over time, goldfish learn to associate their owners and other humans with food, often "begging" for food whenever their owners approach.

Goldfish are gregarious, displaying schooling behavior, as well as displaying the same types of feeding behaviors. Goldfish may display similar behaviors when responding to their reflections in a mirror.]

Goldfish have learned behaviors, both as groups and as individuals that stem from native carp behavior. They are a generalist species with varied feeding, breeding, and predator avoidance behaviors that contribute to their success. As fish they can be described as "friendly" towards each other. Very rarely does a goldfish harm another goldfish, nor do the males harm the females during breeding. The only real threat that goldfish present *to each other* is competing for food. Commons, comets, and other faster varieties can easily eat all the food during a feeding before fancy varieties can reach it. This can lead to stunted growth or possible starvation of fancier varieties when they are kept in a pond with their single-tailed brethren. As a result, care should be taken to combine only breeds with similar body type and swim characteristics.

Intelligence

Goldfish have a memory-span of at least three months and can distinguish between different shapes, colors and sounds. Goldfish vision is among the most studied of all vision in fishes. By using positive reinforcement, goldfish can be trained to recognize and to react to light signals of different colors or to perform tricks. Fish respond to certain colors most evidently in relation to feeding. Fish learn to anticipate feedings provided they occur at around the same time every day.

Reproduction

Goldfish may only grow to sexual maturity with enough water and the right nutrition. Most goldfish breed in captivity, particularly in pond settings. Breeding usually happens after a significant temperature change, often in spring. Males chase females, prompting them to release their eggs by bumping and nudging them. A pregnant goldfish is called a "twit".Goldfish, like all cyprinids, are egg-layers. Their eggs are adhesive and attach to aquatic vegetation, typically dense plants such as *Cabomba* or *Elodea* or a spawning mop. The eggs hatch within 48 to 72 hours.

Mosquito control

Like some other popular aquarium fish, such as the guppy, goldfish and other carp are frequently added to stagnant bodies of water to reduce mosquito populations. They are used to prevent the spread of West Nile Virus, which relies on mosquitoes to migrate. However, introducing goldfish has often had negative consequences for local ecosystems.

Physiology of gold fish

External anatomy

Anal Fins: Helps to keep the fish stable in the water and keep it from rolling over.

Caudal Fins: Tail fins are used for propulsion (to push the fish forward). Goldfish are bred to have many different types of tailfins. Common goldfish have single tails and the fancy goldfish have different types of double tails.

Caudal Peduncle: Where the tail meets the body.

Dorsal Fin: provide stability when swimming. Wild type goldfish (and most common goldfish) will have a long dorsal with about 13-19 rays. The rays starts like spines and branch out at the end. Not all goldfish breeds have dorsal fins. Ranchu and Lion heads are two of the most common breeds without this fin. Some veiltail varieties have a very tall dorsal fin. For fish with a dorsal fin, this this fin should be erect (a sign of good health), however in some breeds with tall dorsal fins, the dorsal will bend.

Eyes: Goldfish use their eyes to see. Goldfish have fairly good eyesight. Some breeds however are bred to have "bug eyes" (i.e. telescope goldfish like moors) and cannot see that well. Some people believe that black goldfish are normally almost blind. Fish do not

have eyelids, so you should turn your tank lights off every evening so they can get some sleep.

Lateral line: Is a sensory organ (a series of fluid-filled canals just underneath the skin) that helps fish detected water current, pressure and movement.

Mouth: The mouth opens at anterior end of head. The upper and lower jaws are equal in size and are slightly slanted. Goldfish don't have barbells. Goldfish do not have teeth in their jaws, but they do have pharyngeal teeth found in the back part of the oral cavity.

Nacres: There are two pairs of nacres on each side of the snout. The front and rear nacres are connected by a U shaped tube. Water flows through the nacres through the olfactory tube and receptors embedded in the epithelium detect odors in the water. Behind the front nacres, there may be a flap of skin called the Nariel folds or nasal septa which directs water into the front opening. Pompon goldfish are known for their large frilly Nariel folds or nasal septa.

