



UNIQUE JOURNAL OF AYURVEDIC AND HERBAL MEDICINES

Available online: www.ujconline.net

Review Article

AN ANATOMICAL STUDY OF CHAKRAS IN LIGHT OF ENDOCRINE GLANDS: AN OVERVIEW

Sakshi^{1*}, Mahajan Tanvi², Tiwari Pramod Anand³

¹PG. Scholar, Department of Rachna Sharir Babe Ke Ayurvedic Medical College & Hospital, Daudhar (MOGA), India

²Assistant Professor, Department of Rachna Sharir Babe Ke Ayurvedic Medical College & Hospital, Daudhar (MOGA), India

³Professor & HOD; Department of Rachna Sharir Babe Ke Ayurvedic Medical College & Hospital, Daudhar (MOGA), India

Received 05-08-2016; Revised 03-09-2016; Accepted 01-10-2016

*Corresponding Author: Dr. Sakshi

D/o Sh.S.K.Kaushal Kath Mandi, Charkhi Dadri Distt. Bhiwani Pincode- 127306 HARYANA

ABSTRACT

The human body is a complex entity created by nature. The body consists of different types of organs, organ-system which is interlinked to each other in different perspectives. For the processes like regulation, metabolism, growth development, puberty, tissue functions, control over emotions is being mastered by our endocrine system. Physically, the endocrine system is a collection of hormone producing glands and cells located in various part of body. Hormones and complex chemical substances are secreted in the blood stream and regulate body functions. Their secretions are controlled in a number of ways e.g. by neural control, regulatory feedback loops or according to various cyclical, rhythmical patterns of release.

The *chakras* are not really gross anatomical entities but are in the form of concentrated whirlpools of energy. They are centers from where the energy flows from one point to the other. The *chakras* represent the stages of spiritual growth from lowest state of awareness up to the highest level of consciousness. On a physical level, *chakras* are associated with the major nerve plexuses and endocrine glands in the body. Proper functioning of our body, organs endocrine system is necessary for good health and well-being. Each *chakra* is linked with the endocrine gland and to interpret this relation this article has been put forward.

Keywords: Hormones, Energy, *Kundalini*, *Prana*, *Nadis*, *Chakras*, Glands.

INTRODUCTION

The word *chakra* means wheel, energy whirlpool. The *chakras* on a physical level are associated with nerve plexuses, endocrine glands in the body. The *chakras* are denser than the auras¹. The *chakra* is considered to be the centre of *shakti* as vital force. They are connected to a network of psychic channels called *nadis*, which corresponds to nerve but are more subtle. They function in receiving the *pranic* energy & further transformation is done. In this context, the *chakras* and *nadis* work together in regard to transformation of energy from one point to another point². On a physical level, *chakras* are associated with the major nerve plexuses and endocrine glands in the body³.

Kundalini has a very close relation with *nadis* and *chakras* of body. The 3 main *nadis* in our body are *Ida*, *Pingala* and *Sushumna*. The *Ida*, *Pingala nadi* runs respectively through left and right nostrils and oriented along the *sushumna nadi*. Their ends (upper) meet in the *Aagya chakra* having *pingala* on right and *ida* on the left and in centre with *sushumna*⁴. The journey of *kundalini* from *muladhara* to the higher *chakra*

(*sahasara chakra*) is considered the spiritual reflection where *Shakti* unites with the *Shiva*. The *chakras* are symbolized as lotus flower, each *chakra* with different number of petals, colour, *beeja mantra*, attribute etc. and they can be illustrated as-

- MULADHARA CHAKRA-

It is the seat of dormant lying *kundalini shakti* in a coiled-serpent form. From this *chakra pranic* energy travels down up to the other succeeding *chakras*, the *chakra* is located at the region between genitals and anus. If we see on anatomical level, no such endocrine glands are seated here. But in different articles a correlation to adrenals has been done. Adrenal glands are located above the kidneys, posterior to umbilicus. The basis for this can be justified in view of embryology; where gonads, supra renal start developing in same place⁵. The adrenals consists of 2 parts (medulla & cortex) and production of cortisol regulates glucose levels and inflammation of tissues. The hormone epinephrine which helps in coping up with physical, mental stress by increasing blood pressure, heart rate and other actions.

- **SWADISTHANA CHAKRA-**

The *chakra* is related to creativity, knowledge etc. and it is located parallel to the gonads (testes & ovaries). It functions as in assimilation, menstrual secretion. Mostly it has control over the sex hormones. Gonads are main source of our sex hormones which is the creator of new life with help of ovum & sperm. They are responsible for feminine and masculine characteristics.

