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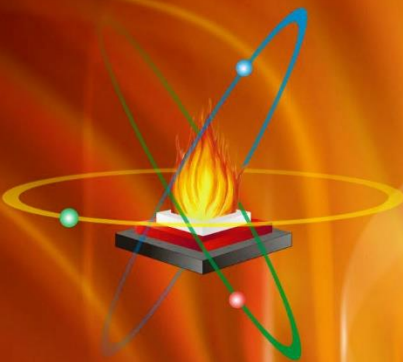
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Research Article

Management of Epileptic Seizures through an Integrated Approach including Yagya Therapy

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Abstract. *Background:* Epileptic seizure is a neurological condition in which brief to long episodes of vigorous shaking, convulsions, blackouts, fainting, unresponsiveness, jerks, etc. occur in the patients. Current treatment approaches are anti-seizure medicines, which patients are bound to take throughout life. These medications are mostly not able to reverse or eradicate the condition. *Purpose:* As per the classical texts of Ayurveda, Apasmara is a disease that has similar symptoms as those found in epilepsy; it is of four types wherein either one of the three Doshas, i.e. Vata, Pitta, and Kapha, is predominantly vitiated, or there is an imbalance of all the three Doshas. Hence, the medicinal herbs that balance the respective doshas, are used in the Ayurvedic treatment of epileptic seizures. Various plant extracts or their derivatives have been found to be effective in the treatment of epilepsy. Yagya Therapy provides pulmonary inhalation of medicinal smoke of multiple herbs (generated through oblation in fire along with chanting of Vedic hymns), which have the potential for seizure treatment. *Methods:* A case report about a male patient, who was suffering from epileptic seizures since past 13 years, as well as other

associated ailments has been presented in this article. The patient was prescribed an integrated approach including Yagya Therapy (using an appropriate herbal formulation - hawan samagri), and some other Ayurvedic treatments like decoction of medicinal herbs, Ayurvedic medicines, dietary restrictions, etc. *Results:* Before starting the integrated approach including Yagya Therapy, the patient used to experience seizure episodes, at least once every 7 to 10 days; however, after starting the integrated approach, the patient did not experience any seizure episode up to his second visit, i.e. for about 54 days. He also experienced relief in other associated ailments like vibration in the entire body. *Conclusion:* The integrated approach including Yagya Therapy showed encouraging results with regards to the treatment of epileptic seizures and other associated ailments.

Keywords. Epilepsy, Epileptic Seizures, Yagya Therapy, Ayurveda, Pulmonary Inhalation, Herbal Medicines

Introduction

Epilepsy is a chronic neurological disorder with widespread presence (1-19). Out of approximately 70 million patients of epilepsy worldwide, about 12 million people suffer from epilepsy in India (5). In modern allopathic medicine, the most common treatment approach for epileptic seizures includes anti-epileptic drugs (AEDs); although, seizure control is normally achieved in about two-thirds of the cases, about one-third cases still remain uncontrolled (1,14). In patients who achieve seizure control by AEDs, it has been found that discontinuation of AEDs leads to relapse in more than one-third of the cases (2). Also, epilepsy is associated with significant physical, psychological, and social consequences, which lead to substantial impairment of quality of life, as well as various mental ailments like depression, anxiety, etc. (10,11). A comprehensive therapeutic approach that can simultaneously address all these factors is not readily available. Thus, there is a definite need to look for other therapeutic approaches, which can help in the management of epileptic seizures, as well as the associated physical and mental ailments.

According to Ayurveda, a healthy human body is supposed to have a relatively stable equilibrium (congenial homeostasis) of Dosha (psycho-biological rhythm - Vata, Pitta, Kapha), Dhatu (body tissues) and Mala (excreta) (20); Acharya Sushruta defines health as an equilibrium of Dosha (psycho-biological rhythm), Agni (digestion and metabolism), Dhatu (body tissues), Malakriya (excretory function), as well as the well being of soul, senses and mind (20). Imbalance in this equilibrium leads to disease. Treatment of disease involves procedures for purifying the biological system by removing the vitiated elements from the entire body, and thus causing disease prevention, as well as health promotion (21).