Operculum: The flap covering the gill also known as gills cover. Males will develop small white spots on the gill cover which are called breeding stars or breeding tubercles. Breeding stars are not

seen until the goldfish is old enough to breed, somewhere between the age of two and three years. Some goldfish are bred to have curled operculums.

Pectoral Fins: The two pectoral fins are used for steering. Male goldfish, when they reach sexual maturity will often develop white bumps called nuptial tubercles or breeding stars along the leading ray of their pectoral fins. Some people say that the first ray of the pectoral fin is rather thick and stiff in male goldfish (compared to those of female goldfish). Some people also believe that male goldfish have longer pectoral fins that do female goldfish. If the goldfish is ill, it may clamp the pectoral fins close to its body.

Pelvic/Ventral Fins: The two pelvic fins provide stability and help with steering. For breeders the shape and length of the ventral fin is very important. Japanese breeders in particular often specialize in fish with long ventral fins.

Vent: (or anal opening) External opening to digestive, urinary and reproductive tracts. Some people believe that females have rounder convex vents while males have thinner concave vents. During spawning, male goldfish will try to butt the female anal area.

Went: Raspberry-like growth (skin folds) on top of the head of some breeds of goldfish such as organdies, and lion heads. Sometimes also known as a hood, cap, crown or goosehead. As the wen grows, white pimples may sometimes occur. These are generally nothing to be concerned about.

METHODS

Diseased specimen of gold fish was purchased from local fish market of Indore. Fish were stored in glass aquaria.

The rest of the fishes were divided into two groups of eight fishes in each. The first group was treated with agnihotra ash while remaining group was treated with NaCl as shown in table:

S.no.	Group No.	Treatment
1	I	NaCl, Malachite green and copper sulfate
2	II	Agnihotra Ash

The duration of experiment was 60 days. Food was supplied daily at a fixed time in the form of dry and chopped prawns. Artificial aeration was supplied during experiment.

Two fish aquarium A and B were set in close proximity identical in size, shape and quantity and quality of water plants and no. of diseased fish. Agnihotra ash was added to one aquarium only.

Observations were made on the recovery of wound, water level and health of fish in the two aquariums.

- Two identical fish aquarium.

- Equal strands of plants held in place by clean glass marbles.
- Eight four inches diseased gold fish, four of which were placed in aquarium A and remaining in aquarium B.

Behavioral studies:-

Behavior of the fish in control and experimental water was observed during the experimental period.

Physico-chemical analysis of control and experimental water was done and analysis of agnihotra ash was also done.

1. **Physico-chemical analysis of water:-**

Physico-chemical analysis of control as well as experimental water was done according to procedure describe in standard method of analysis of water (APHA).

Following water parameter were analyzed for-

1. Total Alkalinity

2. Total hardness

3. Chloride

4. Calcium

5. Magnesium

6. Temperature

7. pH

8. Conductivity

1) Total alkalinity: -Two drops of methyl orange solution were added to 50 ml of water sample and then titrated with standard sulphuric solution (0.02N).

Total alkalinity was calculated by using the formula-

$$Caco_3/liter = \frac{Used\ volume\ of\ standard\ acid\ x\ 100}{volume\ of\ used\ sample}$$

2) Total hardness: - 1.5 ml of ammonia buffer solution was added to 50 ml of water sample to bring $_pH$ at 10-10. To this Erichrome black-T indicator solution was added (2-3drops). Then this word solution was titrated with standard EDTA till the color turned to bright blue.

Hardness was then calculated by the following formula:-

Total hardness

$$Caco_3/liter=\frac{used\ volume\ of\ titrent*A*B}{volume\ of\ used\ sample}$$

3) Chloride: - Chloride was estimated by Mohri's method. 50 ml of water sample and 4-5 drops of potassium chromate indicator solution. Titrate the sample against the 0.0141N $AgNo_3$ solution till pinkish yellow color appears. Hardness was then calculated by the following formula-

$$Mg\ Chloride/liter= \frac{used\ volume\ of\ titrent\ X*a*b*c}{used\ volume\ of\ sample}$$

Where a= 35.46(atomic wt. of cl^-)

b= 0.0141(N of $AgNo_3$)

c= 1000ml

4) $_pH^{:-}$ $_pH$ of water sample was measured by $_pH$ paper.

