



PATHOPHYSIOLOGY AND MANAGEMENT OF DEPRESSION: AN AYURVEDIC OVERVIEW

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ABSTRACT

In its holistic approach, Ayurveda gives prime importance to positive mental health. Anything that disturbs the balance of body and mind is known to produce a disease. Emotions are the basic feelings of human beings. All of us have felt unhappy, “down,” or discouraged at times in our lives. But when anybody feels anxious, hopeless, helpless, worthless, guilty, irritable, hurt, or restless comes under the categorization of depression. Vishada and Avasada are two conditions that are similar to depression in Ayurveda. Vishada is defined as persistent sad mood, feeling of incompetence due to apprehension of failure resulting into incapability of mind and body to function properly. Charaka quotes ‘Vishado Rogavardhanam Agrya:’ mean Vishada is the foremost factor to worsen the disease condition. This is the first principle regarding Psycho-neuro-immunology in Ayurveda. Progress in understanding the neuro-biology of depression is slow. Several promising hypothesis of depression and antidepressant action have been formulated recently. A neuro-biological understanding also requires identification of several mechanisms involved in the physio-pathogenesis of depression. Depression or other mood disorders are very serious because it starts at early age, hard to diagnose in youth/youngsters, confused with normal frequency behaviour, drug use or other psychiatric illnesses associated with high suicidal risk, treatment is started very late and requires long term follow up / treatment for long term. In the light of above facts in present article we tried to give a brief overview into patho physiology of depression and outline a comprehensive Ayurvedic approach to manage Depression and other mood disorders. It also highlights the hidden concept of Ayurvedic psychology that can be utilised in medicine for treatment of depression and promotion of mental health.

Keywords: Depression, Mood Disorder, Mental Health and Neurobiology.

INTRODUCTION

Depression is a state of low mood and aversion to activity that can affect a person’s thoughts, behaviour, feelings and sense of well-being¹. Depressed person may feel sad, anxious, empty, helpless, hopeless, guilty, irritable, and hurt and restless². Globally depression is a common illness worldwide with an estimated 350 million people affected according to World Health Organization³. It has a major contribution to the global burden of disease. Women’s are more affected by the depression than men. It is estimated that 1 million death/year occur due to on and off causes of Depression⁴. Considering the grave nature of this disease the World Health Organization specially launches “The Mental Health Action Plan, Oct 2013-20 and celebrates every year on 10th October as “World mental health day”⁵

Depression

Everyone at various times in his/her life feels sad or ‘blue’. It’s normal to feel sad on occasions. Sometimes this sadness comes from things that happen in our lives; by our reflex we want to rectify them. But actually there is the difference between ‘normal’ feeling or sadness and the feelings caused by “Clinical depression” while its normal for people to experience ups and downs during their lives, moreover who have clinical depression experience specific symptoms daily for two or three weeks, making it different to function at work, at school relationship and everywhere. Depression is nearly twice as prevalent in women as in men.⁶ According to ancient Indian literature of Mahabharata, at the battle of Kurukshetra, Arjuna suffered from Vishada which led him to a state of disability. Arjuna’s despondent state on the

battlefield, termed as Vishada (Depression), which precipitated a prolonged depressive episode is described in Arjuna vishada yoga.⁷

Neurobiology of Depression in Modern Medicine

Animal and human research has identified a number of abnormalities which played important in the pathogenesis of depression. The main findings, which interact closely with each other, are decreased monoamine (serotonin and noradrenaline) neurotransmission, low Brain Derived Neurotrophic Factor (BDNF) concentrations, raised cytokines, dysregulation of the HPA axis, cortical and subcortical functional, structural brain changes. The structural changes in the brain in particular the hippocampus and PFC are believed to be due to abnormalities in neuroplasticity rather than neurodegeneration. The deregulation of the HPA axis is responsible to a great extent for these abnormalities. Raised levels of circulating cortisol activate brain receptors stimulating gene transcription and protein synthesis. Although this may have a beneficial effect in the short term, enabling the brain to cope with smaller amounts of stress, persistent hypercortisolaemia in chronic stress can affect voltage-gated ion channels allowing increased calcium entry into the activated neurons and causing neuronal damage. Glucocorticoid induced damage in the hippocampus may occur directly, via activation of the glutamate systems or via BDNF reduction⁸. Decreased activity in monoaminergic neurotransmission or other noxious factors (glutamate effects) may also be responsible for the pathogenesis of depression. This vicious cycle of events may be triggered off

