

## Awareness and Current knowledge of Neurogenerative disorders

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**Abstract:** Although the brain has numerous functions, there are issues related to it, such as depression, anxiety, stroke, and many more, which we covered in this study. In this essay, we covered a variety of therapeutic plants, their possible phytochemical components, and how they can treat neurological issues. Plant derivatives can potentially treat these memory-related problems by their extract and decoction. Therefore, many of days favor herbal and traditional medicine over Western medicine.

**Key words:** CNS problems, functions of brain, role of herbal plants

### Introduction

For the primary care of health & problems associated with central nervous system all these primary factors in which acute & chronic problem involve all are treated by using traditional products. Allopathy drug used but due to their side effects people know give their attention to traditional medicine & many searches are done to identify the phytoconstituents which possess lots of medicinal activities. These herbal plant derivative medicine effective against CNS problems like epilepsy, illness related to mental, stigma & discrimination health related.



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Almost ten million individual effected by chronic disorder of brain which related to epilepsy, other brain related problem like stroke, meningitis, Alzheimer's & Parkinson all are brain related issues due to all these movement problem, speaking problem, breathing problem, memory & mood problem occurs (Kokate 1999, Gupta 2005). These neurological problems influence the spinal cord & brain (Lal and Singh 2009). Ethno-pharmacology & ethno-medicine products are rich of natural sources which shows effective response against these problems (Hasani-Ranjbar, Larijani et al. 2008). Natural plants & herbs have lots of potential to cure the CNS problems. So, ethno-medicine & pharmacological component effective to protect those people who suffered with this neurological problem (Gohil, Patel et al. 2010). The tissues of the plants possess medicinal values which influence on body physiological action. Usually the alkaloids in the form of nitrogen, oxygen, hydrogen & carbon, fatty oil, essential oil, glucosides, tannins, gums & mucilage all are existing in natural plants. From the ancient time people use these natural products to cure the ailments (Soni, Siddiqui et al. 2012). By identifying plant component & their mode of action it become easy for all to understand that those plants are effective or not & in which type of illness it is recommended.

### **Functions of brain**

Brains perform lots of function, different parts of brain show several functions, in daily life all the activities include mentally & physically which perform by us all depend on the brain. Any problem, injury or disease when occurs in brain then several difficulties & disease occurs as we already discussed speech related problem mental problem breathing problem all draw backs occurs due to the result of brain injury. Different parts of the brain in which includes cerebellum, brain stem & cerebral cortex all shows different function. Parietal lobe perform function includes for the perception of touch, for the attention of visual, involvement in voluntary actions, objects manipulating, allows to understand the various senses. The function of occipital lobe in vision is significant, role of cerebellum in memory, voluntary movement coordination, equilibrium & balance. In the function of frontier lobe includes motor activities, involvement in the association of word, the word we speak it makes its meaning, control the language expressive, control the response related to emotion, judgement & consciousness. Ability of hearing, acquisition of memory, visual perception & objects categorization all are the functions of temporal lobe. In the function of brain stem includes function associated with vestibular, sleep ability, alertness level, digestion, blood pressure, sweating, temperature and response associated with startle (Lehr, Browning et al. 1980).

### **Stroke & their effects**

Stroke is a medical condition related to brain disorder usually this disorder occurs due to rupturing & bleeding of vessels of brain or it also occurs when proper oxygen supply does not occur to the tissues of brain. In the united states stroke is 5<sup>th</sup> leading cause of death. From the world report it was resulted that almost 7 lac people are affected by this problem. Because without proper supply of oxygen the cells & tissues of brain damaged. Stroke have different types in which includes transient ischemic attack, ischemic stroke, embolic stroke, sub-

arachnoid stroke & hemorrhagic stroke. Usually due to stroke several symptoms appear in which includes sudden headache, dizziness, coordination problem & loss of consciousness, sudden headache, difficulty in walking, confusion, problem related to vision, confusion, speech slurring, difficulty in speaking, paralysis & weakness & numbness in arm, legs & face. In case of stroke some specific symptoms associated with men & some show their association with women, in women common symptoms include hallucination, pain, seizures, nausea, vomiting, general weakness, shortness of breath, fainting, disorientation, confusion & behavioral changes like agitation. In men common symptoms include body affected on the one side & weakness of muscle, face drooping, smile problem & speech difficulty. Usually the causes of stroke due to which the chances of these problems increase include inactivity, consumption of alcohol, diet in which salty diet, cholesterol, trans & saturated fat, use of tobacco, family history, age, sex and history of health all are causative agents. Role of natural plants & their derivatives, medicinal herbs are very effective in the cure of stroke & their management (Bloch, Jian et al. 2009). From the all-natural herbs, the role of ginkgo biloba is very effective against stroke (Nada, Tulsulkar et al. 2014).

