



Review Article

Epilepsy in Pregnancy and Role of Unani Medicine: A Review

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A B S T R A C T

Epilepsy in classical literature is termed as Saraa' or Mirgi. It is a group of disorders characterized by unpredictable seizures. Other symptoms are loss of awareness, disturbance of movement, sensation, mood, or other cognitive functions. Individuals with few medical or physiological conditions are more susceptible to it; pregnancy is one of them with a prevalence of 0.5% to 1%. Although pregnancy is not among the causes of epilepsy, but a pregnant woman who has epilepsy is more prone to seizures. Also, serum level of antiepileptic drugs falls in pregnancy due to various reasons like altered physiology and pharmacokinetics etc. Hence, high doses of AEDs are required. Studies show that none of the anticonvulsants are absolutely safe in pregnancy. Therefore, there is a need to search for the availability of safer alternatives.

According to Unani scholars, the basic pathology behind it is the obstruction in any region of the brain or nervous tissue that helps in the motor and sensory function of various organs. Some of the factors causing obstruction are kasrat e sauda, kasrat e balgham, ghilzat e dam, etc.

Medicines have been mentioned in Unani literature that have potential to serve for seizure control, reducing complications caused by AEDs and for treating epilepsy during the episode and seizures free period. Local and oral use of Musakkin, Dafa'e tashannuj, mulattif, mushil, muqawwi e dimag, muqawwi e aasab, muhallilat etc has been described to be used in epilepsy.

In this paper, an attempt has been made to review the literature including pathology, etiology and availability of drugs to be used in epilepsy during pregnancy in Unani system of medicine.

Keywords: Epilepsy, Pregnancy, Saraa', Unani Medicine, AEDs

Epilepsy is a chronic, group of disorders characterized by recurrent unpredictable seizures. Seizure is a temporary physiological dysfunction of the brain, in which neurons produce excessive electrical discharge.

Individuals with few medical or physiological conditions are more susceptible to it. Pregnancy is one of them with a

prevalence of 0.5- 1%.¹ Pregnancy does not cause epilepsy, but a pregnant woman who has epilepsy is more prone to seizures in 15-32% cases as oestrogen and progesterone can alter the neuronal excitability and may affect the seizure threshold.²

The fall in the level of serum concentration of anticonvulsants



in pregnancy are due to change in the physiological condition of the body like delayed gastric emptying, reduced absorption, increase protein binding, nausea, vomiting, increase in plasma volume, hepatic metabolism, and renal clearance, etc.³⁻⁵ 30% patients of epilepsy during pregnancy has a family history for the same.

Some of the causes of exaggeration of episodes of epilepsy in pregnancy include Intracranial mass lesion i.e. Arteriovenous malformations meningiomas enlarged during pregnancy, Antiphospholipid syndrome, Eclampsia, Cerebral Vein Thrombosis (CVT), Thrombotic Thrombocytopenic Purpura (TTP), Subarachnoid hemorrhage, Drug and alcohol withdrawal, Hypoglycemia-diabetes, hypoadrenalism, hyperpituitarism, liver failure, Hypocalcemia-hypoparathyroidism, Hyponatremia-hyperemesis, pre-eclampsia, Infections, Postdural puncture, Gestational epilepsy-episodes confined to pregnancy, Some other precipitating factors are increase cerebral dysrhythmia, over-breathing, various photic stimuli, several sounds, etc. But no evidence clearly correlates the exact cause of epilepsy in pregnancy.

It has been reported that the use of antiepileptic drugs (AEDs) by pregnant women may be associated with an increase in adverse outcomes such as miscarriage, antepartum, and post-partum hemorrhages.⁶ Also, it is clear from various other studies that none of the anticonvulsants are absolutely safe in pregnancy. It leads to maternal fear and concern about the effect of AEDs on fetus, which may lead to discontinuation or reduction in the dose of AEDs by mother, therefore, increasing the woman's risk of seizures and sudden death due to epilepsy in pregnancy (SUDEP). Many AEDs interfere with the folic acid metabolism and lead to fetal anomalies like cleft palate/ lip, cardiac defect, Neural Tube Defect (NTD), etc with the incidence rate of around 5%.⁵ Risk of having epilepsy in an infant born to mother with seizure disorder is 4 times more to the normal one.