in susceptible individuals by stress. Due to stress various cycle of brain emotion and capability to take decision is hampered. Despite the major role stress and the HPA axis appear to play important role in the pathogenesis of depression, given the multiple systems involved (neuroanatomical, neurochemical and immunological), insults other than the effects of stress hormones, cortisol and CRH also need to be considered⁹. But it is still unknown whether HPA axis abnormalities are a primary or secondary cause of depression or secondary. Major depressive disorder (MDD) remains one of the most frequently seen psychiatric illnesses in primary care settings¹⁰. Genetic and stress vulnerabilities interplay to initiate a cascade of neurobiological alterations that disrupt a dynamic system. Progressive effects of recurrent and chronic MDD may then be potentiated by further structural and functional abnormalities. Due to these sudden changes in brain an essential objective of treatment must be to restore normative functioning and prevent further neurobiological structural alterations. Increasing 5-HT and NE neurotransmission is likely to initiate true recovery with the restoration of neurotrophic support, glucocorticoid signalling and neuroendocrine regulation⁹. Basis of pathology during acute brain infarction, there is decreased monoamine synthesis leading to decreased serotonin levels in the brain. In blood, serotonin is present in high concentrations in platelets and released into the plasma when platelets aggregate at the site of tissue damage. It is then subsequently catabolised by monoamine oxidase enzyme activity in the liver and lungs. In the CNS, serotonin is present in high concentrations in localized regions of the midbrain, serving as a neurotransmitter.^{11,12}

Ayurvedic Concept of Psychology

Ayurveda is one of the most ancient systems of medicine in the world. It is a science of life, health and cure based on the eternal laws of nature. Life is a combination of body, sense, mind and incarnating soul according to Ayurveda. Health is a balanced state of Trigunas, Tridoshas, Dhatus, Agnis and Malas. Satwa, Rajas and Tamas gunas and Vata, Pitta and Kapha doshas and their predominance determines the Prakriti of a person. Mind-body relationship and its significance in Ayurveda can be illustrated by number of fundamental issues such as psychological concept of evolution of universe, concept of Purush, Prakriti, Deha Prakriti as well as Manas Prakriti and identification of psychosomatic factor in causation and presentation of several diseases. Before the study of depression as per Ayurveda more important to know how mind works normally. Ayurveda provides a special language for understanding mental physiology and pathology also. The term Avashada is more applicable term to illustrate Depression in Ayurveda and manas is used at the place on mind¹³. According to Ayurveda the main three primal qualities (Gunas), which are the main power of cosmic intelligence (mind or manas) is Sattva, Rajas and Tama¹⁴. The three gunas are the most subtle qualities of nature that underlie matter, life and mind. They are the energies through which not only the surface mind, but also our deeper consciousness functions. They are the powers of the soul which holds the karmas and desires. All objects in the universe consist of various combinations of the three gunas. The three gunas are the one of the prime themes of Ayurvedic thought. They form a deeper level than the three biological

humours and help us understand our mental and spiritual nature.

Sattva

It is the quality of intelligence, virtue and goodness and creates harmony, balance and stability. It is light and luminous in nature. It possesses an inward and upward motion and brings about the awakening of the soul. Sattva provides happiness and contentment. It is the principle of clarity, wideness and peace.

Rajas

It is the quality of change, activity and turbulence. It introduces the disequilibrium that upsets an existing balance. Rajas are stimulating and provide pleasure, owing to its unbalanced nature it quickly results in pain and suffering.

Tamas

It is the quality of dullness, darkness, and inertia and heavy or obstructing in its action. It has depressed mood, lack of faith in God, lack of Good conducts, intellectual lacking, ignorance, crookedness, not attending to duties and sleepiness.¹⁵

Sign of Mental Health

- Healthy memory
- Awareness of responsibilities
- Following good values
- Self-awareness and responsibilities and beyond self
- Maintaining self-hygiene and cleanliness
- Staying active
- Fearlessness
- Doing things enthusiastically
- Perseverance
- Taking the proper diet at the proper time according to the body type¹⁶

Ayurvedic Concept of Depression

Our mind controls our body. The mind is responsible for perception, thinking, understanding, and taking the right decision at the right time¹⁷. If the mind is sick, then the body mind apparatus is in danger. When the mind is in a status of health, it contains positive feelings like love, affection, sharing, and caring. Due to improper diet and actions, the natural state of mind is disturbed and these positive feelings are driven out. They then give place to negative feelings sad, anxious, empty, hopeless, worried, helpless, worthless, guilty, irritable, hurt, or restless¹⁸. Ayurveda mentions following causes for mental illness or Depression

