Value of ayurvedic medicinal plants as psychotherapeutic Agents-a   review

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Abstract:

During the last decade herbal drugs has been gaining growing popularity throughout the world. According to world federation for mental health, the mental and neurological disorders affect more than 450 million people around the world. Modern science is trying to control this problem but in most cases it has become unsuccessful. Under such conditions herbal drugs can produce beneficial effects. Modern psychotropic drugs have many side effects. So there is a need to find an alternative treatment from herbal plants which can cure these diseases. Studies undertaken in different parts of the world have proved presence of important pharmacological activities in many plants. This review describes some important plants effective in mental disorders.

Keywords- Ayurvedic medicinal plants, mental disorders, Psychotherapeutic agents.

Introduction:

Ayurveda, the ancient science of life has been serving the mankind since antiquity. It has a very special approach towards the disease, the patient and the science of medicine itself. One of the most important and highly interesting topic of discussion in *Ayurveda*, as its approach to psychopathology and psychotherapy (Murthy et al. 1987). The meaning of the word "Ayurveda" is self explanatory (*Ayu* = Life, *Veda* = Science). Life has been described as the complex combination of Body (*Sarira*), Senses (*Indriyas*), Mind (*Sattva*) and Soul *(Atma)* (Acharya 2008). The term "mental disease" *(Manasika Roga)* is not restricted to mean insanity and allied conditions of specific mental derangement, but also includes to some extent the emotional disorders. The emotional factors, when cross the state of normalcy and get deranged, become the syndromes or mental disorders. These disorders may be prevented by the use of psychotropic drugs, highlighted as *medhya dravyas* and *medhya rasayanas* either as a single drug or in the form of compound formulations, in classical texts of *Ayurveda*.

Humanity is suffering from various psychological disorders in spite of great advances in the field of medical sciences. These disorders includes anxiety, depression, dementia, epilepsy, cognitive disorder, neurodegenerative disease like Alzheimer's, schizophrenia etc. WHO preamble states that "health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity", suggesting there is no health without mental health.

In spite of this about 60 to 70 million Indians suffer from severe and common mental disorders & receive treatment for their condition. According to an estimate there is a prevalence level of 22% individual developing one or more mental or behavioural disorder in their life time. Psychiatric disorders

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account for 12% of the Global Disease Burden & this is likely to increase to 15% by 2020. It is also said

that by 2025, mental illness will catch up with heart disease or may even overtake it as the biggest global health concern (World Health Report, 2001). The use of modern CNS acting drugs in spite of having higher therapeutic ratios and neuroprotection is accompanied by side effects like insomnia, mood change, dizziness, respiratory depression, irritability, nausea, rash, and clumsiness etc. Further these drugs need to be taken regularly and if stopped abruptly has potential danger of triggering the recurrence of the disease.

Therefore the whole world is looking towards ancient science of *Ayurveda* to explore safe, alternative, cost effective treatment as well as reliable cure with no or minimal side effects for psychiatric disorders. The current review is focused on various herbs, which can be used in the treatment of various mental disorders along with their pharmacological & clinical evidence.

Data Collection:

The data for the present review were collected using the Pub Med literature search system of National Library of Medicine (NLM). Most of the papers reviewed herein pertinent to herbal medicine research were published in internationally recognized, English, peer-reviewed journals. The identity of each herb was carefully verified based on the description given in the papers.

Ashwagandha:

L.N.- Withania somnifera Dunal, Family-Solanaceae Hindi- Asgandh, Eng- Winter cherry.

Ashwagandha is one of the most utilized herbs in Ayurvedic medicine holding a position of importance similar to that of ginseng in china. It is categorized as *Rasayanas*, which promote health and longevity, retard ageing process & revitalize the body in debilitated conditions. The root of this plant is considered as nervine tonic and sedative hence used in all cases of nervous exhaustion, brain fatigue, insomnia and loss of memory (A.K. Nadkarni 1976). Various pharmacological studies demonstrated its antioxidant, antitumour, anxiolytic, antidepressant (Bhattacharya et. al., 2000), antistress (Bhattacharya et. al., 2003), anticonvulsant and CNS depressant activity (Kulkarni SK, 1996). Its active principles sitoindosides VII-X and withaferin A (glycowithanolides) prevents free radical damage of nervous tissue hence prevents normal aging and neurodegenerative diseases like epilepsy, schizophrenia, Parkinson's, Alzheimer's etc(Bhattacharya et. al.,1997). Recently it is also used to inhibit the development of tolerance and dependence on chronic use of various psychotropic drugs.

