

**STRESS – MANAGEMENT : LEADS FROM AYURVEDA****Authors: Deepa Arora<sup>1</sup>, Mukesh Kumar<sup>2</sup>, S.D. Dubey<sup>3</sup>, S.K. Baapat<sup>4</sup>**<sup>1,2</sup>Department of Pharmacology, Universal College of Medical Sciences, Bhairahawa, Nepal.,<sup>3</sup>Department of Dravyaguna, I.M.S., B.H.U., Varanasi.<sup>4</sup>Department of Clinical Pharmacology, Nepal Medical College, Kathamandu, Nepal.

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**ABSTRAT:** *The role of stress in the aetiology of several diseases is well recognized in Ayurvedic science and modern medicine. The stress is known as sahasa in Ayurveda. Sahasa by causing ojahksaya (loss of immunity) increases the susceptibility of the body to various diseases. Avoidance of stress is the best strategy for treatment and where it is not possible, the body should be well protected by taking appropriate care of the diet and sleep, sleep here indicates adequate rest required by the body. Further, regular intake of several rasayana herbs to increase the coping capacity of the body is advised. Several of these rasayanas have demonstrated significant stress attenuating effects in animal experimentation and scientific efforts are ongoing to logically utilize rasayana herbal formulation in stress management.*

**INTRODUCTION**

Today, stress has become an inevitable and the most unwanted companion of civilization. In biological terms, stress is defined as anything constituting a threat, real or apparent, which would adversely affect the organism. It can be induced by several factors like environmental changes, extremes of temperature, high altitude, restraints, fear, rage, anxiety, shock, grief, pain and so on. As far as body is able to cope with it, a stress act as a normal stimulus required for our physical and social well being and is better known as “eustress”. On the other hand, stress becomes “distress” when the individual is unable to cope with it. Thus, eustress helps in improving the performance, whereas, distress is known to induce a number of clinical maladies, like hypertension, coronary artery disease, peptic ulcer, asthma, migraine, ulcerative colitis, irritable bowel syndrome, diabetes mellitus, thyrotoxicosis, behavioral

disorders like anxiety and depression and the list is very long.<sup>(1)</sup>

The fact that stress plays an important role in the aetiology of several diseases is well recognized in Ayurveda, where, stress is known as *sahasa*. Caraka advises to avoid sahasa as it adversely affects the body (C.Ni.6/5)<sup>(2)</sup>. Different types of stressors physical, psychological and environmental as they vitiate dosas are implicated in the aetiology of several diseases. Sahasa as it causes *ojahksaya*- loss of immunity (C.Su. 17/76-77) increase the susceptibility of the body to various infectious diseases. Therefore, sahasa should be avoided as far as possible and body should be well protected by taking adequate care of the three sub pillars of life-diet, sleep, and celibacy – *traya upastambhaiti* – *aharah, swapnoh, brahmacyamiti*, (C. Su. 11/35), sleep here indicates adequate rest required by the body.

Further, regular intake of *rasayanas* to increase the coping capacity of the body is advised. Several of these *rasayanas* have demonstrated significant stress attenuating effects in animal experimentation and scientific efforts are ongoing to logically utilize *rasayana* herbal formulation in stress management.

## STRESSORS

Stressors (Stress inducing factors) recognized in Ayurveda can be classified as those causing physical stress, like excessive physical exercise, vigils, fasting, injury, exhaustion, uneven body postures, or psychological, like, anger, fear, grief, anxiety and environmental, like, high altitudes and prolonged exposures to intense heat of sun and fire. (C.Ni. 1/19, 22).

Unhealthy food, irregular and improper routine and mental perturbations like *bhaya* (fear), *krodha* (anger), *soka* (grief), *loba* (greed), *moha* (attachment), *ayasa* (confusion) etc. cause all types of morbidities.(C.Ci.1/2/3)

The role of psychological disorders in the causation of stress has also been stressed by *Cakrapaninidraharatwam rasayanasaya vaikaridraharatwena kim va devavat sarvada prabuddho nidraharitow bhawathi.* (Ibid).