Around 20% cases of epilepsy in pregnancy are likely to increase in frequency and deteriorate. Risk of maternal mortality increases 10 folds due to aspiration or by seizure itself.⁷ Other possible adverse outcomes are pre-eclampsia, preterm labor, stillbirth, PPH, IUGR, increase chances of cesarean section, Status epilepticus, etc. Reproductive functions impose negative impact on women with epilepsy by decreasing fertility, increasing risk of PCOS, menstrual disturbances, and altered AED metabolism.⁸

Epilepsy is a complex process involving physical and neurological factors. It can be reduced in many ways like proper planning for conception and keeping regular check on risk factors for epilepsy during pregnancy etc. Most of the times, medications are required with other measures to further assist the patient and avoid episodes of seizures.

AEDs or Anticonvulsants are medicine used for managing epilepsy and controlling its symptoms (i.e., suppression of seizures). Glutamate have an important role in the development and expression of seizures. Therefore, glutamate antagonist drugs are also used in controlling seizures. Mainly 3 major classes of mechanism of AEDs are recognized. These are modulation of voltage-gated ion channels, enhancement of gamma-aminobutyric acid (GABA)-mediated inhibitory neurotransmission and the last is the alteration of glutamate-mediated excitatory neurotransmission. Targets of currently available AEDs are voltage-gated sodium channels, voltage-gated calcium channels, voltage-gated potassium channels, inhibitory neurotransmission, excitatory neurotransmission and other putative targets like enzyme carbonic anhydrase and components of synaptic vesicle release pathways etc.⁹

Epilepsy has been described in Unani literature under the name of Saraa' or Mirgi. Many causes of this condition have been described according to different Unani scholars. Majority of them believes that the basic pathology behind epilepsy is the obstruction in any region of the brain or nervous tissue that helps in motor and sensory function of different organs. There are number of factors causing obstruction like kasrat e sauda, kasrat e balgham, ghilzat e dam, toxic state etc. Unlike other Akhlaat, ghalba e safra alone rarely induce epilepsy.^{10,11} Researches showing changes in physiological conditions of a female during pregnancy supports the hypothesis of 'obstruction in the brain and other nerve tissue' as a cause of epilepsy during pregnancy as this obstruction is supposed to be due to imbalance of quantity and quality of Akhlaat.

Some scholars also believed that it occurs due to riyah e ghaleez.¹¹

In the management measures, women should be advised to take proper diet, sleep, physical and mental rest (to balance asbab e sitta zaruriya).

To avoid epilepsy, its episodes and consequences, many Unani drugs are mentioned in classical literature that can be used like Aftimoon, Bisfaij, Sumbul ut tib, Jundbedastar, Ustokhudoos, Anisoon, Asrol, heel khurd, etc due to various properties of their active constituents. It is mentioned in a book 'Sharah Asbab' that according to statement of a Unani scholar 'Asqandar', taskheen e raas with bazrulbanj, qust siyah, panba dana, kunjad siyah, maghz tukhm baidanjeer are also very helpful at the time of episode when patient is unconscious. It is also mentioned that Qutoor of Aab e pyaz surkh is useful in reducing intensity of epilepsy.¹¹

Unani drugs that have properties like Musakkin, Mulattif, Mushil, Muqawwi e dimag, Dafae tashannuj, Muqawwi e Aasab, Muhallilat etc can be helpful in managing epilepsy as they can treat the cause of epilepsy. It is known that

poor mental and physical health is also one of the causes of seizure. Musakkinat and Mukhaddirat, Muqawwi e dimag drugs can decrease incidence due to their specific properties.^{10,11}