Venkatraghavan et al. (22) have mentioned, that as per Ayurvedic texts, Apasmara is a disease that has similar symptoms as those found in epilepsy. The word Apasmara is made up of two words - Smara

means memory, which includes memory, intelligence and consciousness; and, Apa means loss – thus, loss of consciousness is one of the important signs in Apasmara (22). As per Ayurvedic texts, epileptic seizures have been classified into four major groups; in the first three types, one of the three Doshas, i.e. Vata, Pitta, and Kapha, is predominantly vitiated, while the fourth variety is caused by their combined effect (Sannipata) (23). Hence, the medicinal herbs that balance the respective doshas, are used in the Ayurvedic treatment of epileptic seizures.

Various plant extracts or their derivatives have been found to be effective in the treatment of epilepsy (3,18,19); this includes reduction in seizure frequency, improvement in quality of life, as well as relief in other associated mental conditions. Bansal et al. (2015) (19) studied the applicability of Yagya for the treatment of epilepsy, and described the utility and probable mode of action of various medicinal herbs, like Jatamansi, Nagarmotha, etc. that have known anticonvulsant activity.

Yagya is an ancient Indian therapeutic procedure (24-37), which is aimed at providing all round well-being of an individual. In the process of Yagya, coarse powder (hawan samagri) made up of dry plant-medicines, as well as selected nutritious and aromatic substances, undergoes transformation into vapor phase, sublimation or decomposition by gradual heating; these phytomedicines spread along with the volatile substances and gases, released by the slow and controlled combustion process in Yagya fire (28). Medicinal phytochemicals, vapors of some essential oils and certain other volatile healthy constituents released in this process impart therapeutic advantage (25, 28).

In addition, frequent oral and nasal inhalation of phytomedicines in medicinal-fumes, generated in Yagya, takes place because of the rhythmic deep breathing exercise (pranayama) and chanting of certain Vedic hymns by the subjects (patients) throughout the duration of the Yagya, which

contributes to the efficient pulmonary administration of phytomedicines. Thus, Yagya is a promising non-conventional method of pulmonary drug administration for plant medicines (24-37).

Vedas recommend performing of Hawan every day, morning and evening, to attain spiritual refinement, mental peace, purification of the mind and environment, as well as treatment of various diseases (31). Ayurveda also recommends nasal route as a preferred mode of administration of drugs for epilepsy (23).

The process of pulmonary drug administration of plant medicines during Yagya is similar to that during Nasya, which is a common purificatory therapeutic procedure in the Panchakarma Therapy of Ayurveda, wherein herbal medicines are administered through the nasal route, in different forms including oil, powder and vapors (38). Nasya primarily affects the urdhvajatrugata pradesha (supra-clavicular region) (39,40). According to Acharya Vagbhatta, nose is one of the most convenient routes to convey medicinal effects to the cranial cavity (39). According to Acharya Charaka, nasya drug usually acts through absorption by the Shringataka marma (a vital spot in the head region situated at the site of the union of the nerves, supplying to the nose, ears, eyes, and tongue); after absorption, the medicine acts on the diseases of the respiratory system, shoulder, neck, etc., and the vitiated Doshas are expelled from the head region (39). Thus, the administered medicine moves up to the Shringataka marma, spreads all over the head, channels of eyes, ears, nose and throat, and removes vitiated Doshas from there (39,40).

The Vedic hymns (Mantras) chanted during Yagya are intense spiritual prayers to the Almighty for the well being of both the self, as well as the entire cosmos. During the chanting of these Mantras, the participants are supposed to continuously meditate on their meaning; thus, this chanting creates a continuous process of meditation and contemplation, which contributes to the positive restructuring of the psyche of the participants (31,41,42).

Several studies have analyzed the effect of meditation as an adjunct intervention for epilepsy patients, and have found encouraging results with regards to improving quality of life, and relieving stress, anxiety, depression, etc. (15-17)

Since past several years, the Department of Ayurveda and Holistic Health (DAHH) at Dev Sanskriti Vishwavidyalaya, Haridwar, Uttarakhand has been practicing Yagyopathy, wherein different herbal preparations of Ayurvedic plant medicines (hawan samagri) have been made for various diseases such as those of digestive system (cholera, dysentery, etc.), fevers (malaria, viral, etc.), respiratory system (cold/cough, asthma, tuberculosis, etc.), diabetes, obesity, joint pain, insomnia, etc., as well as various psychological ailments (30,33). A large number of patients suffering from these diseases have either taken Yagya Therapy at this Department, or taken the disease specific hawan samagri to their home and conducted yagya themselves. Pre and Post Clinical, Pathological and Biochemistry investigations, as well as verbal and written testimonials from these patients indicate encouraging outcomes of Yagyopathy with regards to the treatment of these diseases.

