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Critical Analysis of *Pranapratyagamana* w.s.r. to Neonatal Resuscitation: Classical & Modern View

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ABSTRACT

The term *Pranapratyagamana* used in *Caraka Samhita* is very much similar to the neonatal resuscitation. This word is used in the text of *Navajata Shishu Paricarya* i.e. Newborn Care guidelines by all ancient scholars of Ayurveda. The word *Prana* means life and *Pratyagamana* means coming back or arrival i.e. word *Pranapratyagamana* means coming back or reappearance of life or in other words re-establishment of respiration or spontaneous breathing of neonate. The Aim & Objective of this article is to explore the ancient neonatal resuscitation methodology i.e. *Pranapratyagamana* procedures in newborns used by various *Acaryas* of that time and its scientific comparison.

KEYWORDS

Pranapratyagamana, Navajata shishu, Resuscitation, Asphyxia

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INTRODUCTION

Infant mortality rate is very sensitive indicator of the socio economic development including the health care status of any country. According to latest data the infant mortality rate in India is 36 /1000 live births including Neonatal mortality rate 24/1000 live births and Perinatal mortality rate 20/1000 live births i.e. NMR constitutes approximate 65% of IMR and leading causes of neonatal mortality in India are neonatal septicemia in 52% cases, birth asphyxia in 20% cases, Prematurity in 15% cases and congenital malformations in 3-5 % cases[1]. To reduce Neonatal morality rate, we must follow all the guidelines and basics of Newborn care and Newborn resuscitation provided by World Health Organization. In *Ayurvedic* Texts, all *Acaryas* have given prime importance to follow the protocols of Navajata *shishu paricarya*, which are known as Newborn care protocols presently. Almost all *Acaryas* have explained all neonatal care protocols in very scientific manner by using available means of that time period, e.g. *Mukha vishodhana*[2,3], *Nabhi naal chhedana*[3,4,5], *Garbhodaka Vamana*[6] and the most important *Prana*pratyagamana[7,8,9]. These days above procedures are continuously followed by practitioners with the help of some advanced techniques e.g. *mukha vishodhana* (oral cavity cleaning) was done by using *Saindhava Sarpi*[2,3] (mixture of rock salt and ghee) in ancient time while now a days it is done with the help of mucus sucker or, suction machine but aim of both era's procedure is same i.e. cleaning of mucus or mucus plug from oropharyngeal route to maintain the airway of neonate, so that the neonate could breathe spontaneously and hypoxia could be resolved.

Prana Pratyagamana Vs Neonatal Resuscitation Methodology:

First textual reference of resuscitation was found in *Caraka Samhita*[7]. *Punarvasu Atreya* has described the concept of initial steps of resuscitation to revive the baby from apparent death just after birth. The same concept was given by other ancient scholars. *Acarya Vagbhatta* has explained the signs and symptoms of an asphyxiated newborn as *prabala moha*[9] (deep unconsciousness) and *Jwara*[9](fever), weak cry and *Anawasthita Shlesma Deha Dhatu*[9] (unsteady state of all the tissues of body). He also described general and specific measures for resuscitation of a newborn till stabilization of baby's vital signs. Steps of *Pranapratyagamana* methodology followed by ancient scholars are as follows:

a) "***Ashmanohasanghattanam karnayomule"***[7,8,9] i.e. *Acarya Caraka* has

said that the baby must be revived immediately or if the baby does not cry just after birth then it becomes essential to revive the baby by striking two stones together near the base of ear. *Acarya Vagbhatta* also said for striking of two stones near the baby's ear and chanting certain mantras[8,9](holy hymns) as the part of *Daiva Vyapasrya Chikitsa*. This procedure makes some sense, means step is done to provide auditory stimulus which can lead to stimulate respiratory centre[10] so that asphyxiated neonate could breathe.