5) Temperature: - Water temperature in all aquaria was measured by THERMOMETER.

ANALYSIS OF AGNIHOTRA ASH:-

After performing homa the ash was collected and was also dried at 105^0c in the hot air oven. Replicates 1.9 gm to 2.0 gm sample of ash were weighed in 100 l of conical flask and treated with 5.0 ml of nitric acid. Five ml of nitric acid was also

added o an empty flask. The flasks were covered with watch glasses and their contents were heated to reflux gently on an electrical plate. After refluxing for one hour the contents of the flask s were treated with 5.0 ml more of nitric acid, 2.0 ml of 35% hydrogen peroxide was added and the heating at gentle reflux was continued for another hour. The watch glasses were removed from the flasks and the heating was continued until the volume of their contents was reduced to 2-3 ml. The contents of the flasks were cooled, dilute with de-ionized water and filtered through Whiteman #42 paper into 25.0 ml volumetric flasks and examined by atomic absorption spectrophotometry for the sodium potassium, calcium, magnesium, iron, zinc, manganese, and copper levels.

White spot disease of Gold Fish:

Symptoms of Goldfish White Spot Disease

Small white spots (giving the disease its name) which look like nodules of salt attached to the fish on the skin, gills and fins. Fish can sometimes be observed rubbing against hard or sharp objects, whilst trying to dislodge the parasitic nodules. In the latter stages the fish may be observed gasping for oxygen. This is because severe infection of the gills will reduce the fish’s ability to absorb oxygen naturally.

Causes of Goldfish White Spot Disease

White spot or white spot disease (also known as ich) is severely contagious and is caused by the protozoan parasite - *ichthyophthirius multifiliis*. This parasite attaches itself to fish as part of its lifecycle, burrowing underneath the skin to feed on the fish, forming the characteristic white spots or cystic nodules at each place of infection. The parasitic nodules eventually fall off the fish but the parasite continues to multiply inside the nodule. The nodule eventually bursts releasing free swimming infectious parasites into the water which attach themselves to new host fish. White Spot is often introduced with new unquarantined fish which are already carrying the disease. It is widely believed that fish become prone to white spot infection when water temperature fluctuates widely or when temperatures dip below the normal.

Ich is a common name for the parasite *Ichthyophthirius multifiliis* and the disease that it causes. The parasite is capable of killing large numbers of fish in a short period of time. Early diagnosis and treatment are essential for controlling

Ich and reducing fish losses. Prevention of this disease is, of course, the best method of avoiding fish mortalities. Identification of Ich Fish infected with Ich may have white specks on their skin as though they were sprinkled with salt.

Ich is sometimes called white spot disease. The skin of the fish may also look bumpy. Mature forms of the parasite are large (up to 1 mm or 1/32 inch across) and can be seen without magnification. Ich often causes the fish to have large amounts of mucus sloughing off of their skin, an appearance which may resemble fungus when viewed from a distance in the water. Many times, however, the only indication of IchÕs presence may be dead and dying fish. In some Ich cases the parasite may be present only on the gills and not on the skin. Fish with Ich may be observed making quick rubbing or scratching movements on objects or on the pond bottom. This behavior is sometimes called ÒflashingÓ because of the quick and sudden exposure of the fishÕs light-colored belly as it rolls during erratic movements. Trout have been observed flashing at the water surface, appearing as though they are striking at insects. In the final disease stages, Ich-infected fish also may appear lethargic and sometimes gather around inflowing water. Infected fish usually refuse to eat. Under the microscope, Ich appears as a sphere that changes shape and moves around in a rolling motion, using tiny hairs called cilia that totally cover the parasite. Its method of motility is often compared to that of an amoeba. The center of the adult organism has a C-shaped nucleus.