- **MANIPURA CHAKRA-**

The *chakra* is located between navel and solar plexuses which is core of our personality, our identity. The *chakra* allows you to transform inertia into actions and movements. It is related to metabolic and digestive system. Here *Prana* and *Samana Vayu* control activities of region. The *chakra* is correlated with pancreas and outer adrenal gland along with cortex. The pancreas has 2 roles: digestive as well as hormonal. It secretes digestive enzymes & other helps in regulating glucose level in blood by secretion of insulin.

- **ANNAHATA CHAKRA-**

It is the centre of *chakra* system. Its physical location in body is the heart, upper chest. It is the equilibrium point between the lower 3 *chakras* and upper 3 *chakras*. It is seat of divine self, related to emotions, peace love, understanding etc. it is related to heart, lungs, immune and endocrine system. The thymus gland is located in the upper part of chest specifically front & above heart and behind sternum. This gland is most active in children and is concerned with immune system.

- **VISHUDHA CHAKRA-**

It is located at 4th cervical vertebrae. It is centre for pure consciousness, creativity, discrimination etc. it has an ability to allow or block the flow of energy throughout the energy system. The *chakra* is paralleled to thyroid gland which produces thyroid hormones responsible for growth, maturation, reproduction functions etc and it helps in maintaining proper metabolism of calcium.

- **AAGYA CHAKRA-**

It is related to mental clarity, spiritual thinking, vision, the *chakra* of time awareness, etc. The *chakra* provides us direct, absolute perception of reality on central nervous system. It is linked to the pituitary gland and that is considered to be master gland, due to its central role in endocrine physiological processes. In particular, the thyroid, gonads and supra renal cortex are pituitary dependent endocrine glands and regulated by hypothalamus and adeno- hypophysis in an integrated neuro endocrine network.

Some scholars relate it with pineal gland also. The way of thinking may differ but recent studies have shown that pineal gland produces hormones that may have an important regulatory influence on many endocrine organs⁶.

The pineal gland produces melatonin hormone which regulates our sleep and awakening.

It is light sensitive gland secreting melatonin which regulates instincts of going to sleep or awakening condition⁷. The pineal gland is situated in centre of brain and its main function is to make neuro-hormones which affects both brain and the body. The pineal gland works together with pituitary through hypothalamus controlling the endocrine system. The form of *aagya chakra* is traditionally depicted as bi-lobed and we can understand this to be the joining of two glands (pituitary, pineal) which makes very good sense from a neuro-endocrinological point of view⁸.

- **SAHA STRA CHAKRA-**

It is located at the top of head. It is said to be *chakra* of consciousness and the master *chakra* which further controls other *chakras*. It is the connection between the higher self to the divine (Lord Shiva). The *Chakra* has a control over the pituitary gland by secretion of releasing factors which further gets stimulated to pour their secretions.

For instance, the hypothalamus makes thyroid releasing hormone (TRH) which stimulate the pituitary to make thyrotropin (TSH) which stimulate thyroid to make thyroid.

Table 1: Illustrating the Relation of Chakra and Endocrine glands

Sr. No	Name Of Chakra	Possible Correlation	Anatomical Site
1.	Muladhara chakra	Adrenals	Above kidneys
2.	Swadisthana chakra	Gonads (testis, ovaries)	Testis are in scrotal sac & ovaries are on either side of uterus
3.	Manipura chakra	Pancreas	Lumbar vertebra(L2,L3)
4.	Anahata chakra	Thymus gland	Behind sternum between lungs
5.	Vishudhi chakra	Thyroid gland	Anterior of neck against (C5-C7,T1)
6.	Aagya chakra	Pineal & pituitary gland	Below corpus callosum & hypophyseal fossa
7.	Sahastra chakra	Hypothalamus gland	Floor of 3 rd ventricle, Hypothalamic sulcus

DISCUSSION

The *Chakra* and glands work together in coordination. Disturbances in the subtle energy of *chakra* translate into physical manifestation and symptoms which are likely associated with corresponding glands and organs.

The correlation according to the contemporary science as central nervous system [*Sushmna*], spinal cord around which, on either side, runs the autonomic nervous system having two aspects; the parasympathetic [*Ida*] and sympathetic [*Pingala*].

The hypothalamus and adeno-hypophysis are central to most regulatory feedback loops within the endocrine system. The feedback has a positive and negative control over the target⁹.

Each gland discussed here is in relation to the anatomical location. The *muladhara chakra* is related to adrenals because during developmental period, the adrenal cortex develops from the coelomic epithelium (in region of angle between developing gonads & root of dorsal mesentery)¹⁰. The medulla part develops from the neural crest. In case of *swadisthana chakra*, position of gonads is under this chakra and other than

these gonads no such other glands are located here. The *manipura chakra* is associated with the solar plexus i.e. the energy house. The association is regarded with the digestive power and that is the region, where the process of digestion takes place. In the second part of duodenum all secretion from pancreas, gall bladder is poured. Here pancreas is a gland associated with metabolism and endocrinal function.

