

AYURVEDA PERSPECTIVE ON DRUG DOSAGE FORMS AND GENERAL
CONSIDERATIONS OF DRUG DOSING IN KAYACHIKITSADr. Dhananjay Shivaji Khot*¹ and Dr. Amit Raghunath Pawar²¹Associate Professor (Reader), Rural Institute of Ayurved Research Center & Hospital Vidyagiri, Vita Road, Mayani, Tal.- Khatav, Dist. - Satara, Maharashtra, India.²Associate Professor and HOD Department of Rasashastra and Bhaishajya Kalpana, Rural Institute of Ayurved Research Center & Hospital Vidyagiri, Vita Road, Mayani, Tal.- Khatav, Dist. - Satara, Maharashtra, India.***Corresponding Author: Dr. Dhananjay Shivaji Khot**

Associate Professor (Reader), Rural Institute of Ayurved Research Center & Hospital Vidyagiri, Vita Road, Mayani, Tal.- Khatav, Dist. - Satara, Maharashtra, India.

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ABSTRACT

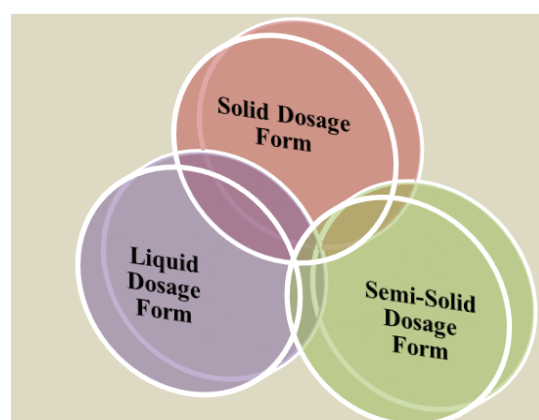
The concepts of drug dosing and route of administration of drug play vital role towards the biological efficacy of drugs. The selection of proper dosage forms and frequency of drug administration are very essential for acquiring desired biological effects of drugs. In Ayurveda the term Kalpana resembles various dosage forms i.e; liquid, semisolid and solid dosage forms. Kalka, Vati, Bhasma, Asava/ Arishta, Kwatha and Churna, etc. are various dosage forms utilized in ayurveda therapies mainly for the purpose of internal administration of drugs. The specific dosage form in particular quantity for fixed interval period of repetition offers desired effects without any adverse events. The deviation in drug dosing or inadequate frequency of administration can leads lack of therapeutic response or toxic effects. Considering importance of concept of “drug dosing” present article summarizes some key points related to the various Ayurvedic dosage forms and their suggested quantity for administration in patients of different age group.

KEYWORDS: Ayurveda, Kayachikitsa, Dosage forms, Kalpana.**INTRODUCTION**

Kayachikitsa is branches of Ayurveda which deals with management of diseases of various system of body. *Shodhana*, *Shamana* and *Satwawajaya*, etc. are techniques utilized in Ayurveda *Kayachikitsa* for the therapeutic purposes. The branch mainly encompasses various theories related to the uses of medications, behavioural & psychological suggestion, life style modification and utilization of purification therapies. *Vati*, *Kashaya*, *Bhasma*, *Churna*, *Asava*, *Ghruta*, *Guggulus* and *Arista*, etc. are Ayurveda formulations used for therapeutic benefits. The branch mainly works around towards the complete management of body and mind. The ayurveda formulations mentioned earlier used for treating disease of skin, digestive system, central nervous system, respiratory system and reproductive organs, etc.

As discussed earlier that Ayurveda *Kayachikitsa* utilizes various classical formulations (*Vati*, *Kashaya*, *Churna*, *Asava* and *Guggulus*, etc.) for the management of various diseases. The therapeutic benefits of these formulations not only depends upon their drug content but it's also depends upon the quantity and route of drug administration. Therefore selection of drug for specific disease is not only the factor need to be considered while

treating a patient but other factors also to be taken in consideration like; selection of proper dosage forms, frequency of administration (dosing intervals) and route of drug administration, etc.