### **Therapeutics representative & traditional medicine for stroke**

With the development of cell biology, the chances of discovering signaling pathways are more. So, due to discovering of these pathways the chances of complication of brain will be reduced. To sort out these problems number of herbal & Chinese medicine effective therapeutically which target the signaling multiple pathway. The network of brain system regulates by using herbal Chinese medicine. The use of these traditional medicine effective from thousand of years because of the presence of important phytochemical constituents which show lots of potential to cure these problems. Chinese traditional medicine effectively manage the problem related to stroke like mouth & tongue deviation, consciousness loss, speech slurred, hemiplegia. As we already discussed the causes of stroke are many but some factors which have more potential to cause this problem include psychological & emotional factors, diet & lifestyle. Usually the stroke is divided into three types like sequela, fu stroke zhang, meridian stroke. Usually the meridian stroke is a mild situation & critical situation is fu zhang stroke. Usually due to meridian stroke ischemic transient stroke & hypertension develop. For the cure of meridian stroke, the effective decoction of natural plants. Two other sub-types of fu zhang stroke include deficiency syndrome & excessive syndrome are treated by using the decoction of wan niuhuang angong & guoteng lingjiao and the decoction of shenfu is very effective in this case. To reduce the symptoms related to the deviation of mouth is treated by using the decoction of jiejudan sequela & for the treatment of neurological defects the decoction of huanwu buying is effective. So, by using all these traditional plant derivative decoctions effective not only for transient ischemic attack but also effective in case of hypertension (Zhang, Du et al. 2004, ZHAO, LIU et al. 2010, Wei, Teng et al. 2013). For the research it was assured that by using these phytochemicals have potential to cover the brain related problem (Hao, Wu et al. 2012, Wen, Liu et al. 2012, Shen, Chen et al. 2014, Yang, Ren et al. 2014).

**Neuro-protective herbs**

The derivative of plants & their extract has more potential to sort out health related issues as compared to synthetic products because these chemical products shows side effects (Bloch, Jian et al. 2009, Hoch, Homonoff et al. 2013). For live-stock & primary health care almost eighty percent people of developing countries depends on natural plants medicine to cure this problem (Nada, Tulsulkar et al. 2014). So, when we talk about central nervous system related problems then lots of traditional plants present which effective against these problems like anxiety, stroke, Alzheimer's, memory issues & many more. Lots of organic chemicals present in herbal products includes terpenes, tannins, saponins, glycosides, flavonoids, alkaloids, sterols & fatty acid. From the recent years the researcher area of interest are neuro-protective plants & they do number of experiments on it due to their positive effects related to stroke & brain issues. In Asian countries almost 120 plant derivative medicine are prepared which effectively used to cure out central nervous system related problems (Delfan, Bahmani et al. 2014). Various medicinal plants are effective against stroke & neurodegenerative problem(Gong and Sucher 1999). Some of important plant description are given below:

**Loranthus longifolia Jacq**

The use of this plant effectively seen in west south china for the cure of CNS problems & this neuro-protective activity confirmed by testing it on NG10815 cells. The aqueous extract of this plant is effective & possess neuro-protective characteristics. The important component which shows these activities are flavonoids, alkaloids & steroids. Usually this plant present in Africa (Yellamma 2017).

**Aconitum**

For panic & fear it is effective & best remedy due to present of component aconite. The cultivation of this plant seen in Nepal & Himalayas of Kashmir & maximum 3600m altitude. The root of this plant effective for neuralgias & nervous disorder used as sedative & dropsy. The roots of this plant contain several phytochemical component which are effective in this case includes bixaconitine, indaconitine, chasmaconitine, alkaloids & pseud-aconitine. The effectiveness of this plant relay on hypaconitine, mesaconitine, diester, alkaloids & aconitine(Calabrese, Gregory et al. 2008).

**Panax ginseng**

The root of this medicinal plant is very effective neuro-protective, one of important component ginsenoside is good for that purpose. From the many experiments & research confirmed the medicinal activities of ginseng. The potential of this plant observed against multiple sclerosis, amyotrophic lateral sclerosis, huntington's illness, neuro-degenerative, Alzheimer's disease, Parkinson's & lateral sclerosis. The use of ginseng observed from 2000 years ago & effective as anti-depressant, anti-anxiety & sort out cognition related problem(Singh 2008).