Further, excessive use or inappropriate / unhealthy use of sensory organs also plays an important role in the aetiology of several diseases.

*Tab yatha- kalaviprayah, pragyaparadhah, sabdasprasaruparasagandhascasatmyaiti* (C.Su.28/7)

The judgment capacity of a stressed person is generally compromised and the faulty decision (known as *pragyaparadha* ) is another important aetiological factor for

several diseases (ibid). Thus, a vicious cycle is formed caused lot of stressed to an already stressed person.

Further excess of any normal stimulus is the cause of stress, and the limits of this excess is determined by the coping capacity of the individual. Suppression of natural urges also leads to stress and has been implicated in the aetiology of several diseases.

## MANIFESTATIONS OF STRESS

Stressors like unhealthy food, irregular, and improper routine and mental perturbations can cause all types of morbidities (C. Ci. 1/2/3). There are degenerative changes in all the *dhatu*s (tissues) and the *ojas* (immunity) also deteriorates.

*Vata* is the main *dosa* vitiated by excessive physical stress.

*atiyoga – vyayama – vegasandharana – anasana – abhighata – vyavaya – udwega – soka – sonitatiseka – jagarana – visama sariranyasebhya atisevitebhyo vayuh prakopam apadyate.* (C.Ni. 1/19).

Various disease have been postulated to be a consequence of *vata* vitiated in such a manner, like *jwara* (C.Ni. 2/19), *gulma* (C.Ni. 3/6), *madhumeha* (C.Ni. 4/36), and *sosa* (C.Ni. 6/1).

Psychological stress, like *udvega* (excitement), *soka* (anxiety) also leads to disequilibrium of *vata* *dosa*, whereas, *pitta* is the main *dosa* vitiated by *krodha* (anger)”. *tiksna tapa gni santapa srama krodha visama aaharebhyasca pittam prakopam apadyate...*” (C.Ni. 1/22).

i.e., anger, exhaustion and excessive exposure to intense sun and fire vitiate *pitta*, an important contributory factor in the causation of various diseases.

As per the life-style of the era when these texts were written, physical stress was the most common type of stress. Agriculture was the main profession of a large segment of the society and sophisticated instruments of cultivation were not available. Physical stress mainly vitiates vata and depending on the various contributory factors, several diseases are caused. Hence, no doubt *vata vyadhi* (diseases caused by vitiation of vata) are known as *mahavyadi* (most severe type) and 80 types of diseases are known to be caused by the vitiated vata-*asiti vata vikarah* (C.Su. 20/10). Other features characteristic of physical labourers are regular dietary habits, diet rich in fibres and poor in calories and low in fat content and excessive exposure to sunlight. Thus, commonly *pitta* is the codosa vitiated along with vata and *kapha* remains undisturbed or low. These are difficult to treat cases because of the combination of vata and *pitta*, the *dosas* with opposite characteristic features. Moreover these are poor patients with meagre resources.

Today, however, due to changed life-styles, upper and middle class also face stress, commonly psychological stress. The younger generation in particular suffers from *achievement oriented stress*. This stress differs from *stress in situational crisis*, as it is brought about by the internal pressure to succeed in goals. Achievement stress often causes work alcoholic habits, including lack of sleep and irregular meals. Further, the diet is usually rich in calories and fat and together these vitiate both vata and *kapha*, again *dosas* with opposite characteristics.

## STRESS-MANAGEMENT

The fact that 'prevention is better than cure' is well recognized in Ayurveda, as its foremost objective is maintenance and promotion of the health of the healthy. To prevent stress there are two approaches.

1. To avoid factors inducing stress and vitiating *dosas*; &
2. To increase the coping capacity of the body.

**Avoiding Stress** : *Sahasam sada varjayate* (D. G. Su. 4/7).<sup>(4)</sup> Rationally the best approach is to hit at the root cause, and this is particularly ideal strategy in the stress-management. Stress avoidance has been best appreciated by Caraka who states that in order to protect one's life one should always avoid over-exerting himself. However, in today's world of bottle neck competition, stress is an inevitable companion of success. This stress is justified also because of the results it bring along, however, the stress induced diseases can not be acceptable. Therefore, although stress avoidance is the ideal approach, it is not the most appropriate strategy and stress needs to be managed by strengthening the body's adapting capacity to the stress. The **coping capacity of the body** can be increased by life style modifications, dietary interventions and / or drug treatment, all these being well organized under the umbrella of *rasayana* therapy, one of the eight branches of classical Ayurveda.