**Figure 1: Different categories of drug dosage forms.**

The different types of dosage forms as mentioned in **Figure 1** offers following advantages:

1. Solid dosage forms give palatability, long half-life and easy to administered.
2. Liquid dosage forms offer good bioavailability and good for pediatric care.

3. Semisolid dosage forms possess longer contact time when applied topically and effectively penetrate through skin to systemic circulation.

The above points suggested that each and every dosage form gives unique advantages while applied for therapeutic purposes; however selection of dosage forms and dosing frequency influenced by many factors such as; *Prakriti* of patient, *Dushya* (affected system in body), *Bala*, *Kala*, *Vaya*, *Koshtha*, *Satmya*, *Prayoga Marga*, *Desha*, *Ahara Vyavastha* and *Anupana*, etc.

The improper dosing can leads following disadvantages

- Low dose unable to produce desired effects
- Higher dose can cause adverse effects
- Inappropriate dosage form lost patient compliance and pharmacokinetic properties
- Dose dumping or improper dosing frequency can alter sequential biological response of medicines.

Role of Anupana (vehicle)

The ayurvedic medicines and herbal remedies mainly administered with some adjuvant; vehicles (*Anupana*) generally employed in liquid form. Water, honey, milk, *Svarasa* and *Ghee*, etc. are some *Anupana* used in Ayurveda practices for administering various drugs. It is believed that *Anupana* enhances action of medicines, facilitate ease of drug administration, provide support in main treatment, improves circulation & absorption of medicines and enhance patient compliances. Ayurveda suggested properties of *Anupana* as per *Doshas* predominance, therefore before prescribing dosage forms the following qualities of vehicles must be taken in consideration:

- *Anupana* having *Madhura*, *Lavana*, *Snigadh* and *Ushna* properties can be used for *Vata Dosh* aggravation.
- *Anupana* having *Kasaya*, *Madhura*, *Tikta* and *Sheeta* properties can be used for *Pitta Dosh* aggravation.
- *Anupana* having *Katu*, *Tikta*, *Kasaya* and *Ruksha* properties can be used for *Kapha Dosh*.

General dosing of important Ayurveda dosage forms

The **liquid dosage forms** recommended in various quantities varying from age groups, generally dosing of liquid formulations suggested as follows:

- *Kashayam*; decoction can be administered 5-15 ml
- *Asava* & *Arishta*; fermented formulation dose is 15 – 30 ml
- *Ark*; herbal distillate dose ranging from 25-60 ml
- *Ghrita*; medicated *Ghee* can be administered from 6 to 12 ml depending upon conditions
- *Thailam*; medicated oils for internal administration can be used from 3 to 6 ml.

The general dosing of **solid dosage forms** varying depending upon disease severity and patient conditions:

- *Churna* of herbs possess moderate hot potency can be administered as 500 – 1000 mg
- *Bhasma* need to be use specifically the general dosing is 65 – 250 mg
- *Pishti*; Herbo-mineral formulation, the dose is 125 – 500 mg
- *Guggulu*; formulation based on *Guggulu* resin, dose may be 500 mg – 1000 mg
- *Vati*; solid pills or tablets generally used in dose of 250 – 500 mg.

Pediatric Dosing

The general dose of Ayurveda drugs for different pediatric age group according to *Acharya Kashyapa* are as follows

- Dose equivalent to the seed of Jujube fruit (*Badariphala Beejatulya*) is suggested for new born.
- Dose equivalent to half *Badariphala* (Jujube fruit) for baby older 10-20 days.
- Dose equal to one *Badariphala* for baby ageing 01 month
- Dose equal to one and half *Badariphala* for baby ageing 1-2month
- Dose equal to three *Badariphala* for infants aging 03 months
- Dose equal to dry *Amalaki* fruit for baby aging 04 months
- Dose equal to wet *Amalaki* fruit for baby aging 05-06 months
- Dose more than *Amalaki* for baby aging 07-08 months.