**Hyoscyamus niger**

Hyoscyamus niger applicants areas in medicinal field is dementia, meningitis & epilepsy. The effective remedy of this plant is hyoscyamus which effective for mental related problems (Habtemariam 2016). Usually the cultivation of this plant seen in Europe. It possesses analgesic & sedative characteristics. Alkaloids tropane, scopolamine & hyoscyamine are effective component of this plant.

**Strychnos nux vomica**

It is a medicinal plant & the seeds of this plants effectively used for the preparation of drugs. Effectively used in case of depression & nerve condition. the dried seeds of nux vomica possess two important components like brucia & strychnia alkaloids. This plant effective for those people who are under stress. The occurrence of this plant seen in east south Asia. The potential component of this plant is brucine (Kiran, Priya et al. 2018).

**Somniferum papaver**

The poppy seeds & opium are effective part of the plant & derived from somniferum papaver. Also, good source of semi & natural synthetic narcotics. It is also good & effective source of benzyl-isoquinoline alkaloids like sanguinarine, codeine & morphine. To cure the pain narcotics are effectively used & cultivation of this plant seen in Mediterranean region. The active component of this plants is oripavine, papaverine & noscapine(Ong, Farooqui et al. 2015).

**Cassia occidentalis**

From the research it was confirmed that these plants effective in case of sleeping & anxiety problem. The fruit & aqueous extract of this plant effective in case of anxiety. It also possesses anti-depressant activities & effective in case of gout, paralysis & rheumatism. The cultivation of this plant mostly seen in south Asia (Sahoo 2018).

**Ferula asafetida**

Ferula asafetida I & oleo resins gum effectively used as neuro-protective agent. The used of asafetida observed as stimulant & sedative. In Indian medicine system this plant effectively used in Ayurveda system (Jehangir, Nagi et al. 2010, Mahendra and Bisht 2012). The occurrence of this plant seen in SaudiArabia& Nepal. Effective part of this plants is root, rhizome & dried latex. The important component of this plant which effectively used are ferulic acid & carbohydrates.

**Embilica officinalis**

This plant effectively cures the health-related issues like hyperactivity deficit order, depression, restlessness, aggressive reactions, irritability, anxiety, fatigue & memory loss in all cases embilica officinalis is effective. It is commonly known as amla & this plants have lots of medicinal characteristics it helpful in case of vertigo, fatigue, insomnia, migraine, throbbing pain & pulsing, headache & burning sensation. Fresh & dried fruit is effective. Active component of this plants includes gallic acid, ascorbic acid, poly-phenol & emballicanin.

**Bacopa monnieri**

The extract of this plant effectively is used as neuro-degeneration. Their extract decoction & supplement effective against brain health, anxiety & memory also in case of Alzheimer's disease, epilepsy. Also helpful in the4 reduction of anxiety, & attention related disorder. The dry extract of this plant effective in cognitive functions(Wong, Kadir et al. 2012). Occurrence of this plant seen in eastern India. The import phytocomponent of this plant are bacosides, tri-terpenoids & saponins(Ratheesh, Tian et al. 2017).

**Medicinal plants list against neurodegenerative problem:**

Plant species	Family	Geographical distribution	Parts used	Plant activity
Hyoscyamus niger	solanaceae	Europe	Seeds, leaves & flower tops	hypnotic
Strychnos nux-vomica	loganiaceae	East south Asia	seeds	paralysis
Papaver somniferum	papaveraceae	Europe	seeds	narcotic
Cassia fistula	caesalpinaceae	East south Asia	Pulp of fruit	epilepsy
Cassia occidentalis	caesalpinaceae	East south America	Pulp of fruit	hysteria
Biophytum sensitivum	oxalidaceae	Nepal	leaflets	insomnia
Annona muricata	annonaceae	Cuba	leaves	sedative
Anacardium occidentale	anacardiaceae	India	Leaf, seeds & fruit	insanity
Bacopa monnieri	plantaginaceae	India eastern	Whole plant	insanity
Annona squamosa	annonaceae	America	Fruit	depression
Valeriana officinalis	caprifoliaceae	Europe	root	sedative
Ferula asafoetida	Apiaceae	Iran	Resins & gum	epilepsy
Evolvulus alsinoides	convolvulaceae	Asia east	Whole plant	psychotropic
Emblica officinalis	euphorbiaceae	India	fruit	epilepsy
	solanaceae	North America	Flower & seeds	Relation induce