In a recent publication (34), Yagya Therapy was prescribed as a supportive therapy, along with allopathic medicine, to a 65 year old male patient having adult onset epilepsy; encouraging results were observed with regards to preventing the occurrence of seizures and improvement in quality of life. Furthermore, several medicinal plants like Jatamansi (*Nardostachys jatamansi*) (19), Nagarmotha (*Cyperus rotundus*) (19), etc. have shown therapeutic advantage in epileptic seizures.

Yagyopathy, with disease-specific herbal preparation, has been shown to be an effective therapy for the treatment of various other physiological and psychological ailments. Raghuvanshi et al. (2009) (28) administered Yagyopathy to 15 patients of pulmonary tuberculosis in the age group of 15-60 years for 35 to

75 days using an anti-tubercular herbal preparation of Ayurvedic plant medicines. The effects were tested by sequential readings on different clinical physiological, microbiological, hematological, biochemical and pathological parameters, and the results showed encouraging healing possibilities of Yagyopathy for pulmonary tuberculosis (24-26,28,30). Verma et al. (2018) (35) demonstrated the effectiveness of Yagya Therapy in the treatment of Sub-clinical hypothyroidism (SCH). Mishra et al. (2018) (36) showed that Yagya Therapy, as supportive care, improved quality of life in cancer patients.

Looking at the multiple advantages of Yagya Therapy, which include positive restructuring of the psyche of the participants by the chanting of Vedic hymns (Mantras) and meditating on their meaning, exposure to medicinal-fumes of multiple herbs, as well as their efficient pulmonary administration, Yagya Therapy can be an effective treatment methodology for epileptic seizures.

A case report about a male patient, who was suffering from epileptic seizures, as well as other associated ailments, is being presented here. He visited the Out Patient Section of the Department of Ayurveda and Holistic Health at Dev Sanskriti Vishwavidyalaya, Haridwar. In view of the above discussion about epileptic seizures and their management, an integrated approach including Yagya Therapy (using an appropriate herbal formulation - hawan samagri), and some other Ayurvedic treatments like decoction of medicinal herbs, Ayurvedic medicines, dietary restrictions, etc. was prescribed to the patient, and the effectiveness of the same is being presented in this article.

Methods

In the present study, an integrated approach including Yagya Therapy (using an appropriate herbal formulation), and some other Ayurvedic treatments like decoction of medicinal herbs, Ayurvedic medicines, dietary restrictions, lifestyle modifications, etc., was prescribed to a male patient suffering from epileptic seizures.

2.1 Case Report

A 45 year old male patient (height 5 feet 7 inch, weight 74 kg) came to the Out Patient Section of the Department of Ayurveda and Holistic Health (DAHH) at Dev Sanskriti Vishwavidyalaya, Haridwar, in November 2018, with complaint of uncontrolled epileptic seizures and associated ailments; the detailed medical history, reported by the patient, is as follows:

- Patient had been suffering from epileptic seizures since past 13 years; there were irregular episodes of seizures, with at least one seizure episode every 7 to 10 days, and sometimes regular episodes over several consecutive days
- During an epileptic seizure, the condition of the patient became extremely worse; there was temporary loss of memory and body stiffness; after the seizure episode, the patient used to take about 2 to 3 days to become normal again.
- He took allopathic medication regularly for 12 years, but did not get relief.
- Subsequently, over past one year before this visit, the patient started Ayurvedic treatment; however, still there was no significant relief.
- The latest seizure episodes included multiple episodes, which started about 11 days before the present visit; these episodes continued for 5 days, and included 6 to 7 mild seizures, and 1 strong seizure.
- Patient experienced gastric upsets
- His appetite had become low.
- Patient had no past history of diabetes mellitus, hypertension, ischemic heart disease, asthma, hypothyroidism, allergy.
- Patient did not suffer from constipation, and his sleep was normal.

Based on the above mentioned medical history and further discussion with the doctor, the current diagnosis for the patient included epileptic seizures, with associated ailments of gastric upsets, low appetite and loss of memory.

