



ANXIETY AND DEPRESSIVE ILLNESS: CURSE TO METROPOLITAN CITIES AND ROLE OF AYURVEDA

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ABSTRACT

Survey says that world is not threatened by spreading communicable diseases but by raising incidences of non-communicable diseases that spoil mind and thereby causing ailment in body. Stress and stress related disorders like mood disorders and personality disorders including anxiety and depression become the major problem of metropolitan cities. Every third individual living in big cities is suffering from stress and related disorder, amazing but it is true that in 21st century when we are talking about genomics and chemical weapons world is destroying by fake thoughts. With the astonishing development in contemporary medicine pathogens are conquered but mind is still beyond the reach of science. Human mind has terrific power that can even endure the whole universe become ill merely by poor thoughts. Ayurveda, the ancient medical science is the world oldest treatise that gives emphasis on management of thoughts for successful management of psychiatric diseases. Ayurveda gives three fold treatment approaches for every disease including both pharmacological as well as non-pharmacological measures. This paper gives the details of management of anxiety and depressive illness through Ayurvedic treatment methodology.

Keywords: Medhya Rasyana, Sattvavajaya, psychiatric disorders.

INTRODUCTION

Ayurveda, the world most ancient documented medical science is the first to advocate that healthy body cannot be attained without healthy mind and give the novel concept of psychosomatic disorders and psychiatric diseases¹. This novel concept of interrelation of body, mind and soul is the building brick of modern Psychology. Today we know that there are many diseases that are related to mind i.e. default in ones perceptions, feeling, action and thinking². Such disorders are collectively known as Mental or Psychiatric disorders. Anxiety is one such disease that is defined as long acting, future focused, broadly focused towards a diffuse threat, and promoting excessive caution while approaching a potential threat and interferes with constructive coping. Anxiety is a normal phenomenon to overcome the stress situation but if long term or severe problems with anxiety develop, then such problems are classified as an Anxiety disorder³. According to Ayurveda, Satva (psyche), Atma (soul) and Sarira (body) are the three pillars of life⁴. Man, the most developed and sophisticated living being on earth, is a step ahead in the sense, desires not only to live but to live a long, happy and disease free life as far as possible. But the continuous improvement in the life expectancy with technological advancement, urbanization, economical growth, increasing competition in every field of life etc., has led to stressful society. According to latest health reports, Stress is said to be one of the largest killers of man today. Stress is now becoming more accepted as being crucially related to our total – physical, mental and spiritual health. Various stressors leads to disturbances in Manasika bhava (Emotions), described in Ayurveda, are root cause of many diseases disturbs the homeostasis of both the body and mind by vitiating manasa dosha, sharira dosha and agni. Therefore proper management of such psychiatric diseases required a more comprehensive treatment modality including both pharmacological and non-pharmacological treatment.

Management of anxiety and depressive illness by oral medicaments

Being an alarming problem it needs effective and safe treatment. Modern therapeutics though have a spectrum of the drugs for management of these diseases, they are having serious side effects and habit forming nature. Therefore there is a wide scope of research to find out a safest remedy or non-pharmacological approach from Ayurveda for the management of these diseases.

Acarya Caraka explains three types of therapies of physical and mental disorders:

1. Yuktivyapasrya – Pharmacological treatment
 2. Daivavyapasraya – Spiritual therapy
 3. Sattvavajaya – Psychotherapy
- } Non
Pharmacological treatment

Yuktivy Pasrya (Pharmacological Treatment)

It is divided into three types of therapies, which are internal cleansing, external cleansing and surgical therapy. Diet and medicaments come under these categories. Samsodhana (elimination), therapies are also useful for this disease⁵. Acharya Charaka has explained Medhya Rasayana therapy⁶, which is of special significance in the management of mental disorders including Cittodvega. Medhya Rasayana drugs are considered to promote Medha, in addition to their general rejuvenative effects.

Few Herbs Useful in the Management of Anxiety and Depressive Illness

Shankhpushpi: *Convolvulus plauricaulis*

Shankhpushpi produces cytoprotective anti stress effectors in laboratory rat hippocampal cells. CA₁ and Dg areas in hippocampus are recognized for learning and memory⁷. Cell loss in these areas has been implicated with age related nervous disorders including memory loss. Increase in cell numbers after treatment with herbal preparation of Shankhpushpi provides first hand evidence of cellular action of the drug in improving learning and enhancement of memory⁸. Shankhpushpi play an important role in enhancing

memory, drug may also help in preventing, degenerative changes in neuron cell bodies in specific brain areas⁹.