b) "S***hitodkenoshnodakena va mukhparishekah"***[7,8,9] i.e. sprinkling Luke warm or slightly cold water (as per season) over the face of baby. This step is done to stimulate tactile receptors present on the face; it further stimulated facial nerves, so that impulses reach to respiratory centre through reticular fibers and once respiratory centre stimulated it initiated respiratory effort[11].

c) ***"Krishnakapalikashurpena Chainamabhinishpuniyuryadyahcheshta h"***[7,8,9] Again *Acaryas* have explained that if the baby does not respond yet by above procedure then third step of *Prananpratyagamana* procedure should be done i.e. start fanning with winnowing basket made of *Krishna kapalika* (black surfaced bowel shaped)[12]. This process should be continued until the signs of life come back. Repeated and alternate light and dark shadow caused by movement of black basket results into stimulation of light reflexes followed by optic nerve & respiratory centre stimulation which causes initiation of respiration. This type of light or photostimulation is considerd as strongest stimuli to initiate breathing by provokoing respiratory centre through the optic nerve[12]. According to modern concept the primary aim of resuscitation at birth is to prevent hypothermia, provide adequate oxygenation to all organs and tissues in an asphyxiated baby and for these following actions should be done.

a) **Temperature maintenance[13]** to prevent hypothermia of asphyxiated newborn and for this baby must be placed in dry as well as warm environment or under overhead radiant heat warmer especially in case of preterm and low birth weight neonate. Additional warming techniques for preterm neonates are recommended i.e. maintain delivery room's temperature up to 28^0C – 30^0C, placing the baby in exothermic mattress and under radiant heat warmer.

b) **Patent airway Maintenance[13]**: To maintain the patency of airway positioning, suctioning or sometimes endotracheal intubation is required to be done. First of all keep the baby in supine position with slightly extended neck with the help of

shoulder pillow then turn the head to one side which facilitate the collection of fluid or secretions in the mouth not in oropharyngeal passage and then do suction first from each nostril followed by oral cavity with the help of mucus sucker.

c) **Breathing maintenance**[13]: Third action to be done immediately for revival of the distressed baby is maintenance of breathing. Drying of body and head of the baby often helps to provide tactile stimulus which will stimulate breathing and also prevent hypothermia so must be carried out simultaneously during above steps but if it does not work then Additional tactile stimulation by flicking the sole or by gently rubbing newborn's back or trunk must be provided. If these all procedures do not work then provide free flow of oxygen (80 -100%) @ 5-6 l/min. via nasal tube or mask. If free flow of oxygen is not available the resuscitation should be initiated with room air by using Ambu bag i.e. Bag &Mask ventilation. To perform the procedure, resuscitator should stand at the head side of neonate, use proper size mask and continue the bagging @ 40-60 per min for 30 seconds then evaluate the baby. If the baby's vitals do not improve by this, the effective ventilation may be given for next 30 seconds. If baby does not respond yet i.e BMV is not effective and prolonged positive pressure ventilation is needed then consider endotracheal intubation.

d) **Circulation maintenance**[13]: Fourth action which should be considered for maintenance of circulation is chest compression. It is very important procedure to improve the circulation in compromised baby. It is indicated when neonate's heart rate is going below 60 per minute in spite of providing adequate positive pressure ventilation with supplementary oxygen for 30 seconds via BMV or ETT. It is done by using two techniques, two thumb encircling hands method & two finger technique. Baby should be ventilated for 120 cycles of events per minute. And lastly medications can be used in neonatal resuscitation if the asphyxiated baby could not be revived even after using above said measures. Drugs used in neonatal procedures are as following: adrenaline, volume expander (isotonic crystalloid solutions or blood), sodium bicarbonate etc. after establishing adequate ventilation and circulation the infant should be shifted in NICU for monitoring and anticipatory care.