Experimental detail:

1. One teaspoon agnihotra ash was added to aquarium A. No ash was added to aquarium B and 2-3% of Nacl or malachite green or copper sulfate was added to aquarium B.
2. Both sets of fish were fed the same food supplement.
3. Both the aquarium was kept for observation for 60 days.

III. OBSERVATION

During this study, investigation and observation were made on fish behavior, physico-chemical analysis of water, analysis of agnihotra ash.

Observations of various studies are given below.

Behavioral studies:

Fish in aquarium A were healthy and showing normal swimming movement. However the fish in aquarium B was weaker.

Physico-chemical analysis of water:

Physic-chemical analysis of water of control and experimental water was carried out for the following parameter.

I. **Alkalinity**: Minimum alkalinity 336 mg/l was recorded in water with agnihotra ash while maximum alkalinity 400 mg/l was observed in normal aquarium water.

II. **Hardness**: Hardness of water with agnihotra ash was found 246 mg/l while hardness of normal water was 220mg/l.

III. **P^H:** No significant change in **P^H** of normal and experimental group was observed. It ranges between 8.09 to 8.30 in various tables.

IV. **Conductivity:** conductivity of water with agnihotra ash was 848 and conductivity of normal water was found 726.

V. **Temperature:** The average temperature of the normal aquarium water and treated water found 22.7^0c.

VI. **Calcium:** The calcium in normal water was found 34.4 and the calcium in agnihotra water was 58.4

Results are tabulated in table-

Table 1

Physico-chemical analysis of water

S. NO	units	Water parameter	Normal water	Experimental water
1	Mg/l	Alkalinity	400	336
2	Mg/l	Hardness	220	246
3	Mg/l	P^H	8.09	8.30
4	^{0}C	Temperature	27.8	27.7
5	µs	Conductivity	726	848
6	Mg/l	Calcium	34.4	58.4
7	Mg/l	magnesium	30.15	22.5

Analysis of agnihotra ash:

Agnihotra ash contains all the trace elements which are required for wound healing in skin of Gold Fish. The appropriate combination and utilization of metal/trace elements present in the agnihotra ash make a constituent in metaloenzymes. Ash contents provide almost all metals required in healing cascade.

Table 2

Relative concentration (ppm) of trace elements in agnihotra ash

Na^+	K^+	Ca^+	Mg^+	Fe^+	Zn^+	Mn^+	Cu^+
0.27	1.3	5.2	1.02	1.2	5.0	1.3	0.91

IV. RESULT

Graphical representation of recovery of Gold fish:

By day 7 –

After 7 days it was observed that the water in aquarium A was clearer and the fishes were livelier and wound recovery was observed 10% but in aquarium B fishes recovery was found to be only 5%.

By day 14 –

After 14 days the water in aquarium B which was containing NaCl was noticeably because it was becoming yellow and giving typical odour like foul as compare to bowl A.

So after 14 days the white spot present on aquarium a fishes observed to be decreased in size and the recovery was found to be 20% while in aquarium B the recovery was found to be only 13%.

By day 28 –

After 28 days observation was done on both aquarium A and B, respectively. One teaspoon agnihotra ash was added to aquarium A. In the experimental aquarium there was a decrease in spots size and recovery was found to be 40%. After this time, progressive loss of the superficial ash covering was observed. While in aquarium B recovery was found to be only 32%.

