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REVIEW ARTICLE

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TOXIC STRESS IN CHILDREN AND ITS MANAGEMENT IN AYURVEDA - A CONCEPTUAL STUDY

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ABSTRACT

Stress has different meaning in for different people under different conditions. Hans selye, the often called “father of stress defines “Stress is the nonspecific response of the body to any demand. According to WHO, Stress has been classified as the health epidemic of 21st Century. Research suggest that children are exposed to adverse experience in childhood which results in stress. Learning to deal with these stresses is important for healthy development. The purpose of this article is to provide an outline of stress, response to stress and endocrine mechanism involved, stress consequences and role of Ayurveda in management of stress.

Keywords: Toxic stress, Mana, Manasaroga

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INTRODUCTION

Stress has different meaning in for different people under different conditions. Hans selye, the often called “father of stress defines “Stress is the nonspecific response of the body to any demand. It occurs when environmental demand exceed one’s perception of ability to cope. So stress can affect anyone who feel overwhelmed, even children. While moderate, short lived stress responses in the body can promote growth, toxic stress is a strong unrelieved activity of activation of the body’s stress management system in the absence of protective adult support .Without caring adults to buffer children, the unrelenting stress caused by extreme poverty, neglect, abuse, or severe maternal depression can weaken the architecture of developing brain, with long term consequences of learning, behaviour and both physical and mental health. According to Ayurveda, stress affect Agni, *Dosha, Dhātu, Ojas* which in turn results in both acute and chronic disorder and acceleration of aging process. Understanding *Prakriti* and following *Dinacharya* , *Ritucharya, Vyayama, Sadvrittapalana* and *Rasayana* plays major role in management of stress in Ayurveda.

Stress Types- Positive, Tolerable and Toxic

Positive stress:

A positive stress response is a normal and essential part of healthy development, characterised by brief increase in heart rate and mild elevations in hormone levels. Examples are meeting new people and learning new skills

Tolerable stress:

Tolerable stress response activates the body’s alert system to greater degree as a result of more severe long lasting difficulties, such as loss of loved one, a natural disaster or a frightening injury. If activation is time limited and buffered by relationship with adults who help the child to adapt, the brain and other organs recover from what might otherwise be damaging effects.

Toxic Stress

Toxic stress response can occur when child experiences strong, frequent, and /or prolonged adversity-such as physical or emotional abuse, neglect, caregiver substance abuse or mental illness, exposure to violence, and accumulated burden of family economic hardship-without adequate adult support. This kind of prolonged activation of stress response system can disrupt the brain architecture and other organ system, and increase the risk of stress related disease and cognitive impairment, well into the adult years.

Biological response to stress

Biological response to stress involves activation of three major interrelated systems. First, the stressor is perceived by sensory system of the brain, which evaluates and compares the stressful challenge with the existing state and previous stress experience of the organism. Second, on detection of a stressful challenge to homeostasis, the brain activates the ANS which through the SAM systems triggers a rapid release of catecholamine, noradrenaline, and

adrenaline .Catecholamine increase cardiac output and blood pressure. Catecholamine increases the cardiac output and blood pressure, shunt blood from skin and gut to skeletal muscle, triggers the release of glucose from the liver into blood stream. Third, the brain simultaneously activates the HPA axis which results in release of adrenal glucocorticoids, cortisol in man.

Increased glucocorticoid level enhances the organism's resistance and adaptation to stress. Glucocorticoids act synergistically with adrenaline to increase blood glucose, thus ensuring energy supplies often need to overcome the stress by facilitating fight or flight.

Effects of Toxic Stress

- For the kid with toxic stress, the activity of prefrontal cortex is inhibited in two ways .First, the overactive amygdala sends messages to PFC telling it to decrease its functioning because something scary is happening; you don't want reason in getting in the way of survival .The second is that locus coeruleus is flooding the brain with noradrenaline, compromising the ability to instincts and impulses. This down regulation of the PFC can have different consequences for different people. For some it results in inability to concentrate and solve problems but in others it manifests as impulsive behaviour and aggression.

- When the amygdala gets activated during a major stress event, it sends signals to hippocampus that disrupts its ability to knit together neurons, essentially making it more difficult for the brain to create both short term and long term memories
- Exposure to early childhood adversity affects the way dopamine functions in the brain. A person with four or more ACEs is two and half time likely to smoke, five and half time as likely to be depended on alcohol, and ten times as likely to use intravenous drug as per with person with zero ACEs
- Hormonal system is very sensitive to stress response .Growth hormones, sex hormones (including oestrogen and testosterone), thyroid hormone and insulin tends to decrease during stress.
- Kid with ACE score of four or more was twice likely to be overweight or obese as child with zero ACEs
- Dysregulation of stress response has a profound impact on immune and inflammatory responses because virtually all components of immune system are influenced by stress hormones. It can also lead to increased inflammation, hypersensitivity and even autoimmune disease.

Management in Ayurveda

Vata and *rajas* are the main *dosha* involved in stress. *Rajas* is the factor make

manas chla. So it can make *manas* overactive too. It is regulated by *tamas*. But ignorance of *tamas* can make the rajas entity in a person take a negative decision.

According to *Charaka* of all *manasavyadhi* are due to *Ishtasya alabha* and *Anishtasya labha*, same in case of toxic stress too. These *nidana* results in imbalance of *Manodosha Rajas* and *Tamas*. Person exhibit an exaggerated response to emotional disturbances leading to a clinical manifestation. When these psychic responses continuous for longer period, it override the limit and start influencing bodily *Doshas* especially *Vata Dosha (Prana, Udana, Samana)*, reduction in *Tarpaka Kapha* is seen which results in undernourishment of *Indriyas*. Derangement of *Sadaka Pitta* results in decrease in cognition and these vitiated *Doshas* moves to *Hridaya* and vitiate *Manovahasrotas*. In chronicity it affects *Agni, Dhatu* and *Ojas* resulting in toxic stress. If this condition is left untreated, may results in major psychiatric and somatic illnesses.

Treatment should aim at *Prasanna Athma Indriya Mana* by regulation of *Rajas* and *Vata Dosha*. *Ghrita* like *Brahmi ghrita, Kalyanaka ghrita, Saraswatha ghrita, Aswagandha ghrita* are used because they are *Vata Pitta hara, Medhya* and possess *Samskaarasyanuvartana* property, and *Gritas* is the *Sreshtha Rasayana*. *Medhya dravyas* like *Brahmi, Vacha, Shankhapushpi* are also used. *Shiro abhyanga, Shirodhara, Shiropichu,* and *Shirobasti* with *Vatahara dravya* helpful in

irritability sleep disturbances and cognitive symptoms.

Assessing both *Shareera* and *Manasa Prakriti* of person are important in the management of Stress because each person respond in different way to a given stimulus. (*Vata prakriti* persons are more prone for Stress). The knowledge of *Prakriti* is very essential in designing suitable treatment strategies.

Following *Ritucharya* and *Dinacharya* also plays important role in both prevention and management of stress

Sadvritta paripalana (Code of right conducts) mentioned in Ayurveda not only helps in maintaining their health, but also to built a most civilized society. Which in turn prevents various type of physical and psychological disorders

CONCLUSION

Future of any society is in the hands of children. So preventing our children from toxic stress plays important role in building a healthy society as toxic stress can have damaging effect on learning, behaviour and health across the life. Ayurveda plays an important role in management of stress in present day perspective. *Vata* and *Rajas* are identified as main *Doshas* involved in toxic stress. Treatment has to be aimed at *Prasanna Athmendriya Mana*.

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