Susruta defines *rasayana tantra* as the branch that improves longevity along with physical and mental strength and immunity.

*Rasayana tantram nama vayahsthanam ayur-medha-balakaram roga pharana samartham ca.* (S. Su. 1/7).

Caraka also shares this view-*rasadigrahanena smrtyadyapigrhayante* (C.Ci. 1/1/7-CK).

## Classification of Rasayana

Ayurvedic approach to complete health is not fundamentally drug oriented, drugs being just one aspect of this multidimensional approach. All the same *rasayana* therapy in its purview

includes drugs, dietary regimens and codes of conduct.

*Acara rasayana*, constitutes the balanced use of sense organs, non-violence and self control is advised. This also suggests a regular routine free from stress (C.Ci. 1/4/30-35).

*Ajasrika rasayana* is about observing a nutritious and balanced dietary routine. A balanced diet consisting of all the six rasas and modified as per *desa*, *kala* (climate, environment and season), age and *prakrti* (dosic constitution) of the individual. In disease states, the dietary substances opposite to vitiated dosas are advised. In health, the balanced diet is considered the best rasayana.

*Ausadha rasayana*, i.e., the drug treatment becomes effective only when the first two are appropriately followed. Thus, to obtain the maximum benefits of rasayana therapy, one should regularly observe *acara rasayana* be careful of his diet and intermittently take rasayana drugs after proper purification.

### **Mechanism of action of rasayana**

It has been universally agreed that rasayana therapy is the most appropriate mean of achieving healthy dhatus (tissues). Moreover, rasayana ultimately improves *ojas*, the essence of all dhatus. The healthy dhatus can be obtained by:

1. Directly improving the quality of *posaka rasa*, that in turn nourishes all dhatus. *satavari asparagus racemosus*), *dugdha* (milk) and *ghrta* (ghee) are rasayanas that act in this way.
2. Balancing *agni* (digestion and metabolism) is equally important means of promoting the quality of dhatus. *Bhallataka* (*Semicarpus anacardium*) and *pippali* (*Piper longum*) are rasayanas acting in this way.
3. An optimal competence of *srotas* is another important requisite for a healthy

body. *Guggulu* (*Commiphora mukul*), is the best example of rasayanas effective at the level of srotas. Recently reported hypolipidaemic and antiatherosclerotic activity of guggulu confirms this mode of action.

4. *Dravya-prabhava*:- generally the drugs with properties similar to pacified dosas and depleted dhatus and / or properties opposite to vitiated dosas and aggravated dhatus are used for treatment. Sometimes, however, the beneficial effects of drugs can not be explained in this simple ways. In that case, the drug is said to act by *dravya-prabhava*. Most of the *medhya rasayana act by dravya-prabhava*.

In modern scientific terminology, rasayana drugs are known to have antioxidant, immunomodulator, antidepressant, anxiolytic, antiulcer activity and are also proving effective on the animal models of stress.

*Prasasta-dhatu-janakatwe sati jara-vyadhi-nivartakatwam rasayanatwam-iti laksanam phalati. Rasah sara ojobhutah, tasya ayanam prapti sadhanam rasayanam ojayamitti.* (Ayurveda Darsanam).

### **Potential utility of Antistress Rasayana herbs in Stress Management**

Stress has been postulated to be involved in the aetiopathogenesis of a variety of diseases ranging from psychiatric disorders like depression, anxiety and cognitive dysfunction, immunosuppression, to endocrine disorders including diabetes mellitus, peptic ulcer, hypertension and ulcerative colitis. Modern life style makes us more prone to stress and in turn to stress induced disorders. The routine of tests and treatments is tedious and combined with the economic burden of the disease, causes more stress to the already stressed person. The poor individual is thus trapped in a vicious cycle resulting in the progression of stress

induced diseases. Antistress agents are therefore, required to break this cycle.