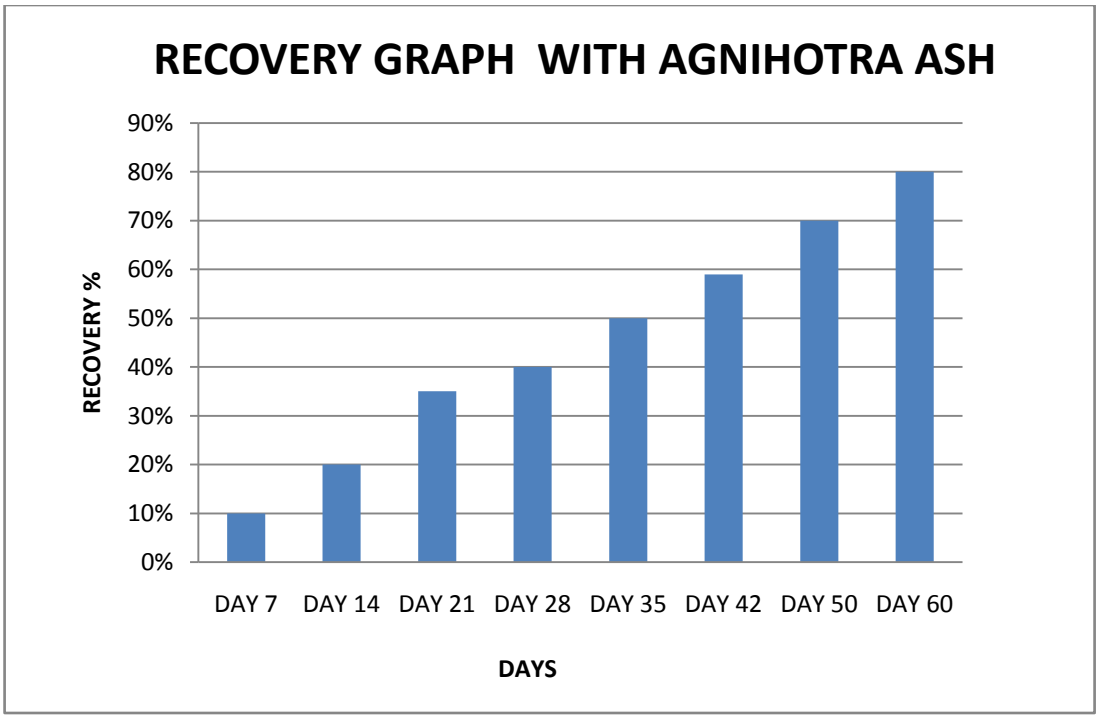
By day 42 –

The experimental spots had decreased in size and fishes were healthy and recovery was observed 58% while in aquarium B it was found only 45%.

By day 60 –

The experimental fishes showed complete normalization and became healthier and livelier spots are less appear and decreased in size and recovery was found to be 80% while in control aquarium recovery was found only 65%.

On the basis of the result it is concluded that agnihotra ash provide almost all metals required in healing cascade, and as agnihotra ash is easy, cheap and cost free alternative remedy for skin wound healing. However data from animal study, if tried on human subjects may provide a silver line so that it could be recommended for skin injury treatment in human subjects. The present finding the ash as a potential therapeutic drug, can accelerate the clinical testing and commercialization. This will also provide patent-protected market position and promising therapeutic targets at all level. In all these application to strengthen and balance health with the agnihotra fire, the effect can be intensified by also using the agnihotra ash. This mean we can perform agnihotra and in addition apply the agnihotra ash. The cost is minimal.