Vacha:

L.N. - Acorus calamus Linn. Family – Araceae , Hindi – Bach, English – Sweet flag

It is an aromatic semi-aquatic perennial marshy herb with creeping and branched rhizome. It is used in the treatment of insomnia, melancholia, neurosis, epilepsy and other mental disorders either alone or as a component of Ayurvedic preparations (Nadakarni KM, et.al., 1989, Dandia PC, et.al., 1970). Recently it has been reported that Vacha has antistressor activity and prevents stress induced changes in the rat brain by its antioxidant activity (Manikandan S, et.al., 2005) It is also used as a sedative, tranquillizer, anxiolytic, nervine tonic and memory enhancer(Menon & Dandiya, 1963). Asarone and beta-asarone are considered to be the active constituents. Sala et al. 1993 used its rhizome as an intellect-promoting agent against depression, mental disorders and general debility. Its powdered rhizome is given in

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confused state of mind, depressed psychosis, dementia, loss of consciousness, memory loss, anorexia and epilepsy (Howes and Houghton, 2003). Martis et al., 1991 have reported that both alcoholic and aqueous extracts of Acorus calamus have protective effects against PTZ & MES induced seizures.

Jyotishmati:

L.N.- Celastrus paniculatus Willd, Family – Celastraceae, Hindi - Malkangini, English - Climbing staff tree.

It is a large, woody, climbing shrub, well known for its memory enhancing, anxiolytic (Jadhav & Patwardhan, 2003), antiinflammatory, antioxidant, analgesic, sedative (Gaitonde et. al., 1957), tranquillizer (Sheth et. al., 1963) and antiepileptic (Shroff et. al., 1959) property. The bark is abortifacient, depurative and a brain tonic. The seeds and the seed oil are bitter, thermogenic, intellect promoting, digestive, and is useful in epilepsy stomach disorders, beri-beri bed sores and psychosis (Sastry JLN, Chunekar KC, 2008). In rats the oil helped improve learning and memory, and decreased noradrenalin, dopamine and serotonin in the brain (Nalini et. al., 1995).

Shankhapuspi:

L.N. - Convolvulus pluricaulis Choisy., Family- Convolvulaceae, Hindi- Chankhahuli.

Convolvulus pluricaulis is a prostrate, spreading, perennial, wild herb commonly found on sandy or rocky ground under xerophytic conditions in northern India. In Ayurveda this plant is considered as *Medhya Rasayana* for improving memory and intellect. Pharmacological studies demonstrated its sedative, tranquillizer, brain tonic, and pschyostimulant activity. The leaves and flowers possess hypotensive properties & is used for treating anxiety neurosis & hypertension (Bala and Manyam, 1999). Whole plant is used to treat various brain disorders like insomnia, loss of memory, mental as well as physical fatigue anxiety, stress and neurodegenerative disorders (Handbook of Exp. Pharmacology, Singh & Mehta,1977). It is believed to be the only herb that is capable of enhancing all the aspects related to brain power, such as learning, memory and the ability to recall.

Jatamansi:

L.N.-Nardostachys jatamansi DC. , Family- Valerianaceae, Hindi – Jatamansi, English - Indian spikenard.

It is an erect, perennial, aromatic herb, 10-70 cm high, with long, stout, aromatic, woody greyish, rhizomatous, tail-like rootstock covered with reddish-brown hairs. The rhizome is bitter, astringent, sweet, acrid, cooling, emollient, aromatic, antiseptic, analgesic, anti-epileptic, hypotensive, CNS-depressant, tranquillising, nervine tonic, intellect promoting, sedative, antiarrhythmic, antispasmodic, diuretic, antimicrobial, anticonvulsant, antiulcerogenic, antianxiety (Kuppurajan, K. *et al.* 1992), hepatoprotective. Used to treat nervousness, anxiety, insomnia, irritability, epilepsy, insanity, hysteria, schizophrenia, convulsions and neurosis (Ramu et. al.,1982). In a preliminary clinical trial on hyperkinetic children, "jatamansone" the active principle of jatamansi showed significant reduction in aggressiveness, restlessness and stubborness as well as insomnia (Gupta et. al.,1968).