Modern system of medicine is still in want of an effective antistress agent. Though drugs like diazepam and fluoxetine are claimed to have antistress activity but these drugs do not fulfill the criteria of a true, safe and specific antistress agent. *Panax ginseng* has been developed as a natural medicine for a variety of clinical disorders in modern medicine and is recognized as an antistress agent. It is, however, now known to induce several adverse effects like 'Ginseng abuse syndrome'. Rasayana herbs have been demonstrated to have potential as antistress agents and the answer to a safe and effective antistress agent probably lies here.

Several rasayana herbs used as antistress agents have shown antioxidant, immunomodulator, hepatoprotective, antidepressant and anxiolytic effects in various experimental and clinical studies. Oxidative free radicals (OFR) are constantly formed in the body and an excessive generation of OFRs or/and defective scavenging mechanisms have been implicated in a diverse range of degenerative disorders. Including rheumatoid arthritis, atherosclerosis, adult respiratory distress syndrome, Parkinson's and Alzheimer's disease. Chronic stress is known to augment the generation of OFRs in various biological systems and to interfere with the activity of enzymes like superoxide dismutase, catalase and glutathione peroxidase which help in the removal of OFRs. Abnormal accumulation of OFRs leads to cell membrane lipid peroxidation. Toxic peroxide metabolites induce excessive cellular injury. Apart from diseases, free radical induced stress has been implicated in aging and immunosuppression. Several rasayana drugs like *Asparagus racemosus*, *Bacopa monnieri*, *Boerhavia diffusa*, *Centella asiatica*, *Convolvulus pluricaulis*, *Embllica officinalis*, *Piper longum*, *Tinospora cordifolia*, *Picrorrhiza kurroa*,

*Curcuma longa*, *Withania somnifera* have been reported to have significant antioxidant action. Since these rasayanas have widespread clinical use, including disease postulated to be induced by OFRs it is possible that, at least a part of their therapeutic effects are due to reduction of oxidative stress. Likewise, antiaging benefits may be due to a similar mechanism.<sup>(5)</sup>

Rasayana herbs with predominant hepatoprotective effects, like *Picrorrhiza kurroa*, *Tinospora cordifolia* possibly help to xenobiotics. Another important use of rasayana is the modulation of immune response, as chronic stress has an immunosuppressive action which adversely affects the defence mechanisms of the body increasing its susceptibility to various diseases. Few herbs that have been shown to possess a significant immunomodulatory action are *Asparagus racemosus*, *Picrorrhiza kurroa*, *Curcuma longa*, *Withania somnifera*, *Tinospora cordifolia*, *Piper longum*, *Azadirachata indica* and *Holorrhena antidysentrica*.<sup>(6,7)</sup> The difference between rasayana drugs and classical immunostimulants is that the former appears to optimize the immune system only when it is compromised. They have been shown to influence both cellular and humoral immunity by acting on immune function mediators. Rasayana drugs are, therefore, likely to be of immense value in drug – and radiation – induced immunosuppression and that seen with prolonged illness and intractable prolonged stress.

## CONCLUSION

The diseases in which the chronic and oxidative stress are implicated in the aetiopathogenesis, there is a logical place for rasayana in their management. However, appropriate scientific evidence needs to be generated for their widespread acceptance. This, in turn, necessitates concerted efforts to investigate the antistress effects of Ayurvedic

herbs and the possible mechanism of their antistress actions. Unfortunately, there are very few planned clinical studies to evaluate the antistress effects of Ayurvedic herbs. Further, most of the pharmacological studies have used acute stress models<sup>(8)</sup> which have little clinical relevance. In order to investigate the antistress activity, the experimental model required is the one of mild, unpredictable and continued prolonged

stress with no option of coping mechanisms. Therefore, for their widespread application as antistress agents in stressful conditions and as adjuvant in the management of chronic diseases, there is an urgent need for multidimensional and planned investigations on Ayurvedic antistress herbs similar to what has been conducted with adaptogenic herbs like, *Panax ginseng* and *Ginkgo biloba*.

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