The general dose of Ayurveda drugs for **higher age pediatric group** according to *Sushruta samhita* are as follows:

- *Anguliparvadvaya grahya* (quantity which adheres in between the apex of thumb and index finger) for *Kshirada* (up to 1 year), honey or *Ghee* suggested as *Anupana* for this age group.
- *Kolasthi* (Drug as paste, amount should be equal to seed of kernel of jujube fruit for *Kshirannada* (1–2 year).
- *Kola Matra* (amount equal to the jujube fruit) for *Annada* (2–16 years) age groups.

Dosing difference in pediatric and adult patients for common Ayurveda formulations

The general dosing of different Ayurveda formulations for pediatric and adult patients differ due to the difference in strength. Children belonging from age group 6-10 years can be administered *Svarasa* in 2-5 ml while in adult it is 7-14 ml. The general dosing of *Kalka* in children of same age group is 2-5 g while in adult it is 6-12 g. The general dosing of *Churna* is 2-3 g in children and 3-6 g in adult. *Kvatha* can be administered as 2-5 ml and 14-28 ml in children and adult respectively. The 130- 250 mg of *Vati* suggested in children while it is 250-500/1000 mg in adult. *Bhasma* need to be used with lot of care especially in case of children however their

dosing in children is 130-250 mg, and 250-500mg in adult, *Asava/Arishta* can be added up to 2-5 ml in children while it is 14-28 ml in adult.

General Measures of Dosing and Dosing Intervals

The solid dosage forms like *Vati* and *Gutika*, their dosage recommended in numbers like 1 or 2 *Vati* daily, while *Churna* (powder) given as *Ratti* (one *Ratti* is equivalent to 125 mg) and such formulation generally recommended with vehicle twice daily.

The *Avaleha* or *Lehyam* recommended in grams or teaspoons (five grams is equivalent to 1 teaspoon), these forms mostly administered along with other drugs and frequency as per the adjuvant medicines.

The liquids dosage forms like; *Asava/Arista* given in ml, the dosing of such formulation varying as per age group and twice daily for adult patient.

CONCLUSION

The literatures suggested that in order to acquire desired effect of a drug it must be present at site of action in an appropriate concentration. This concentration of drug at site of action depends upon dose to be administered. Therefore selection of appropriate dosage forms is prerequisite for treating any disease effectively. Factors like *Bala*, *Vaya*, *Vyadhi*, *Dosha*, *Agni*, *Kostha*, *Satmya*, *Dasha*, *Kalaa* and *Prakriti*, etc. are to be considered while deciding dose of medicine. The Ayurveda physician must possess knowledge about classical dose of different medicine according to age groups since types of formulations and dosing frequency differs in children and adult patients.

REFERENCES

1. Sushruta Samhita, Hindi Commentary Ayurvedatatva- Sandeepika by Ambikadutt Shastri, Reprint edition, Chowkhamba Sanskrit Sansthan, Varanasi.
2. <https://www.ayurtimes.com/anupaan-adjuvant/> accessed on, 02/10/2020.
3. Sharangadhara Samhita –Bramhanand Tripathi, Chaukhamba Sanskrit Pratishhana, Varanasi, edition, 2013.
4. Devendranath Mishra Kaumarbhritya, Chaukhamba Sanskrit Pratishhana, Delhi, 2015.
5. K. D. Tripathi Essentials of Medical Pharmacology, Jaypee Brothers Medical Publishers, Delhi, Sixth Edition, 2010.
6. Meherban singh, Ashok K Deorari Drug doses in Children, CBS Publishers and Distributors, New Delhi, Ninth edition, 2015.
7. <https://s3.amazonaws.com/ppt-download/posologypedia-accessed on, 02/11/2020>.
8. Yogaratnakara with Vidyaprabha Hindi Commentary, Chaukhamba Krishnadas Academy, Varanasi.