RECOVERY GRAPH WITH AGNIHOTRA ASH
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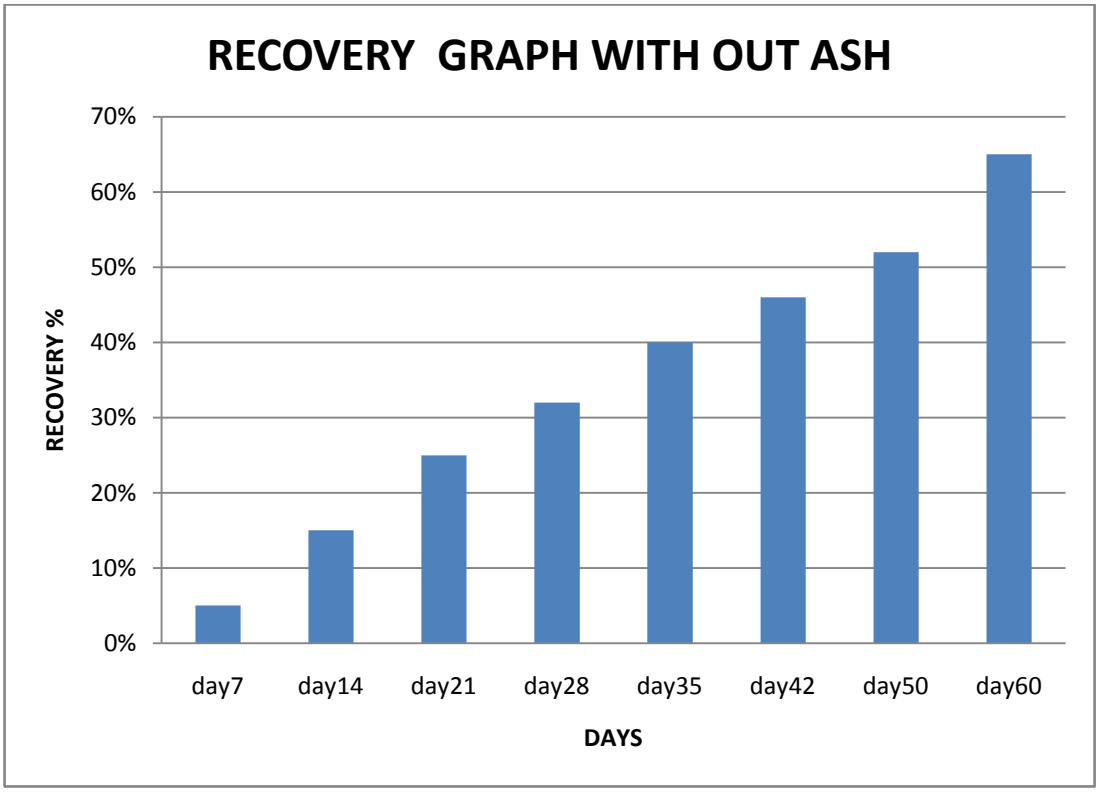
DAY 60
DAYS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V. DISCUSSION

Traditionally since centuries the natural products are being used till today specially to cure the skin injuries. Agnihotra ash one of these products is also is used in the country on the whole and in sindh particular. However, no attempt for scientific observation are made and reported to work out its mechanism of action. Undoubtedly different ashes viz wood ash, charcoal ash and dung ash, clays and oils are being used beside the Bentonite (Multani mutti). The application of agnihotra ash on skin wound healing in gold fish is comparatively safe and feasible. The skin is the largest organ and contributes 10% of whole body and is exposed to physical and mechanical assaults daily. Injury of skin causes immediately local inflammation and spot formation a hallmark of the wound healing that orchestrate the cell movement necessary for wound healing. The present study is an attempt to observe the visual details of healing process stepwise by the application of agnihotra ash. Surprisingly ash contains many metals and trace elements required in healing cascade (Table-2). This highlights its clinical importance. The deficiency in availability of metals leads to metabolic defects. Homa Therapy is totally a revealed science. It is as old as creation. In the course of time this knowledge was lost but it is now being resuscitated to give

people guidance about how to correct the polluted conditions of the planet we find ourselves in today. HOMA Therapy comes from Vedas, the ancient most body of knowledge known to man. This knowledge can be used in several areas. Scientists can test Agnihotra performed using no vessels, different shaped vessels of copper.

People with professional backgrounds can easily document the surprising effect of Agnihotra atmosphere on the neurological system of man.

Birds are another possibility for experimentation. The quality of the voice of birds improves in Agnihotra atmosphere. The song of birds becomes bright and clear. By experiments with birds one could measure the effects of YAJNYA on living organism. It is the birds now that are feeling tremendous effects from pollution. It will restore the oils that pollution has depleted from their feathers.

