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Drug Administration during Childhood - Principles of Ayurveda Clinical Practice

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ABSTRACT

Childhood period is the state of structural, physiological and psychological immaturity of the the body. It is also the period of limited tolerance for exercise and the drug administration. Delicate nature of the child, immature biochemical status of the child creates further challenge, while treating the child in pediatric practice. Meanwhile administration of the medicine and making the medicine palatable for children is a big issue. Reluctant children create panic, confusion and anxiety in parents as their drug intake is not satisfactory.

Kashyapa Samhita dealt the subject of clinical pediatrics practice and mentioned certain methods of drug administration in newborn, infants and the older children. We also find such references in *Charaka Samhita* and *Laghu Trayis*. Some of the *Bhaishajja Kalpana* like *Mantha*, *Avaleha*, *Arka*, *Paneeya*, *Panaka*, *Ksheera paka*, etc can be modified to some extent and can be used as effective method of drug administration. As *Kashyapa* says *Ahara* as *Maha Bhaishajja*, food is needed to be modified as medicine for easy, effective, comfortable administration, load of medications should be reduced by making food with medicinal valve and palatable. It has been advised in classical Ayurvedic books that medicine should be prepared by *Madhura*, *Kashyaya Rasa* and it should have *Mridu* nature and prepared with milk base.

KEYWORDS

Maha Bhaishajja, Madhura Rasa, Newborn, Infants, Tolerance



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INTRODUCTION

As rightly told by *Kashyapa*, pediatrics differs from other branches of medical field as there is need in modification on *Upakrama* (treatment), dosage, mode of administration by keeping the palatability and tolerance as the main issue. Further, it very clearly told by *Kashyapa* that *Kaumarabhritya* is the main branch which holds responsibility of producing physically, psychologically, morally and socially healthy citizens of future. Hence, *Kurmarabhritya* plays the role *Agni Devatha*, who provides the offered food to other *Devathas*, by providing the patients to other branches of medicine¹.

Meanwhile during clinical practice of *Kaumarabhritya*, it should be kept in mind that children should not be treated as little adults. Many parents as well as practitioners impose certain rules and regulations and dosage of medicine of adults in childhood clinical practice, to half of the adult standard by considering the child as little adult, which is absolutely a wrong practice². Children completely differs from adults in parameters of physical, physiological, biochemical, psychological and immunological immaturity. Meanwhile dose should be calculated as per age, body weight or the surface area of the child³. Hence a random

way of childhood clinical practice is not justified and may prove fatal to the child.

General description

Meanwhile preparing a palatable and easily administrable medicine for children in Ayurveda is a big issue. Reluctant children create panic situation and create confusion and anxiety in parents as their drug intake is not satisfactory with underlining disease entity. By keeping this view in mind *Charaka* explained that medicine should be administered in most palatable form and medicine should be prepared/ dissolved in milk base (*Ksheera*) and drugs should be of *Madhura* (sweetish), *Kashyaya* (astringent) and *Mridu* (soft potency) nature. This is quite beneficial in *Ksheerada* and *Ksheerannada*, as milk is the main diet, and child is habituated for the same preparing the *Ksheera Paka* of required drugs is the most suitable, successful method of drug administration⁴ in neonatal and infancy period. However while preparing the *Ksheera Paka*, *Amla Rasa* drugs are not added as they may spoil the milk. Most of the *Madhura* drugs like *Ashwagandha*, *Vidarigandha*, *Shatavari* etc can be given in the form of *Ksheerapaka* to growing children.

As per classics *Avaleha*, *Panaka*, *Manta*, *Arka* are other suitable forms of drug administration in children. Such



preparations are always palatable as it is added by *Sita*, Honey, *Guda*, *Ghrita*⁵ etc. Parents and physician need to use their common sense while prescribing the medications in childhood clinical practice. One of the easy way of administration of drugs in children is mixing the medicines with food materials which are regularly used in child's diet. *Ghrita* preparations can be administered by smearing it over *Roti*, *Chapatti* or mixed with rice, *Daliya* etc. Many *Choornas* can be mixed with wheat flour and made in to *Chapatti* or *Roti*, and mixed with jaggery (*Guda*), *Madhu* etc and given as routine food so that child can it is acceptable to children.