2.2 Therapeutic Intervention

As mentioned above, the patient was suffering from epileptic seizures (Apasmara) and associated

ailments. Hence, an integrated approach including Yagya Therapy (using an appropriate herbal formulation), and some other Ayurvedic treatments like decoction of medicinal herbs, Ayurvedic medicines, dietary restrictions, lifestyle modifications, etc., was prescribed to the patient, with the understanding that the patient had come to the Out Patient Section, and would be taking these treatments at his home.

The prescribed therapeutic interventions were as follows:

2.2.1 Yagya Therapy with hawan samagri (herbal mixture) for epilepsy

Patient was advised to follow the standard protocol of Yagya at home. The detailed protocol has been described in earlier publications (33,37,43,44). Briefly, the procedure included (33,43,44):

- Doing Shatkarma for both internal and external purification (Pavitrakaran, Achaman, Shikhavandan, Nyasa - i.e. spiritual practices for purification), Prithvi Pujan (prayers to Mother Earth), Chandandharan (applying sandalwood paste or roli-red powder on forehead), Guru-avahan (invoking the spiritual guide)
- Followed by - 24 oblations of the herbal mixture (hawan samagri for epilepsy) in the fire, along with the chanting of Gayatri Mantra - specifically Chandra Gayatri Mantra, i.e. Om Bhoo Bhuvah Swah, Ksheer Putraaya Vidmahe, Amrit Tatvaaya Dheemahi, Tannah Chandrah Prachodayaat (30,33,37), with the aim providing peace and tranquility to the mind.
- Followed by - Pranayama and deep breathing for 30 minutes, while sitting near the Yagya

Patient was advised to use copper pot (Yagya kund, in which the fire is generated), mango wood (for generating the fire), ghee (clarified butter made from indigenous cow's milk), and herbal preparation (hawan samagri) prescribed by Department of Ayurveda and Holistic Health (DAH), Dev Sanskriti Vishwavidyalaya, Haridwar.

Since past several years, DAH has been prescribing Yagya Therapy (Yagyopathy), wherein

different herbal preparations of Ayurvedic plant medicines (hawan samagri) have been made in-house for various diseases. With regards to the present study, DAH prescribed a hawan samagri for Epilepsy treatment, which consists of 15 herbs, and is based on the formulation for the same given in reference (33). No metal was used in the herbal preparation. All ingredients were well identified by taxonomist (45), were non-toxic, and could be useful in the treatment of Epilepsy, and the associated disorders (19,33,46,47). Some of the herbs whose effectiveness in the management of epileptic seizure, and associated disorders, has been described in the open literature include: Jatamansi (*Nardostachys jatamansi*) (19), Nagarmotha (*Cyperus rotundus*) (19), etc. Along with the hawan samagri for Epilepsy, patient was also prescribed a common purpose immunity-boosting hawan samagri, based on the formulation for the same given in reference (30,33). Hawan samagri for Epilepsy and common purpose hawan samagri had to be mixed in 3:1 ratio (i.e. 30 gm and 10 gm, respectively); 30 gm cow ghee had to be added to this herbal mixture; and then 24 oblations, along with chanting of Chandra Gayatri Mantra, had to be made in the fire with this mixture.

Yagya had to be done two times daily, i.e. at the time of Sunrise and Sunset. The patient was advised to do Yagya Therapy for 3 months.

2.2.2 Drinking decoction of hawan samagri (herbal mixture) for Epilepsy

Patient was advised to drink the decoction of the hawan samagri for Epilepsy, wherein 20 gm of herbal mixture had to be mixed in 4.5 cups of water (about 100ml per cup); kept overnight; boiled the next morning till 1.5 cups of water was remaining; this had to be divided in two equal parts, and taken empty stomach two times during the day.

