



Research Article

PHYSIOLOGICAL CORRELATION OF CONCEPT OF STHANYA PRAVARTHANA IN AYURVEDA AND LACTATION – A REVIEW

Sonia Mathew., Ajitha K., Anjali Sivaram and Hakkeem Panthappulan

Department of Kriyasareera (Physiology) Government Ayurveda College, Kannur, Kerala, India

ARTICLE INFO

Article History:

Received 12th February, 2021

Received in revised form 23rd

March, 2021

Accepted 7th April, 2021

Published online 28th May, 2021

ABSTRACT

All mammalian species produces milk, but the composition of milk for each species varies widely and other kinds of milk are often vary different from human milk. The sweet essence of rasa produced by digested food and having reached the breast from the entire body is known as *sthanyam*(breast milk).Constant affection is the cause of secretion of *sthanyam*. So through this article discussed the physiology of *sthanyapravarthana* and lactation.

Key words:

Sthanyam, *Sthanyapravarthana*, Lactation

Copyright©2021 **Sonia Mathew et al.** This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Breast feeding is the ideal form of infant feeding. It is crucial for lifelong health and wellbeing. The main functions of breast milk are providing nourishment, protection against infection and inflammation. It also contribute the development of immune system and gut microbe¹. Breast milk is the primary source of nutrition for newborns contains fat, proteins, carbohydrates, minerals and vitamins. Breast feeding also provides health benefits for the mother². It assists the uterus in returning to its pre pregnancy size and reduces postpartum bleeding through the production of oxytocin. Lactation can reduce the risk of breast cancer. It also reduces the risk of diabetes mellitus for both mother and baby³.

In Ayurvedic view, the *ahara rasa* which is the essence of digestion, forms *sthanyam* in breast⁴. Hence *sthanyam* is termed as the *upadhatu* of *rasa*⁵. *Sthanyam* is predominant of *jala mahabhuta*. So, it is the best nourishing food for infant. In Ayurveda, easy purity test of breast milk is explained, by the use of water. If the breast milk is mixes with water, which is considered as pure. If breast milk is sink, which is *kaphadusht sthanyam*. If the breast milk is float, which is *vata dushta sthanyam*. If the breast milk is remains at any level and produces streaks in water, which is *pitha dushta sthanyam*⁶.

In the current situation during the outbreak of covid 19, all are more conscious about immunity and good health. So, in this situation the importance of breast feeding is discussed. Infectious diseases among breastfed babies are in lower rates.

*Corresponding author: **Sonia Mathew**

Department of Kriyasareera (Physiology) Government Ayurveda College, Kannur, Kerala, India

Because, when a lactating mother is exposed to an infectious agent, her immune system begins to produce secretory immunoglobulin (s-IgA). This IgA is secreted into her breast milk and consumed by her nursing baby. The child's own immunity system may also producing s-IgA, but children under the age of two have immune responses that are sometimes incapable of preventing disease. The consumption of the mother's s-IgA not only provide active resistance to disease, it also stimulate the production of additional s-IgA in the infant, resulting in stronger immune responses among breastfed infants than in their formula fed peers⁷.

Now universally recognized that there is no commercial formula that can substitute the breast milk.

DISCUSSION

Lactation is defined as the process of synthesis, secretion and ejection of milk⁸. It is a neuro- hormonal regulation. The whole processes are associated with various reflex activities. Reflexes are mainly classified as conditional and unconditional. The conditional reflexes are develop after birth. Such reflexes are acquired after conditioning like previous training. The unconditional reflexes are present since birth and not require any previous training⁹. So, it is also called as inborn reflexes. Such inborn reflexes present in infant for easy breast feeding are rooting and sucking reflexes¹⁰.

In rooting reflex, the baby will turn his/her head and open the mouth to follow and rooting in the direction of the stroking or touching. This helps the baby to find the breast. Rooting help the baby become ready to suck, when the roof of the baby's

mouth is touched. Then sucking reflex acts, the baby will begin to suck¹¹.