Brahmi:

L.N.-Bacopa monnieri Linn. Family- Scrophulariaceae, Hindi- Brahmi, Eng-Thyme leaved gratiola

It is an annual creeping plant found throughout India in wet, damp and marshy areas. In Ayurveda it is recommended for the management of a range of mental conditions including anxiety, poor cognition , lack

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of concentration, insanity, depression and epilepsy(Russo and Borelli, 2005).The saponins bacoside A and B have been claimed to be the active principles regarding enhancement of memory and intelligence(Singh and Dhawan, 1992; Russo and Borelli, 2005).Pharmacological studies demonstrated its anxiolytic, sedative , tranquillizer, nervine tonic smooth muscle relaxant, antispasmodic, anticancer and antirheumatic and analgesic activity(Database of Medicinal plants vol.1). It showed Seizure protection activity comparable to benzodiazepines.

Mandukaparni:

L.N.- Centella asiatica Linn., Family- Apiaceae, Hindi – Gotu kola, English - Indian Pennywort.

It is a perennial herb distributed throughout tropical & subtropical regions of India. The whole plant is used as a nervine tonic in various brain diseases and is given to children as syrup to enhance memory. It is thought to be effective in stress disorders,behaviour and learning disorders(Gupta et. al.,2003), impaired intelligence amnesia, epilepsy(Sudha et.al., 2003) and hysteria. Its leaves are given with milk to improve memory against dementia and aging (Ahuja, 1965).The glycosides, brahmoside and brahminoside (active principle in C.asiatica), have reported to exhibit mild sedative , tranquillizer(Aithal & Sirsi, 1961), CNS depressant(Sakina & Dandiya,1990) , anxiolytic and antioxidant properties. Plant has been clinically evaluated in mentally retarded children (Database vol 1).

Tagara:

L.N.- Valerian officinalis Linn. Family-Valerianiaceae, Hindi –Tagar, English- Indian Valerian.

It is a hair, tufted perennial herb upto 45 cm high, rootstock horizontal, thick with descending fibres. Valerian is one of the most effective remedies in the treatment of neurosis. Rhizome preparations are used for their sedative, anxiolytic, hypnotic and antidepressant properties (A n o n y m o u s , 1 9 9 6). It is commonly used as a tranquillizer & nervine tonic and had shown to encourage sleep, improve sleep quality and reduces B.P (Gilani et. al., 2005) .Due to its CNS depressant and GABA agonist property it is also beneficial in advanced stages of Hysteria and Epilepsy.

Nirgundi:

*L.*N.-*Vitex negundo* Linn. Family- Verbenaceae, Hindi- Nirgundi, English - Five leaved chaste.

It is a aromatic shrub or sometimes a slender tree with quadrangular whitish tomentose branchlets. Pharmacological studies demonstrated CNS depressant, analgesic, anticonvulsant, anti Parkinsonism antipsychotic and anti depressant activity from extracts of this plant (Gupta et. al., 1990).

Kapikacchu:

*L.*N.- *Mucuna pruriens* Baker non DC, Family-Fabaceae, Hindi- Kawanch, English – Cowitch.

The plant is an annual, climbing shrub with long vines. Its pods are covered with stiff hairs, which produce intense irritation of skin. Its seed are considered as nervine tonic, aphrodisiac, anthelmmintic, antidepressant, antiparkinson and neuroprotective. Root is a tonic and is useful in diseases of the nervous system. Ethanolic extract of leaves of *Mucuna pruriens* possesses anticataleptic and antiepileptic effect in albino rats (Champatisingh et. al., 2011). *M. pruriens* seeds contain high concentrations of levodopa a direct precursor of the neurotransmitter dopamine i.e. why it is used in the treatment of

Parkinson's disease (Katzenschlager et. al., 2004).

Conclusions:

Since the mental illness are diverse and individual patients are biochemically unique, a larger number of drugs will increase the likelihood of finding a beneficial medication. Ayurvedic remedy for brain disorders is much preferred over synthetic drugs because of various side effects of synthetic drugs ranging from sleep disorders to withdrawal syndromes. Ayurvedic treatment not only improves patient compliance but also there are possibilities of enhancing the bioavailability of many drugs. Active constituents extracted from specific parts of various plant origins have proved to be beneficial. This review reveals that number Ayurvedic drugs are available for the treatment of various mental disorders but there is a need to explore efficacy of many of them. The herbal extracts and constituents with demonstrable psychotherapeutic effects in animal models may deserve further evaluation in clinical studies.

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