2.2.3 Ayurvedic medicines

- Medhavaradhak Churna (herbal mixture for memory enhancement) - half spoon of this herbal mixture had to be taken with half spoon cow's milk, once daily

- Jyotishmati Taila (has medhya action, i.e. brain tonic (48) - 6 to 7 drops of this oil had to be put in a sugar batasha (sweet candy made of sugar) and taken once daily
- Brahmi Ghrit (enhances learning and memory (49) - 2 drops had to be put in each nostril, once daily
- OCEM-5 (extract of five types of tulsi - panch tulsi - for boosting immunity) - 2 drops had to be taken once daily

2.2.4 Dietary advice and restrictions

- Dietary restrictions were prescribed, which included not taking Vata aggravating diet like okra, pea, cauliflower, kidney bean, chick peas, urad dal and brinjal.
- It was advised to take dry fruits (raisin, fig, almonds, walnut) (for providing nourishment to the brain), sprouts, fruits and green vegetables for boosting immunity
- It was advised to keep a fast on every Poornima (full moon night), and meditate on Chandra Devata (Moon God), for providing peace and tranquility to the mind

2.2.5 Other practices advised

- It was advised to do Naad Yog meditation (meditating on soothing meditative instrumental music, which is played daily in Shantikunj and Dev Sanskriti Vishwavidyalaya from 6:00 to 6:15 p.m.)

Results

In the present case study, the outcomes were assessed in a qualitative (subjective) manner based on the doctor's pre-examination, and, patient's experiential feedback.

After the initial visit in November 2018, the patient continued with the prescribed integrated approach including Yagya Therapy at his home, and visited DAHH again in January 2019, about 54 days after the first visit. The feedback provided by the patient is as follows:

- He had been doing Yagya regularly, one time during the day
- He had been drinking the prescribed decoction twice a day

- After Yagya, he had been doing Pranayama for half an hour daily
- He had also been taking Ayurvedic medication
- Before starting the integrated approach including the Yagya Therapy (prescribed in the present study), the patient used to experience seizure episodes, at least once every 7 to 10 days
- After starting the integrated approach including Yagya Therapy, the patient did not experience any seizure episode up to the present visit in January 2019, i.e. for about 54 days since the first visit
- Earlier, the patient used to feel vibration in the entire body; after starting the integrated approach including Yagya Therapy, the patient experienced improvement in this condition as well

Discussion

The present study illustrates the potential of an integrated approach including Yagya Therapy for the treatment of epileptic seizures.

As discussed earlier, according to Ayurveda, a healthy human body is supposed to have a relatively stable equilibrium (congenial homeostasis) of Dosha (psycho-biological rhythm - Vata, Pitta, Kapha), Dhatu (body tissues) and Mala (excreta) (20); Acharya Sushruta defines health as an equilibrium of Dosha (psycho-biological rhythm), Agni (digestion and metabolism), Dhatu (body tissues), Malakriya (excretory function), as well as the well being of soul, senses and mind (20). Imbalance in this equilibrium leads to disease. Treatment of disease involves procedures for purifying the biological system by removing the vitiated elements from the entire body, restoring the above equilibrium, and thus causing disease prevention, as well as health promotion (21).

Venkataraman et al. (22) have mentioned that as per Ayurvedic texts, Apasmara is a disease that has similar symptoms as those found in epilepsy. The word Apasmara is made up of two words - Smara means memory, which includes memory, intelligence and consciousness; and, Apa means loss

– thus, loss of consciousness is one of the important signs in Apasmara (22). As per Ayurvedic texts, epileptic seizures have been classified into four major groups caused by the derangement of the three humours (doshas), i.e. Vata, Pitta, and Kapha, and the fourth variety caused by their combined effects (Sannipata) (23), and hence the medicinal herbs that balance the respective doshas, are used in the Ayurvedic treatment of epileptic seizures.

In Yagya Therapy, the hawan samagri (mixture of medicinal herbs) contained herbs, which were chosen based on careful review of Ayurvedic pharmacology, modern pharmacology, and scriptural indications. The beneficial properties of some of the herbs with regards to the management of epileptic seizures, and associated disorders, are as follows:

- Giloya (*Tinospora Cordifolia*) and Rose Flower (*Rosa centifolia*) pacify all the three Doshas (i.e. Vata, Pitta, Kapha), Mustard seeds (*Brassica nigra*) and Black Pepper (*Piper Nigrum*) have Kapha and Vata pacifying properties (45,50).
- Brahmi (*Centella asiatica*) has Medhya, Balya and Rasayan properties, i.e. it provides rejuvenation and enhances memory (49,50).
- Nagarmotha (*Cyperus rotundus*) and Black Pepper have Deepan Pachan properties (50); Deepan Pachan drugs are administered for enhancing the digestive fire (51,52) and digestion of the ama dosha (undigested toxins of the body that are responsible for the blockage of micro-channels).
- Jatamansi (*Nardostachys jatamansi*) (19), Nagarmotha (19,53), Tagar (*Valeriana wallichii*) (19), Ashwagandha (*Withania Somnifera*) (53), and Mulethi (*Glycyrrhiza glabra*) (53) have known anti-convulsant properties. Bansal et al. (19) have studied the applicability of hawan for the treatment of epilepsy, and have described the utility and probable mode of action of various medicinal herbs, like Jatamansi, Nagarmotha, etc. that have known anticonvulsant activity.

Thus, the ingredients of hawan samagri have properties of pacifying the three Doshas, as well as

providing nourishment, rejuvenation, and memory enhancement. Their vapors help in the treatment of epileptic seizures (19,33,46,47).

In Yagya Therapy, ghee is essentially added to hawan samagri. According to Ayurveda, ghee enhances the digestive fire (agni), and nourishes ojas (the subtle essence of the body tissues - dhatus) (54). It helps in memory enhancement and strengthening of the nervous system (54). It also has Vata and Pitta pacifying properties (54). Because of its yogavahi guna, it has the property that without losing its own qualities, it can incorporate the qualities of the herbal medicines added to it; furthermore, it transports the same to deeper body tissues through its lipophilic action (54,55). According to modern research findings, lipid nanoparticles have been shown to enhance drug delivery through the nasal route (26,56).

In the process of Yagya, hawan samagri made up of dry plant-medicines, as well as selected nutritious and aromatic substances, undergoes transformation into vapor phase, sublimation or decomposition by gradual heating; these phytomedicines spread along with the volatile substances and gases, released by the slow and controlled combustion process in Yagya fire (28). Medicinal phytochemicals, vapors of some essential oils and certain other volatile healthy constituents released in this process impart therapeutic advantage (25,28).

In addition, frequent oral and nasal inhalation of phytomedicines in medicinal-fumes, generated in Yagya, takes place because of the rhythmic deep breathing exercise (pranayama) and chanting of certain Vedic hymns by the subjects (patients) throughout the duration of the Yagya, which contributes to the efficient pulmonary administration of phytomedicines. Thus, Yagya is a promising non-conventional method of pulmonary drug administration for plant medicines (24-37).

Administration of multi-herbs through oral administration can have limitations such as first-pass metabolism (36). In case of nasal drug

administration, absorption takes place from the nasal cavity into the systemic circulation, and the first-pass metabolism is avoided (36,56). Furthermore, the blood-brain barrier is also avoided, and the medicinal drugs can be transported directly from the nasal cavity into the brain (56). Thus, nasal administration of herbal medicines through Yagya Therapy may be considered as an important aspect with regards to the therapeutic advantage observed in the present study.

The process of pulmonary drug administration of plant medicines during Yagya is similar to that during Nasya, which is a common purificatory therapeutic procedure in the Panchakarma Therapy of Ayurveda, wherein herbal medicines are administered through the nasal route, in different forms including oil, powder and vapors (38). Nasya primarily affects the urdhvajatrugata pradesha (supra-clavicular region) (39,40). According to Acharya Vagbhatta, nose is one of the most convenient routes to convey medicinal effects to the cranial cavity (39). According to Acharya Charaka, nasya drug usually acts through absorption by the Shringataka marma (a vital spot in the head region situated at the site of the union of the nerves, supplying to the nose, ears, eyes, and tongue); after absorption, the medicine acts on the diseases of the respiratory system, shoulder, neck, etc., and the vitiated Doshas are expelled from the head region (39). Thus, the administered medicine moves up to the Shringataka marma, spreads all over the head, channels of eyes, ears, nose and throat, and removes vitiated Doshas from there (39,40).