- Lack of coordination between mental functions of, Dhi¹⁹ (learning), Dhriti²⁰ (retention) and Smriti²¹ (long time memory)
- Imbalance or weakling of Prana Shakti (Life Force)
- Pragyapradha²² (violation of nature and virtues)

Pathogenesis of Depression as per Ayurveda

A wide range of psychiatric conditions have been described in Ayurveda. Primary psychological conditions caused purely by Manasa Doshas, i.e. Rajas and Tamas include: Lust (Kama), Anger (Kodha), Greed (Lobha), Delusion (Moha), Jealousy (Irsya), Pride (Mana), Euphoria (Mada), Grief (Soka), Anxiety (Chinta), Neurosis (Udvega), Fear (Bhaya),

Happiness (Harsha). According to Ayurveda Psychological factors are involved in almost all the disease processes along with physical disturbance. An imbalance at mental level is usually reflected and re-enforced at physical level and vice versa. When allowed to persist for long time, the psychic and somatic disorders get combined with each other. The vitiation of the manovaha srotas causes diseases like Unmada, Apasmara, Atattvabhinivesa, and depression also. The person suffers from terrific dreams or can manifest as psychosomatic disease²³. According to Ayurveda pathogenesis of Depression is imbalance of Rajas and aggravation of Tamas at psychic level are the important pathological factors. Depletion of Vata dosha and vitiation of Kapha dosha is found at physical level.^{24,25}

Sarira Dosas and Manas

Bodily humours are also related with mind. Among the three humours Vata is mainly responsible for the activities of the mind i.e. it is the controller and stimulator of mind and is responsible for enthusiasm. These are five divisions of Vata, Prana vayu is the most important of all 5 division, it is the supporter of mental functions and Udana vayu is responsible for the generation of memory. Pitta is responsible for the activities of brain and generation of intelligence. The general functions of Pitta are courage, anger; delusion/infatuation, happiness, and intelligence are mentioned. One of the types of Pitta i.e. Sadhaka Pitta is directly related to the function of mind. It is responsible for intelligence, memory and intellect, self-esteem, enthusiasm and enables one to achieve one's aspirations. Kapha is responsible for forbearance, fortitude, patience, courage, knowledge, learning, wisdom, cognition, perception, comprehensiveness, understanding, talent, greedless ness, stability and enthusiasm.

What are the Main Symptoms of Depression?

Depression is a disorder of mood that produces sad feelings, negative thoughts, and disruptions of sleep, appetite, thinking, and energy level. A major depressive disorder is defined as 1 or more episodes of negative mood and sadness that are sufficient to interfere with daily living¹². Five main areas of functioning may be affected in the form of three types-

- A. Behavioural Symptom
 1. Less activity, less productivity
- B. Cognitive Symptom
 2. Hold negative views of themselves
 3. Blame themselves for unfortunate events
 4. Pessimism
- C. Physical Symptom
 5. Headache, dizzy spells general pain

Dukkhavam, Atmana ashaktatam, Asiddhi bhaya, Kheda, Avasannata, Karmeshu apravritti are main cardinal signs of depression described in Ayurveda.

Management

Ayurvedic psychology deals with four level of treatment-

- A. Biological Humours- Balancing, Pitta and Kapha
- B. Vital essences – Strengthening Prana, Tejas and Ojas, the master form of Vata, Pitta and Kapha
- C. Impressions – harmonizing the mind and senses
- D. Consciousness – Promoting the correct functions of consciousness.

Depression is stage of mind due to various reasons. The treatment includes Nidanparivarjana (is to avoid causative factor) and pharmacological and non-pharmacological interventions. For the easy understanding of the management principles of depression in Ayurveda, the subject is studied under following heads-

Ayurvedic counselling and behaviour modification

Counselling is probably the most important instrument of psychological treatment. It should be a learning process in which a person comes to understand the different aspects of his/her nature (Prakriti) and modify them for optimal well being the constitutional types of Ayurvedic all the basin of all Ayurvedic counselling. The person with Vataj, Pittaj, Kaphaj prakriti should know their characteristic traits and should follow a clear and comprehensive life regimen to bring stability to their mind. They should also apply the therapies of opposite nature it is translate as thinking thoughts of an opposite nature or cultivate a balanced state of consciousness.