In Ayurvedic view the secretion of *sthanya* (breast milk) is by *apathya sparsanam* (touch of baby), *apathya darsanam* (seeing of baby), *apathya smaranam* (memories about baby) and *apathya sareera grahanam* (by holding the baby)¹². The physiology behind the *Sthanya pravarthana* as the physiology of lactation.

Apathya sparsanam and Sareera grahanam

Breast milk is secreted by touching and holding of child. The physiology of milk secretion behind this concept is prolactin reflex and milk ejection reflex (oxytocin reflex). Lactation involve two processes, milk secretion and milk ejection.

Milk secretion is the synthesis of milk by alveolar epithelium and its passage through the duct system.

Lactogenesis

Small amount of milk secretion occur sat later months of pregnancy, a free flow of milk occurs only after the delivery of the child. The first milk, colostrumisrich in various nutrients. So it is advisable that the mother should start feeding as soon as possible after birth of baby¹³. It contains more protein and less fat than mature milk.

In the first hour of life, the baby is most alert and able to imprint the unique suckling movements necessary for successful breast feeding. During this entire first hour of life, it is important to keep the baby with the mother, ideally skin to skin¹⁴. Uncomfortable distractions and separations should be avoided until after the first feed.

Prolactin is responsible for lactogenesis. The activity of prolactin is inhibited by estrogen and progesterone. Immediately after the delivery of the baby and expulsion of placenta, there is sudden decline of estrogen and progesterone. Now the prolactin is free to exert its action on breasts and to promote lactogenesis¹⁵.

Maintenance of milk secretion (Galactopoiesis)

Galactopoiesis depends upon the hormones like growth hormone, thyroxin and cortisol, which are essential for continuous supply of glucose, amino acids, fatty acids, calcium and other substances necessary for the milk production¹⁶.

Sucking of nipple by the baby is responsible for continuous milk production. When the baby sucks, the impulses from touch receptors around the nipple stimulate hypothalamus. Hypothalamus releases some prolactin releasing factors, which cause the prolactin secretion from anterior pituitary. Prolactin acts on glandular tissue and maintains the functional activity of breast.

Action of oxytocin on mammary glands – Milk ejection

Oxytocin causes ejection of milk from the mammary glands. Ducts of the mammary glands are lined by myoepithelial cells. Oxytocin causes contraction of the myoepithelial cells and flow of milk from alveoli of mammary glands to the exterior through duct system and nipple. The process by which the milk is ejected from alveoli of mammary glands is called milk ejection reflex or milk let down reflex¹⁷. In Ayurveda, secretion of breast milk is like the secretion of semen. Because secretion of semen also by the action of oxytocin.

Milk ejection reflex

Plenty of touch receptors are present on the mammary glands, particularly around the nipple. When the infant sucked mother nipple, the touch receptors are stimulated. The impulses discharged from touch receptors are carried by the afferent nerve fibers to paraventricular and supra optic nuclei of hypothalamus. Then hypothalamus, in turn sends impulses to the posterior pituitary through hypothalamo - hypophyseal tract. Afferent impulses cause release of oxytocin into the blood. When the hormone reach the mammary gland, it causes contraction of myoepithelial cells, resulting in ejection of milk from mammary glands. It is a neuro endocrine reflex. During this reflex, large amount of oxytocin is released by positive feedback mechanism¹⁸.

Apathya darsanam and Apathya smaranam

Milk secretion is also secreted by thought and sight of the infant. The physiology behind this concept as the actions of some neuromodulators.

Due to the busy working schedule, the mothers are not able to feed her babies for adequate time. After a few months of feeding, they might be busy with their own works in different working places. Then the baby will be habituated for bootle feeding. But, by the action of neuromodulators, the lactating woman who are even away from the baby ,wetting of breast occurs just by hearing his/her voice through phone and just thinking about them.