Some of the effective *Kashyaya* preparations when condition demands, are quite difficult to administer in children due to bitter taste. We know that certain *Tikta Kashayas* are quite beneficial in childhood febrile conditions. In this case we can modify the method of administration by replacing bulk administration, with drop by drop administration by a dropper at frequent intervals with offering sweetish substances in between. Meanwhile in *Aushadha Sevana Kala*, frequent administration of medicine (frequent administration in small amount) has been mentioned and it is best suitable for children⁶.

Meanwhile, a common myth and confusion existing in general public and also in Ayurvedic medical fraternity is *Arista* preparations (fermented medicines) should not be given in children due to risk of alcoholic addiction and gastric irritation, which is totally baseless. Rather some of the *Arista* preparations are very beneficial in children and quite useful in atypical causes of loss of appetite. Many atypical gastro intestinal disturbances will be better tackled by *Arista* or fermented medicines as it is fermented materials and acts as prebiotics and probiotics and helps in maintaining the normalcy of intestinal bacterial flora⁷. Same is also useful to induce mild sedative effect and child will have a sound sleep in irritating, crying child. Possibility of gastric irritation may be reduced by diluting the same with warm water and administration through a dropper. Many medications with nutritional interest is better administered in the *Laddu* and *Modaka* form. Classics clearly explained that maximum medication of the child should be in the form of food materials (*Ashana*) external applications (*Lepana*) and drinkables (*Pana*) and these three are three best modes of administration⁸.

DISCUSSION

Debate among the physicians. This confusion may be because of differed



opinion of different authors regarding age of onset of *Panchakarma* procedures in children. Although few of the classical references are misleading *Chakarpani* commenting on *Charaka* clarifies all the doubts regarding the same. He says that *Panchakarama* procedures can be safely administered in all children who can perform their basic day today activities without parental help (*Swatantra Bala*). *Swatantra Bala* or independent child refers to those kids who are totally independent with respect to food intake, daily routine and other activities and expression of suffering⁹. But he says that in *Paratantra Bala* or dependent child is that who is dependent on care taker for all routine daily basic needs. Such babies should be kept away from *Vamanadi Kriya* due to *Mridutwa* of the *Anga*, immaturity of body physiological functions, and limitation of linguistic capacity.

However, in *Bala*, excess *Samshodhana*, *Rakta Mokshana*, *Karshana* etc. are avoided due to physical, physiological, psychological limitations¹⁰. Hence, slight modifications in procedures compared to adult standard by looking at existing clinical conditions.

However in those *Paratantra Bala* also when there is requirement of *Panchakarma*, *Asthanga Sangraha* and *Kashyapa* explained certain alternative methods.

Child who requires *Vamana* or *Virechana* for given condition can be replaced by *Basti*. *Asthapana Basti* by *Anuvasana / Matra Basti*, *Marsha* by *Prati Marsha Nasya* can be done¹¹. Classics explains that *Virechana* can be given only in emergency, otherwise totally contraindicated. But *Basti* is considered as best treatment for *Shishu* and *Ashishu* irrespective of age and conditions of the child. As per few, *Basti* can be given from birth itself, However *Kashyapa* says any child who is in the process of weaning and started with its locomotor developmental milestones and taking solid materials can be safely given with *Basti*¹².

Similarly administration of *Panchakarma* like *Vamana/Shodhana* etc. are advised for lactating mother also or *Dhatri* which not only provide the pure milk but also facilitate the transport of certain medicines through breast milk. As the breast milk is main diet during first year *Stanya Shodhana* is also indicated¹³. Therapeutic effects can be also achieved by administration of different types of sudation procedures (*Sweda*) like *Pata Sweda*, *Hasta Sweda* etc. These type of sudations are beneficial in vague abdominal pain in children, *Tamaka Shwasa*, productive cough, *Shiro Vedana* etc¹⁴. *Nasya* with breast milk is indicated in *Kaphaja Rogas*, *Urdwajatru Rogas* etc. *Nasya* with *Katu Taila* is indicated by



*Kashyapa*¹⁵. *Matra Basti* is one more method of drug administration which is commonly practiced with good results in many disease conditions like cerebral palsy, ADHD, autism and other systemic disorders.