Nutritional aspect of Depression- Diet and herbs

The food that we eat affects not only our body but entire state of mind. The balanced food full of life force like where grains, fruits, milk and milk products as known as sattvik food. They improve sensory function and promote mental harmony and clarity. Excessive eating is Tamsik and if food intake is spicy, sour, salt not adequate to ground mind it is Rajasic. Both these are to be avoided. There are herbs in Ayurveda to promote the intellect and deeply nourish the neurological tissues. They are nervine tonics. The Medhya Rasayanas enhance biological nourishment of the brain, producing tranquility of mind, concentration and improved memory. The drugs like Ashwagandha, Shankhapushpi, Bramhi and Almond is a very good mental tonic.

Rules or codes for mental health

The nature of our deepest consciousness (Chitta) is determined by these gunas Sattva, Rajas and Tamas. These gunas can be transformed by impressions and association we activate. As Sattvic impression and association will activate positive, qualities of consciousness like love, clarity and peace. Tamsic impressions will activate insensitively, ignorance and inertia and finally depression. The list of codes of conducts advocated under Sadvritta and Achara Rasayana hints to such positive associations that should be practised.

Panchakarma therapy

Complete purification of body and mind with Panchakarma treatment procedure like nasya, shirodhara, shirovasti, vasti, thalapothechhil and many others balance all the three doshas and help to stabilize the thought process for better mental strength.

Satwavajaya chikitsa

It involves efforts to control the abnormal mental activity by practice of Yama (code of conduct), Niyama (strict behavioral regimen), Asana (various yogic postures) which are helpful in imparting stability to both body and mind) and Pranyama (control of breath) which cleans blockages the cause of disease and dhyana (meditation and concentration)

Pranayam, Mantra and Gems (The cycle of nutrition of Mind)

Negative impression (The subtle elements) are eliminated mainly through pranayam, which create a special type of sweating that release excess subtle water and each elements, aids in purification of subtle as well as gross body. Sattvic mantras like Om help change rajasic and tamasic pattern in our deep consciousness and make it sattvic. This change makes Chitta receptive to higher influence. Gems posses healing and energy properties. In long term they protect and vitalize body and mind they strengthen our aura and again us with healing force of nature.

CONCLUSION

Based on the above facts, it can be concluded that depressive disorder has a multi factorial aetiopathogenesis with genetic diathesis and stress (physical and psychological) playing a major role and operating via a numbers of pathophysiological mechanisms. In Ayurveda numerous factors are playing a main role for its pathogenesis like Prakruti, Deha Prakruti, Manas Prakruti, Manas Bhav, Triguna and tridoshas etc. Ayurveda is essentially preventive in approach; it has a comprehensive system of curative medicine. Primary goal of treatment for this disease is associated with restoration of the underlying physiology. when the quality of mind is unbalanced by emotional disturbances it has to be treated by psycho-behavioural therapy, controlling particular diet or habits play an important role in controlling tamas and rajas activity of the mind, establishing a satwa predominant state, which is essential for the normal and healthy functioning of the mind. The management involves the optimization in functions of physiological entities (doshas) Vata, Pitta and Kapha at physical level and sattva, rajas, tamas at psychological level. This helps to reach a balanced state of consciousness that is not easily affected by negative emotions and thus helps to get out of depression. This fact needs rigorous research based on scientific data analysis to proof the psychological principles of Ayurveda for better management of depression and promotion of mental health.

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REFERENCES

1. Salmans, Sandra. Depression: Questions You Have – Answers You Need. People's Medical Society; 1997.
2. NIMH, Depression, <http://www.nimh.nih.gov/health/publications/depression/index.shtml#pub3>; 2012.
3. World health organization management, depression, http://www.who.int/mental_health/management/depression/who_paper_depression_wfmh_2012.pdf; 2012.