The scientist will wonder how Agnihotra ash does what it does. Now miracles happen when this ash comes into contact with something. Scientists should not look at it quantitatively but qualitatively. What are the results from putting the ash with something? Then when they look at the results and think of the whole process they will understand it is Grace operating. When Agnihotra ash is put into water at the source of a body of water, the water becomes energized and it begins to take on healing properties.

We suggest an experiment with fish: Take two fish tanks. Put some Agnihotra ash in the water in the first tank only and not in the second. Put some fish from the same stock in both tanks. It will be found that in the tank containing Agnihotra ash: (a) Growth of bacteria is controlled. (b) Growth of algae is controlled. (c) Necessity of changing water becomes less.Water stays clearer longer. Necessity for changing tank or using filter become less. (d) Fish become more brilliant in color. Number and size of offspring become greater.

One can put Agnihotra ash in the food given to goats. Then one can test the milk and cheese.

One can try the Agnihotra ash with cow feed. Test the milk, test the ghee (clarified cow's butter). Then test the ash which comes from this dung and ghee.

The Agnihotra fire creates a special healing atmosphere and therefore it is of utmost importance if we want s nurture our health. Perhaps the question arises, “how can a healing atmosphere heal anybody?” Perhaps we have simply forgotten just how we depend upon her. Through agnihotra is an ancient technology, we urgently need such a healing potion in our modern society because we are all exposed to contaminated and toxic atmosphere. It is interesting that modern

research in the medical field confirms that the happier a human being is, the more stable is his health.

Agnihotra is excellent for the health of animals. May be you have a pet, or raise cattle on a farm. No matter what animal or what size, your darling will always benefit from agnihotra atmosphere as well as from the agnihotra ash. Additionally you can add agnihotra ash powder in to the feed or drinking water, sprinkle it on wounds, etc. this will directly contribute to their better health.

In all these application to strengthen and balance health with the agnihotra fire, the effect can be intensified by also using the agnihotra ash. This mean we can perform agnihotra and in addition apply the agnihotra ash. The cost is minimal.

VI. SUMMARY

- The study was aimed to investigate the effect of agnihotra ash on diseased gold fish *Carassius auratus.*
- *Carassius auratus* is fresh water fish in the family Cyprinidae of order Cypriniformes.
- It is easily available and maintained in laboratory condition for experimental work.
- In present study, the agnihotra ash, a healing substance is experienced to control many therapeutic properties. Agnihotra ash totally solves the radiation problem. Even more so agnihotra negates its effect. Agnihotra neutralizes harmful radiation and cleanses the planet.
- Agnihotra, the basic healing fire of homa therapy is a copper pyramid exactly at sunrise and sunset each day.
- Diseased fishes were collected from local fish market of Indore.
- The disease of fish is white spots on fish skin. This disease is commonly known as *Ich.*
- White spots disease is severally contagious and is caused by the protozoan *Ichthyophthirius multifiliis.*
- Fishes were divided into two groups of eight fishes.

- The first group was treated with agnihotra ash while remaining group was treated with NaCl or Copper sulfate or Malachite green.
- The water of all aquaria was change every fifth day. Physico-chemical analysis of control and experimental water was done. During the experiment the water of the aquaria was aerated.
- Physico-chemical analysis of control and experimental water was carried out for total alkalinity, hardness, chloride, temperature and P^H using various methods as described by APHA.
- Analysis of ash was also done.
- Spots on fishes of normal and experimental groups were noticed every 7^{th} day.
- Spots decrease in size in aquarium A which is experimental while in aquarium B spots on fishes decrease less in size.
- Fishes of experimental group were 80% recover while in control group recovery was 65% from white spots disease.
- On the basis of the study it is concluded that agnihotra ash provide almost all metals required in healing cascade, and as agnihotra ash is easy, cheap and cost free alternative remedy for skin wound healing. However data from animal study, if tried on human subjects may provide a silver line so that it could be recommended for skin injury treatment in human subjects.

- The present finding the ash as a potential therapeutic drug, can accelerate the clinical testing and commercialization. This will also provide patent-protected market position and promising therapeutic targets at all level.

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