Some studies show that Calcium channel and Sodium channel play a significant role in epilepsy and also act as therapeutical drug targets for epilepsy. Unani medicines like *Lavandula stoechas* and *Lavandula officinalis* act as antiepileptic by blocking calcium channel.¹²

Although there is a long list of AEDs mentioned in Unani literature. Many Pre-clinical in vivo and in vitro studies describing potential embryotoxicity have been conducted for certain herbal medicines. An extensive search conducted by Jurgens in 2003 revealed a few studies that scientifically evaluated safety of herbal medicines. It is found that Ginkgo is the herbal medicine with no teratogenic or embryotoxic effects reported.¹³ So, it can be used in women with epilepsy during pregnancy. But there is an intense need of detailed study of mechanism of antiepileptic or anticonvulsant constituents of Unani medicines and their safe use in women with epilepsy during pregnancy to avoid unfavorable maternal or fetal consequences.

Some Plants with Anticonvulsant Properties Mentioned In Unani Literature

Unsul (*Allium cepa*), Ustukhudoos (*Lavendula stoechas*), Anisoon (*Pimpinella anisum*), Safed ral (*Shorea robusta*), Suranjaan talkh(*Colchicum luteum*), Jausheer (*Ferula galbaniflua*), Ajwain khurasani (*Hyoscyamus albus*), Gulnar (*punica granatum*), Hildeet (*Ferula foetida*), Panba dana (*Gossypium herbaceum*), Jundbedaster (*Castoreum*) are some drugs among the long list of Unani drugs with anticonvulsant property.¹⁴

Method

Various review papers, experimental studies, and Unani literature are extensively reviewed and explored to compile maximum information about the pathology, etiology of epilepsy during pregnancy and availability of drugs in Unani system of medicine and their antiepileptic properties or anticonvulsant properties.

Discussion

More than 50 plants have shown some anticonvulsant properties. some of them are being used to treat epilepsy.¹⁵ It is very difficult to collect all antiepileptic medicines in one paper, so some of them, which are commonly used are reviewed in here. Maximum of these data are based on animal studies. But none of them has been developed into a standard medication for the treatment of seizures specially in pregnancy. Therapeutic potential of Unani medicines and their bioactive compounds have been the subject of extensive research.

Any medicine used in the management of epilepsy during pregnancy must provide evidence-based information on benefits to treatment and the risk to mother and baby. It will ensure obstetricians and patients make right choice about medicines. Literature review and exploration reveals that very limited data is published, enlightening the authenticity of usage of Antiepileptic Unani medicine in the pregnant state. Scientific studies and clinical trials are very limited, and formal clinical trials are needed to assess their efficacy.

Conclusion

Management of epilepsy in pregnancy is complicated and challenging due to changing physiology and pharmacokinetics. Studies already show that no AED till date is 100% safe in pregnancy. Unani anticonvulsant medicine may also have the potential to interact with the standard AED therapy leading to reduced efficacy and increased complications during pregnancy increasing the risk to both mother and fetus. Keeping in mind the adverse effect of available treatment of epilepsy in pregnancy in modern as well as alternative medicine, a detailed review focusing on the possible role of Unani anticonvulsant medicines in cases of epilepsy in pregnancy is needed. Also, some studies should have been done to introduce the use of known Unani anticonvulsants in a form that causes minimum harm to mother or fetus for e.g., Ood-e-saleeb (*Paeonia emodi*) is a good AED known, but due to its adverse effect, it is not used in pregnant in present time. In-vivo, in vitro studies, clinical trails make them evidence-based medicines and helps in discovering Unani medicine which in a long way leads to decrease the rate of maternal and fetal complications caused by AEDs used nowadays. There is hope for development of treatment that not only manages episode of seizures but also treats the cause and cure it.

Conflict of Interest: None

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