4. Yoram Cohen, Depression: A Global Crisis, World Mental Health Day, Board Member of WFMH, Vice-President of GAMIAN –Europe and Chairman of Enosh, the Israeli Mental Health Association; 2012.
5. World health organization; 2013.
6. Blazer DG. Mood disorders: epidemiology. In: Sadock BJ, Sadock VA, eds. Comprehensive Textbook of Psychiatry. New York: Lippincott Williams and Wilkins; 2000. p. 1298–1308.
7. Agnivesha, Charaka Samhita, Text with English Translation and Critical Exposition Based on Chakrapanidatta's 'Ayurveda Dipika', by Dr Ram Karan Sharma and Vaidya Bhagvan Dash, seventh edition, Chowkhamba Sanskrit Series Office, Chikitsa Sthana 10/25, vol.III; 2002. p. 447.
8. Eleni Palazidou. The neurobiology of depression, British Medical Bulletin, Oxford Journals; 2012.
9. Chen MC *et al.* Decreased hippocampal volume in healthy girls at risk of depression. Arch Gen Psychiatry 2010; 67: 270-6. <http://dx.doi.org/10.1001/archgenpsychiatry.2009.202>
10. Remick RA. Diagnosis and management of depression in primary care: a clinical update and review. Can Med Assoc J 2002; 167: 1253–60.
11. V Maletic *et al.* Neurobiology of depression: an integrated view of key findings. Int J Clin Pract 2007; 61(12): 2030–2040. <http://dx.doi.org/10.1111/j.1742-1241.2007.01602.x>
12. Barton DA, *et al.* Elevated brain serotonin turnover in patients with depression: Effect of genotype and therapy. Arch Gen Psychiatry 2008; 65: 38–46. <http://dx.doi.org/10.1001/archgenpsychiatry.2007.11>
13. Charak Samhita With Ayurveda Dipika Commentary of Chakrapani Datta, Ed. Yadavji Trikarma Ji Acharya, Chaukhambha Surbharti Prakashan, Varanasi. Charaka samhita Shutrasthan Chapter 25 verse 155
14. Dr Frawley David, Ayurveda and the mind, The Healing of Consciousness, mitilal Banarasidass Publication Private limited, Delhi; 2000. p. 149.
15. <http://ayurvedaterapeutico.org/>; 2014. p. 172.
16. Charak Samhita With Ayurveda Dipika Commentary Of Chakrapani Datta, Ed. Yadavji Trikarma Ji Acharya, Chaukhambha Surbharti Prakashan, Varanasi. Charaka samhita Sharirasthan Chapter 1 verse 30
17. Charak Samhita With Ayurveda Dipika Commentary Of Chakrapani Datta, Ed. Yadavji Trikarma Ji Acharya, Chaukhambha Surbharti Prakashan, Varanasi. Charaka samhita Sharirasthan Chapter 1 verse 19, 20 and 21
18. NIMH, Depression, nimh.nih.gov; 2012.
19. Charak Samhita With Ayurveda Dipika Commentary Of Chakrapani Datta, Ed. Yadavji Trikarma Ji Acharya, Chaukhambha Surbharti Prakashan, Varanasi. Charaka samhita Sharirasthan Chapter 1 verse 99
20. Charak Samhita With Ayurveda Dipika Commentary Of Chakrapani Datta, Ed. Yadavji Trikarma Ji Acharya, Chaukhambha Surbharti Prakashan, Varanasi. Charaka samhita Sharirasthan Chapter 1 verse 100
21. Charak Samhita With Ayurveda Dipika Commentary Of Chakrapani Datta, Ed. Yadavji Trikarma Ji Acharya, Chaukhambha Surbharti Prakashan, Varanasi. Charaka samhita Sharirasthan Chapter 1 verse 101
22. Charak Samhita With Ayurveda Dipika Commentary Of Chakrapani Datta, Ed. Yadavji Trikarma Ji Acharya, Chaukhambha Surbharti Prakashan, Varanasi. Charaka samhita Sharirasthan Chapter 1 verse 102
23. Hou C, Jia F, Liu Y, Li L. Csf serotonin, 5-hydroxyindolacetic acid and neuropeptide y levels in severe major depressive disorder. Brain Res 2006; 1095: 154-158. <http://dx.doi.org/10.1016/j.brainres.2006.04.026>
24. Charak Samhita With Ayurveda Dipika Commentary Of Chakrapani Datta, Ed. Yadavji Trikarma Ji Acharya, Chaukhambha Surbharti Prakashan, Varanasi. Charaka samhita Shutrasthan Chapter 12 verse 8
25. Charak Samhita With Ayurveda Dipika Commentary Of Chakrapani Datta, Ed. Yadavji Trikarma Ji Acharya, Chaukhambha Surbharti Prakashan, Varanasi. Charaka samhita Vimanasthan Chapter 6
26. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders: DSM-IV-TR. 4thed. Washington, DC: American Psychiatric Association; 2000.

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