Effect of *Convolvulus plauricaulis* on learning and memory

The ethanolic extract of *Convolvulus plauricaulis* and its ethyl acetate and aqueous fractions were evaluated for their memory enhancing properties. Two doses (100 and 200 mg/kg/p.o.) of ethyl acetate and aqueous fractions of the ethanolic extract were administered in separate groups of animals. Both the doses of all the extracts of *Convolvulus plauricaulis* significantly improved learning and memory in rats¹⁰.

Anxiolytic, antidepressant, anti stress, neurodegenerative and anti amnesic activity

An alcoholic extract of *Convolvulus plauricaulis* was found to cause an antagonist effect against amphetamines and tremorine, a potentiation of the acetylcholine effect of pentobarbitone induced hypnosis and morphine analgesia, without having own sedative properties. A methanolic extract of the whole plant produced alterations in the general behavior pattern, reduction in spontaneous motor activity, hypothermia, potentiation of pentobarbitone sleeping time, reduction in exploratory behavioral pattern and suppression of aggressive behaviour¹¹. Ethyl acetate and aqueous fractions of the ethanolic extract showed an anxiolytic effect as evidenced by an increase in the time spent in open arms and the number of open arm entries compared with the control group. Upadhyay (1986) studied the therapeutic role of Ayurvedic herbs in mental disorders and classified *Convolvulus plauricaulis* as a brain tonic¹². *Convolvulus plauricaulis* in a dose of 100 mg/100 g body weight has a barbiturate potentiation effect in albino rats; this effect was weaker than that of diazepam, but stronger than that of *Centella asiatica* Linn, urban *Hydrocotyle asiatica* Linn. This plant has also been reviewed and reported for its potent anxiolytic, neurodegenerative and anti stress activity by various researchers¹³⁻¹⁸.

Mandukaparni: *Centella asiatica*

Antidepressant properties

The antidepressant effects of total triterpenes from *Centella asiatica* on the immobility time in forced swimming mice and concentration of amino acid in mice brain tissue was observed. In the study, imipramine and total triterpenes from *Centella asiatica* reduced the immobility time and ameliorated the imbalance of amino acid levels confirming the antidepressant activity of *Centella asiatica*¹⁹. The contents of monoamine neurotransmitters and their metabolites in rats cortex, hippocampus and thalamus were evaluated wherein significant reduction of the corticosterone level and increase of the contents of 5-HT, NE, DA and their metabolites 5-HIAA, MHPG in rat brain were observed which further strengthened the postulated involvement of total triterpenes of *Centella asiatica* in ameliorating the function of HPA axis and increasing the contents of monoamine neurotransmitters for its antidepressant effects.

Sedative and anxiolytic properties

Centella asiatica was described to possess CNS effects in Indian literature such as stimulatory-nervine tonic, rejuvenate, sedative, tranquilizer and intelligence promoting property²⁰. It has been traditionally used as a sedative agent in many Eastern cultures; the effect was postulated mainly

due to the brahmoside and brahminoside constituents, while the anxiolytic activity is considered to be, in part due to binding to cholecystokinin receptors (CCK_B), a group of G protein coupled receptors which bind the peptide hormones cholecystokinin (CCK) or gastrin and were thought to play a potential role in modulation of anxiety, nociception, memory and hunger in animals and humans²¹.

Cognitive and antioxidant properties

Centella asiatica is known to re-vitalize the brain and nervous system, increase attention span and concentration and combat aging²². A study demonstrated cognitive-enhancing and anti-oxidant properties of *Centella asiatica* in normal rats. The effect of an aqueous *Centella asiatica* extracts (100, 200 and 300 mg/kg for 21 days) was evaluated in intra cerebroventricular (i.c.v.) streptozotocin (STZ)-induced cognitive impairment and oxidative stress in rats²³. The rats treated with CA showed a dose-dependent increase in cognitive behavior in passive avoidance and elevated plus-maze paradigms.