The Vedic hymns (Mantras) chanted during Yagya are intense spiritual prayers to the Almighty for the wellbeing of both the self, as well as the entire cosmos. During the chanting of these Mantras, the participants are supposed to continuously meditate on their meaning; thus, this chanting creates a continuous process of meditation and contemplation, which contributes to the positive restructuring of the psyche of the participants (31,41,42). The chanting of Gayatri Mantra causes beneficial effects with regards to various physical and mental conditions

like attention, concentration, etc. (31,41,42,57-60)

During Yagya, the patient has to sit near the Yagya fire for a specified amount of time; this way, the patient experiences the bright light and heat of the fire, which have their own therapeutic advantages such as relief from depression caused by bright light (61,62), sudation (swedan) caused by heat, etc.; according to Ayurveda, swedan (sudation) has actions like stambhaghna (relieves stiffness), swedakaraka (creates perspiration), and, gauravaghna (cures heaviness) (63).

Yagya has also been found useful in purifying the indoor environment. Nautiyal et al. (2007) (64) demonstrated 94% reduction of bacterial counts after yagya in a closed room; several pathogenic bacteria were found absent in the open room even after 30 days. Saxena (2006) (65) (did experiments in collaboration with Central Pollution Control Board, Delhi) studied the effect of yagya on air microflora, bacteria and pathogens; in indoor experiments, she found significant reduction in pathogens, bacteria and microflora, even 2-3 days after yagya. This environment purifying effect of Yagya must also have contributed to the creation of a healthy environment in patient's home and the observance of the encouraging results seen in the present study.

Patient took the decoction of the hawan samagri for epilepsy, twice daily. As described above, the herbs in the hawan samagri for epilepsy have properties that pacify the three Doshas, as well as provide nourishment, rejuvenation, and memory enhancement. Thus, the decoction of the hawan samagri must have provided these therapeutic benefits as well.

Patient was advised to do Pranayama and deep breathing for 30 minutes, while sitting near the Yagya. The patient did Pranayama for about 30 minutes daily; this must have resulted in a greater intake of the medicinal fumes generated during Yagya, and hence an enhancement in the therapeutic benefits. Furthermore, Pranayama is known to have several other therapeutic benefits that would have

contributed to the beneficial results observed in the present study. Anulom Vilom Pranayama can cause enhancement of the ventilation and oxygenation of the paranasal sinuses (66). Pranayama / Alternate Nostril Breathing significantly influences the parasympathetic nervous system (67). Slow yogic breathing technique produces beneficial effect on cardiovascular and autonomic variables (68). Slow Pranayama improves pulmonary function, and results in relaxed state of mind, better concentration, and improved lung ventilation (69).

The ayurvedic medicines prescribed to the patient had memory enhancement and immunity boosting properties.

The dietary recommendations prevented taking of Vata aggravating and hard to digest diets, and recommended taking food items that provide nourishment to the brain and boost the immunity. The recommended fasting and meditation practices provide peace and tranquility to the mind.

During initial visit, the doctor talked to the patient about his condition, and provided both clinical and motivational guidance; the purpose was to instill confidence in the patient that his condition can be improved, and he has to himself take responsibility of bringing about this change by diligently following the prescribed treatment and guidelines. This guidance must have contributed in providing the observed relief.

It is noteworthy that the present study was done in OPD (Out-Patient Department) setting, wherein the patient was prescribed the therapy, and was required to do Yagya and follow other therapeutic procedures at his home. Such a setting has obvious limitations with regards to following the prescribed procedure and dietary restrictions, as well as taking medications, etc.; however, the patient still reported notable benefit. Thus, the present study shows encouraging result with regards to the effectiveness of integrated approach including Yagya Therapy in the treatment of epileptic seizures. There is definitely a need for further in-depth quantitative

study to establish the mode of operation of this integrated approach in the light of modern scientific understanding.

Conclusion

A case report about a male patient, who was suffering from epileptic seizures since past 13 years, as well as other associated ailments has been presented in this article. The patient was prescribed an integrated approach including Yagya Therapy (using an appropriate herbal formulation - hawan samagri), and some other Ayurvedic treatments like decoction of medicinal herbs, Ayurvedic medicines, dietary restrictions, etc. Before starting the integrated approach including Yagya Therapy, the patient used to experience seizure episodes, at least once every 7 to 10 days; however, after starting the integrated approach, the patient did not experience any seizure episode up to his second visit, i.e. for about 54 days. He also experienced relief in other associated ailments like vibration in the entire body. Thus, the present study shows encouraging result with regards to the effectiveness of integrated approach including Yagya Therapy in the treatment of epileptic seizures.

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Compliance with ethical standards

Informed consent was obtained from the patient.

Conflict of interest

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