The *anahata chakra* is related with the thymus gland which is associated with the immunity functions. The *vishuddhi chakra* is linked to thyroid gland as it is situated against vertebra (C5, C6, C7, T1), in front of 4th or 5th tracheal ring. This gland is associated with growth, metabolism and reproductive functions.

The *Aagya chakra* has been related to pituitary gland and pineal too. Both of glands are situated, like pineal below the corpus callosum and pituitary in the hypophyseal fossa in floor of 3rd ventricle. The pituitary being the master gland has an access over varied organs. But the overall control happens to be under the hypothalamus. This hypothalamus gland is associated with *sahasra chakra* and located in the floor of third ventricle or hypothalamic sulcus. Endocrinal control is carried by formation of releasing factor or release inhibiting hormones and regulates secretion by pars anterior of hypophysis cerebri. Hormones like oxytocin and vasopressin are secreted here and transported to posterior lobe of hypophysis cerebri¹¹.

Whenever there is blockage in the pathway of flow of energy, physical symptoms are shown in form of diseases. If the *chakra* is over active or under active they manifest specific type of disturbances in the body¹². Each *chakra* is connected, so if any *chakra* faces disturbances, it will affect the other *chakra* too. For instance, the hypo & hyper secretion of the glands (like endocrine glands) can result in the pathogenesis of a disease with various symptoms. There is profound relationship between endocrine glands with the nervous system. Due to intercellular communication signals and further processes are carried¹³.

So these *chakras* and glands are of equal importance in our body and helps in maintaining the balance between them ultimately leads to free flow of energy and healthy state is maintained.

CONCLUSION

They interact with the physical body through two major vehicles, endocrine system and nervous system. When an individual follows a proper regime of diet, exercise, meditation, he or she can achieve mental, emotional and spiritual well-being. In modern science research, it has been said that *chakra* have physical manifestation as well. They are the metaphysical counterparts to endocrine glands.

Relationship between Endocrine Glands and Nervous System: Although both the endocrine and nervous systems operate by intercellular communication, they differ in the mode, degree or localization of effects produced. The autonomic nervous system uses impulse conduction, neurotransmitters release to transmit information; the responses induced are rapid, localized. The endocrine system consists of cells, glands and effects are specific and often prolonged.

Thus, it may be possible that the impact of these respective organs have a control over the *chakra* or vice versa.

REFERENCES

1. Mehta Rohit; Edited: The Science of Meditation; Motilal Banarasi Das Publishers: New Delhi.
2. Singh.R.H; Edited The Holistic Principles of Ayurvedic Medicine; Reprint; Chaukhambha Sanskrit Pratisthana: New Delhi; 2012; 67.
3. Singh.R.H; Edited The Holistic Principles of Ayurvedic Medicine; Reprint; Chaukhambha Sanskrit Pratisthana: New Delhi; 2012; 69.
4. Satyananda, Swami Saraswati. The Pineal Gland (Ajna Chakra); Bihar School of Yoga; Bihar, India, 1972.
5. Vishram Singh; Edited Textbook of Clinical Embryology 1st Edition; Reprinted 2013; Elsevier, Pg-276.
6. BD Chaurasia; Edited Human Anatomy 5th Edition; Reprint 2012: New Delhi; CBS Publishers & Distributors; 2012; 105: 171.
7. <http://> Johnson, L.Y (1982). The Pineal as a modulator of the Adrenal and Thyroid Axes. In Reiter, R.J., The Pineal Gland, Vol. III: Extra-reproductive Effects. C.R.C. Press Inc., Boca Raton, Florida, USA.
8. Roney-Dougal, S.M.; On A Possible Psychophysiology of the Yogic Chakra System.
9. Susan Standring, Edited Gray's Anatomy, 39th edition, Churchill Livingstone, Elsevier, 2008; 178-179.
10. Vishram Singh; Edited Textbook of Clinical Embryology 1st Edition; Reprinted 2013; Elsevier; Pg-277.
11. BD Chaurasia; Edited Human Anatomy 5th Edition; Reprint: New Delhi; CBS Publishers & Distributors, 2012; 414.
12. Satyananda, Swami Saraswati. Kundalini Yoga. Bihar School of Yoga, Bihar, India, 1972
13. Susan Standring, Edited Gray's Anatomy, 39th edition, Churchill Livingstone, Elsevier, 2008; 178-179.

Source of support: Nil, Conflict of interest: None Declared