Yashtimadhu: *Glycyrrhiza glabra*

Nootropic action

Research studies had shown that nootropic action aqueous root extract treatment in wistar albino rats enhances both spatial learning ability and retention of learned tasks. Evaluating nootropic action of aqueous root extract of *Glycyrrhiza glabra* treatment on the dendritic morphology (dendritic arborization and dendritic intersections) of hippocampal CA₁ neurons in one month old male wistar albino rats showed that all the doses of aqueous root extract of Gg significantly enhanced dendritic arborization (dendritic branching points) and dendritic intersections however in the dose of 150 and 225 mg/kg/p.o showed a significant (p < 0.01) enhancement of dendritic arborization and dendritic intersections along the length of both apical and basal dendrites in hippocampal CA₁ pyramidal neurons is comparable to control. Based on results obtained, it can be conclude that constituents present in aqueous root extract of *Glycyrrhiza glabra* have neuronal dendritic growth stimulating properties²⁴.

Adaptogenic Effect

Licorice is chemically similar to corticosteroid hormones, producing a corticosteroid like effect. This is very important as glucocorticoids normalize metabolic processes, exerting and maintaining a physiological effect facilitating adaptation to novel conditions, thus the adaptive effect of licorice root²⁵. In another study conducted on rabbits, the effect of continuous vibration and treatment with licorice root on the rabbits' peripheral blood red cells was investigated²⁶. Active substances of licorice root accelerated metabolism in cells of the bone marrow erythroid stem, enhanced compensatory reserve of the organism and increased animal's resistance to stress²⁶.

Guduchi: *Tinospora Cordifolia*

Anti-depressant activity

Tinospora cordifolia is claimed to be useful in maintaining healthy brain function and in stress management. The root of Gulvel is traditionally used for its anti stress activity²⁷. Its anti stress activity was confirmed by its effects on brain neurotransmitters in stressed rats^{28,29}. The supportive evidence is in terms of normalization of stress-induced biochemical changes in norepinephrine (NE), dopamine

(DA), and 5-hydroxytryptamine (5-HT) in experimental rat models and improved levels of 5-hydroxyindoleacetic acid (5-HIAA) (a metabolite of 5-HT) in mice with ethanolic roots extracts²⁷. Antidepressant activity of *Tinospora cordifolia* was shown in Swiss albino mice by tail suppression test and forced swim test on oral administration of its petroleum ether extract in the doses of 50, 100, and 200 mg/kg. The efficacy of antidepressant activity was comparable to 15 mg/kg of imipramine (a TCA) and 20 mg/kg of sertraline (An SSRI). The dose of 50 mg/kg showed most potent effect with no change in locomotor function. Antidepressant-like effect of Gulvel was significantly reversed on tail suppression test by pre-treatment of Swiss young albino mice with prazosin (an α -1 adrenoceptor antagonist), sulpiride (a selective dopamine D2-receptor antagonist), p-chlorophenylalanine (PCPA - serotonin synthesis inhibitor), and baclofen (GABA-B agonist). The extract also reduced the mouse whole brain monoamine oxidase (MAO-A and MAO-B) activities resulting in increased levels of brain monoamines. Inhibition of metabolism of monoamines, particularly lysergic acid diethylamide (LSD) and noradrenaline was also demonstrated³⁰.

Aswagandha: *Withania somnifera*

Anxiolytic activity

In a human clinical trial the anxiolytic efficacy of an ethanolic extract of the herb was evaluated. In that double-blind placebo-controlled study, 20 patients suffering from anxiety disorder received an extract of *Withania* in the form of a tablet whilst 19 people received a placebo and patients were assessed at baseline, the end of week 2 and at the end of week 6 (the treatment endpoint). According to the authors the study demonstrated a trend for the anxiolytic superiority of *Withania* over placebo and they concluded that *Withania* has useful anxiolytic potential and merits further investigation³¹.

Anti-depressant activity

A recent study was conducted on Swiss albino mice to see the effect of withanolide A (isolated from *Withania somnifera* root extract) on chronic stress-induced alterations on T lymphocyte subset distribution and corresponding cytokine secretion patterns³². Withanolide A was orally administered once daily on the stressed experimental animals and showed that it caused significant recovery of stress-induced depleted T cell population causing an increase in the expression of IL-2 and IFN- γ (a signature cytokine of Th1 helper cells) and a decrease in the concentration of corticosterone³². This study supports *withania*'s role in stress management including immune function. In another study researchers investigated the effect of withanolide A on memory-deficient mice showing neuronal atrophy and synaptic loss in the brain³³. Treatment with withanolide A induced significant regeneration of both axons and dendrites, in addition to the reconstruction of pre and post synapses in the neurons³³.