Neuromodulators are the chemical messengers, which modifies and regulate activities that takes place during thesynaptictransmission¹⁹. Enkephalin and Endorphin are the two neuromodulators have some role in lacto genesis. These are opioid peptides. Ekephalins are natural opiate peptides derived from the precursor pro-enkephalin, these peptides are present in then erveendings in many parts offorebrain, substantiagelatinosa of brain stem, spinal cord and GIT²⁰. Endorphins are large peptides derived from the precurs or pro-opiomelanocortin. Endorphin are predominant in diencephalicregion particularly hypothalamus, anterior and intermediatelobes of pituitarygland.²¹

The cellular localization of enkephalin suggests that its role is to act on opiate receptor positioned on terminals of sensory pain fibers and inhibit the release of neurotransmitters such as substance P, vasopressin or dopamine.²²Because of this mechanism, the mother doesn't feel pain at the time of sucking of breast.

SPEOS (Stimulation of Endorphin, oxytocin and suggestive intervention to improvement of breastfeeding production) is one of the preferred interventions to stimulate the release of oxytocin through oxytocin and endorphin massage, provide comfort and faster confidence in the mother that breast milk must come out and mothers can breast feed exclusively.²³

Endorphin massage can stimulate the release of endorphin hormones and can stimulate the appearance of prolactin and oxytocin reflexes to increase the volume and production of milk.²⁴

CONCLUSION

Breastfeeding is the best way to protect the newborns soon after the birth in terms of love, affection and nutrition. So breast feeding entertained exclusively for six months and

should continued up to 2 years accompanied by sufficient quantities of nutritionally adequate solid, semisolid and soft food.

During the first hour of life, it is important to keep the baby with the mother, ideally skin to skin. This help for the easy secretion and sucking of breast milk. Through this a healthy bond create between infant and mother. In Ayurveda, the entire factors responsible for the lactation is explained as *sthanya pravriti*. The factors which result for milk ejection are thought, sight, touch and physical contact of the child. The whole process of lactation is a neuro hormonal regulation.

Stress and strain are the main cause for *sthanya kshaya* (decreased breast milk). Lactation is the processes associated with psychosomatic condition and life style. Breast milk is the best gift of a mother can give her baby. So the main factor responsible for the secretion of breast milk is the constant affection.

References

1. Foad Alimoradi *et al.* An overview of importance of breast feeding: published online 2014 may 1.
2. Jornal of human lactation – published online on May edition-IF 2.205
3. Susrutha samhitha with english translation of text and dalhana's commentary along with critical notes – Volume II – Edited and translated by Priya vrat sharma-Chaukhamba visvabharati –Varanasi- nidana sthana 10th chapter page no 70.
4. Agnivesa's Caraka samhitha by Dr.R.K .Sharma and vaidya Bhagwan Dash – Chowkhamba Sanskrit studies, Varanasi- 2014.
5. Vagbhata's Ashtanga Hridayam-Text, English translational, Note, Appendixindex- Translated by Prof.K.R. Srikantha Murthy –ChoukhambaKrishnadas Academy-Volume II-Krishnadas Ayurveda Series.
6. S.G.J.Clark and Timothy .J.Bunger -The Benefits of breastfeeding-an introduction for health educators: *California Journal of health promotion* 2003, Volume 1, issue-3.
7. A.Santhosh Kumar –Paediatric Clinical Examination – 4th edition, Paras Medical Publisher, Hyderabad,New Delhi.
8. Robena Moisiu *et al*- Monitoring the implementation of breastfeeding within the first hour of life” at a university hospital of obstetrics- Gynecology in Tirana, Albania.
9. K sembulingam *et al* -Essentials of medical physiology: 6thedition page no 791-792
10. Indu khurana *et al* -Textbook of medical physiology - 3rd edition
11. Paula J Brunton - Endogenous opioid signaling in the brain during pregnancy and lactation –cell and tissue research 375(1)69-83, 2019.
12. Indah Lestari *et al*-SPEOS(Stimulation of endorphin, oxytocinand suggestive intervention to improvement of breast feeding production – Faculty of Nursing ,Institute of health science –Indonesia

How to cite this article:

Sonia Mathew *et al* (2021) ' Physiological Correlation of Concept of Sthanya Pravarthana in Ayurveda and lactation – a review', *International Journal of Current Advanced Research*, 10(05), pp. 24359-24361.
DOI: <http://dx.doi.org/10.24327/ijcar.2021.24361.4832>