Datura metel				
Acorus calamus	Acoraceae	Siberia, Russia & Asia central	rhizome	Shows neuro-protective response
Aegle marmelos	Rutaceae	Srilanka & India	Fruit, bark & leaf	Depression & anxiety
Avena sativa	Poaceae	Africa & Eurasia	seeds	Sort out nervous related problems
Rauvolfia serpentina	Apocynaceae	Western & eastern ghats	root	anxiety
Loranthus ferrugineus	Loranthaceae	Africa	Aqueous extract	Increase the power of brain
Aconitum napellus	Ranunculaceae	Europe	seeds	neuralgia
Panax ginseng	Araliaceae	Russia	root	Stimulant(JACK)

#### Medicinal plants in case of schizophrenia:

Plant species	family	Part used	Chemical composition
Catharanthus roseus	Apocynaceae	Dried roots of plant	Vincristine, vinblastine, indole dimeric, lochnerine, ajmalicine, alkaloids, indoline & indole
Rauvolfia serpentina	Apocynaceae	Root in dried form	Serpentine, ajmaline, reserpine & alkaloids indole
Canscora diffusa	gentianaceae	Whole fresh plant	Xanthones & amyryin beta
Datura metel	solanaceae	Whole dried plant	Flavonoids, scopolamine, hyoscyamine & alkaloids of tropane (Rajani and Prasad 2007, Madhava Chetty, Sivaji et al. 2008)

#### Medicinal plants used in Alzheimer's disease:

Plant species	family	Part used	Chemical composition
Melissa officinalis	Labiatae	Plants fresh leaf	Lutiolin
Salvia officinalis	Labiatae	Plants fresh leaf	Cineole thujone a &

			b
Centella asiatica	Apiaceae	Root fresh	Aciaticosides
Catharanthus roseus	apocynaceae	Root dried	Vinblastine & vincristine
Ginkgo biloba	Ginkgonaceae	Leaf dried	Ginkgolides (Muruganandam, Ghosal et al. 1999, Rajani and Prasad 2007, Singhal, Naithani et al. 2012)

**Medicinal plant used in case of hypnotics & sedative:**

Plant species	Family	Part used	Chemical composition
Sonchus oleraceus	Compositae	Stem in dried form	glyphosphate
Xanthium indicum	Compositae	Whole dried plant	Saponins, polyphenolic & alkaloids
Aganosma dichotoma	Apocynaceae	Whole dried plant	Phenolic acid & kampferol
Nicotiana tabacum	Solanaceae	Leaf in dried form	Nicotine, anablastine & alkaloids (Trigunayat, Raghavendra et al. 2007, MED 2010).

**Medicinal plants used in depression:**

Plant species	family	Part used	Chemical composition
Dendrophthoe falcata	loranthaceae	Whole plant used in the form of dried or fresh	Stigmasterol, sitosterol beta, oleanolic acid, flavones & tanins
Breynia retusa	euphorbiaceae	Bark in dried form	Lanosterol, triacotane & peonidin
Celtis philippensis	ulmaceae	Whole plant used in the form of dried or fresh	Glycosides leucocyanide, elagic di methyl acid, gallic acid
Asparagus racemosus	Liliaceae	Tuber in fresh form	Shatavarin & asperagin
Hypericum perforatum	Hypericaceae	Arial dried parts	Hypercin pseudo & hypercin (Müldner and Zöller 1984,



			Harrer and Schulz 1994, MED 2010).
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**Medicinal plants used in Parkinson's disease:**

Plants species	family	Parts used	Chemical composition
Blepharis maderaspatensis	acanthaceae	Seeds in dried form	Gomisin steroids D
Smilax Perfoliate	smilacaceae	Root in dried form	Diosgenin steroidal sapogenins
Smilax zeylanica	smilacaceae	Root in dried form	Hydroxy beta acids & alpha, mucilage
Plantago ovata	Plantaginaceae	Fiber husk	Nimbolide, meliacin, lotaustralin, glycoxydes
Azadirachta indica	Maliaceae	Leaf in fresh form	Phyllembelin, tannins, kaempferol, quercetin
Emblica officinalis	Euphorbiaceae	Fruit	Vitamin c & pectins (Sandhya, Vinod et al. 2010).

**Conclusion:**

Role of natural plants effective from ancient times & it is proved from experiment which perform through researcher in all around the worlds. Herbal plants possess lots of potential against several illness and mostly these drugs used in the form of decoction, extract, supplements, capsule, tablet and many more.

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