Panchakarma therapies useful in the management of anxiety and depressive illness

Shirodhara

An experimental study conducted by Kazuo Uebaba *et al.* demonstrating the probable mode of action of Shirodhara showed that the subjects' feelings during Shirodhara had deep restfulness with less anxiety—as if the subject were between the sleep and awaken states. Shirodhara induced bradycardia and the relative suppression of LF/HF power spectrum density, which indicated lowered sympathetic tone. Expired gas analysis showed a decreased tidal volume and

CO₂ excretion. The EEG showed the slowing of the wave, an increase in α and θ activity, and an increase in right-left coherence. These metabolic, ECG, and EEG findings support the reported experiences of relaxed and low metabolic states during Shirodhara. Physiological changes during Shirodhara were similar to those of meditation, including α -wave dominance in the frontal area and a decrease in heart rate and CO₂ excretion. These findings indicated a change in the function of the frontal lobe, limbic system, brain stem, and autonomic nervous system. The neurophysiological mechanism of the effects of Shirodhara on the psychophysiological changes may be related to the tactile stimulation of the skin or hair follicles innervated by the first branch of the trigeminal nerves (ophthalmic nerve). The impulses would be transmitted to the thalamus through the principal nucleus and forward to the cerebral cortex (somatosensory field) or limbic system³⁴.

Daivavyaprasaya (Spiritual Therapy)

It comprises of Mantra (incantation), Ausadhi (talisman), Mani (gems), Mangala (auspicious offerings), Bali (religious scarification), Upahara (gift), Homa (oblation), Niyama (religious rules), Prayascitta (atonement), Upavasa (fasting), Svastyayana (chanting of auspicious hymns), Pranipata (paying obeisance), Gamana (pilgrimage) etc. It has empirical powers to eradicate diseases. All the items enumerated under this therapy are effective in the eradication of disease only due to the divine influence.

Sattvavajaya (Psychotherapy)

In Ayurveda, the modality of treatment that is used for the management of psychiatric disorders is known as Sattvavajaya. Sattvavajaya includes both Psychotherapy and oral medication. Having control over the Manas (Psyche) such as to control it or withdraw it from coming into contact with harmful or unwholesome objects is the main object of Sattvavajaya³⁵. The five aspects of Sattvavajaya treatment include Jnanam (spiritual knowledge), Vijnanam (Knowledge of the scriptures related to truth), Dhairya (increasing the patience of the person by counseling or meditative procedures), Smriti (memorizing the past incidences) and Samadhi (meditation). Whole of the modern psychiatry can be included into these five types. Good conduct, following ethics of good moral, having spiritual knowledge, believing in Supreme Being, developing forgiving attitude and selfless devotion are important dimensions of Sattvavajaya Chikitsa. Management as well as intonation of thoughts (Manonigraha) by different perspective of Sattvavajaya chikitsa is the foremost therapy for the treatment of psychosomatic diseases. Sattvavajaya means method of training one thought in positive way to utilize his maximum energy. The methods of this treatment are Bhayadarsana (terrorizing), Vismaphana (surprising), Vismarana (de-memorizing), Ksobhana (socking), Harsa (exciting), Bhatsana (chiding), etc. (Ca. Vi. 8/87). Those methods may be useful in the treatment of Cittodvega. The following are to be followed for the treatment of psychic disorders:

- To attend the courses of conduct relating to virtue, wealth and desire.
- To render service to the persons well versed in the nature and cure of psychic diseases.
- To obtain all round knowledge about the self etc. (Ca. su. 11/47).

CONCLUSION

Holistic approach of Ayurveda gives all-encompassing treatment methodology for the proper management of Psychiatric diseases and this is due to this unique approach of Ayurveda that it becomes world most popular alternative medicine. Cost effectiveness, highly effective non-invasive techniques and least toxic side effects are the best aspects of this treatment methodology that make it successful in properly managing stress and stress related disorders.

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