Administration of medicine to newborn and infant is really challenging and hectic. *Kashyapa* mentioned two methods of drug administration in neonates. First one is administration of drug in the form of *Lepa* over the breast of the mother, allowing for 48 minutes for absorption followed by active feeding, while second method is applying *Lepa* over the breast areola area and immediately feeding the baby. In the first method drug is absorbed and secreted through the breast milk as most of the drugs taken by the mother are secreted through the breast milk although amount and bioavailability varies from drug to drug. *Stanya* is *Upadathu* of *Rasa*. In second method drug is directly given to baby as sucking the breast milk makes the easy entry of medicine inside the baby along with breastmilk. When left the applied medicine for 48 minutes over the breast and breastmilk may acquire the medicinal properties¹⁶.

One more method of administration of medicine mentioned by *Kashyapa* is modification of *Ahara* as medicine. *Kashyapa* explained *Ahara* as

*MahaBhaishasjja*¹⁷. The main intention of *Kashyapa* is that *Ahara* should be modified as medicine. Certain food items which are prepared with fermented base, will acts as very good medicine in certain Atypical Intestinal problems as it helps in the growth of intestinal bacterial flora in certain nutritional problems fortification of food can be done to increase the calorific output so that by using minimum food maximum calories will be provided¹⁸. Simple cow's milk is made energy rich by adding certain oils, sugar, protein powder etc. Adding certain citric fruits in the food can be very effective in nutritional anemia and vitamin deficiency¹⁹. Vitamin deficiency can be also treated by providing germinated grains in diet. Preparing certain soups added with *Ginger, Coriander, Gralic, Pepper, Ela, Dalchini* etc are effective in cough and sputum conditions and URTI etc. Certain skin problems which require certain bitter drugs, the same can be administered by preparing its sweet chutney of drugs by using jaggery base. Leafs of certain drugs with medicinal property like *Rohitaka* etc. can be added with *Manda, Peya* and can be administered. In certain parts of India we also observe certain food practices where, of food materials are prepared by rapped inside the leafs of in certain medicinal drugs . Usually leaves of *Haridra, Tejopatra, Kadali, Vata*, to yield the



medicinal properties. *Twak* of certain drugs is also used as *Manda*, *Peya* and *Velepi* like cereal preparations which can be offered to child. Traditionally many drugs are made soluble in water and administered as we see in the concept of *Teertha* (Holy water) which is added with *Tulasi*, *Lavanga* etc. drugs. Even *Dhanyaka Hima* or water processed with *Coriander* seeds²⁰ can be externally used to wash the eye where drug is made soluble in water.

Certain fruit juices can be converted into medicine when used as per the situation. For example as juice of *Dadima* or pomegranate in anemia, diarrhea etc. Banana is rich carbohydrate food while sugar cane juice helps to replenish the carbohydrate in palatable form. Coconut, orange juice etc. are rich source of potassium. Carrot and beet -root juice are good supplementation for hematinic factors. Simple hot water added with little *Ghee* and sugar is quite effective in certain cases of constipation. *Ayurveda* emphasizes the use of *Takra* in all abdominal disorders and is rich in natural lactobacillus organisms which form the intestinal bacterial flora²¹. Supplementation of folic acid, iron, and certain minerals can be done preparing *Parota* on wheat flour base soaked with juice of green leafy vegetables.

CONCLUSION

Hence by considering different references available in *Ayurveda* literature, different methods of drug administration in neonates and the infants has been explained here with. One should ensure that medicine is safe and predominantly with *Madhura* and *Kashaya Rasa* should be used with *Mridu* nature. Medicine should be palatable to the child and caution should be taken to ensure medicine is given in prescribed dose as chance of wastage is more when given in non- acceptable form. There is definite need of modification at certain points. Hence detail evaluation of knowledge and analysis of science opens different avenues of drug administration in newborn and infants which can be effectively utilized in Ayurvedic clinical practice of *Kaumarabhritya*.



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