CONCLUSION

Awareness of each step for care of a newborn must be known and followed by a health care professional, as well as resuscitation procedure training should be

given to all the health care professional so that NMR and IMR of our country could be reduced to the least number which will lead to make healthy population and healthy society to contribute the best of effort for development of country. From above description it is evident that primary aim of *Pranapratyagamana* used by ancient as well as modern scholars is similar which helps to revive the neonate ultimately. Hence, *Pranpratyagaman* is surely the first footstep of modern neonatal resuscitation. This gives a clear idea of existence of prevailed neonatology in Ayurveda viz. the science of life.

REFERENCES

1. The Short Text Book of Pediatrics Edited by Dr Suraj Gupte, Jaypee Brother Medical Publishers (P) Ltd., Twelfth Edition;2016, Section 3, Chapter 17, Pg.No.267.

2. Caraka Samhita "Vidyotini" Hindi Commentary by Pt. Sastri Kasinatha and Chaturvedi Gorakhanatha, edited by Pt. Rajeswara Datta Sastri, Chaukhambha Bharti Academy, Varanasi, Ed. Reprint, 2005. Part I, Sharira Sthana 8/ 43, p.n.

3. Susruta Samhita, Hindi Commentary "Ayurveda Tatva Sandipika" by Kaviraj Ambika Dutta Shastri, Chaukhambha Sanskrit Sansthan,Varanasi, Ed. Reprint, 2008. Part I, Sharira sthana 10/12, p.n.

4. Caraka Samhita "Vidyotini" Hindi Commentary by Pt. Sastri Kasinatha and Chaturvedi Gorakhanatha, edited by Pt. Rajeswara Datta Sastri, Chaukhambha Bharti Academy, Varanasi, Ed. Reprint, 2005. Part I, Sharira Sthana 8/ 44, p.n.

5. Ashtanga Hridayama of Vagbhata "Nirmala" Hindi Commentary by Dr. Brahmanand Tripathi, Chaukhambha Sanskrita Pratishthana, Delhi, Ed. Reprint 2009, Uttara Sthanam 1/5, p.n. 877.

6. Ashtanga Hridayama of Vagbhata "Nirmala" Hindi Commentary by Dr. Brahmanand Tripathi, Chaukhambha Sanskrita Pratishthana, Delhi, Ed. Reprint 2009, Uttara sthanam 1/10, p.n. 875

7. Caraka Samhita "Vidyotini" Hindi Commentary by Pt. Sastri Kasinatha and Chaturvedi Gorakhanatha, edited by Pt. Rajeswara Datta Sastri, Chaukhambha Bharti Academy, Varanasi, Ed. Reprint, 2005. Part I, Sharira Sthana 8/ 42, p.n.

8. Ashtanga Hridayama of Vagbhata "Nirmala" Hindi Commentary by Dr. Brahmanand Tripathi, Chaukhambha Sanskrita Pratishthana, Delhi, Ed. Reprint 2009, Uttara sthanam 1/1-4, p.n. 875

9. Ashtanga Sangraha of Vagbhata edited with the Vidyotini Hindi Commentary by Kaviraj Atri Dev Gupta, Chaukhambha Sanskrit Sansthan Varanasi, Ed. 2003, Uttarasthana 1/3-4.

10. Text Book of Bal Roga, Kaumarbhritya, Part –I, by Dr. B.M. Singh, Chaukhambha Orientelia, Varanasi, First edition, pg.no.238.

11. Text Book of Bal Roga, Kaumarbhritya, Part –I, by Dr. B.M. Singh, Chaukhambha Orientelia, Varanasi, First edition, pg. no.239.

12. Text Book of Bal Roga, Kaumarbhritya, Part –I, by Dr. B.M. Singh, Chaukhambha Orientelia, Varanasi, First edition, pg.no.240-241.

13. The Short Text Book of Pediatrics Edited by Dr Suraj Gupte, Jaypee Brother Medical Publishers (P) Ltd., Twelfth

Edition: 2016, Section 3, Chapter 17, Pg.No.272-273.