



## Review Article

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## Doses and dosage forms in ayurvedic pharmaceuticals: pediatric perspective

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### ABSTRACT

Ayurveda is an ancient science. Acharyas used various formulations in order to maintain their health. This is a branch which deals with the manufacturing, uses and doses of the preparations known as Rasashastra & bhaishajya kalpana. It plays an important role in preventive and curative care of children. As a child is born, various steps are being taken to prevent him from diseases and making him healthy. Such steps include swarnaprashan, lehan and ingestion of other particular medicine. The drugs are given in some particular doses like amalkasthi, kolasthi, masha, shana etc. Further in this review paper we will try to explain the various dosage forms with their respective doses which are important in child to maintain their health and cure diseases.

**Keywords:** dose, formulations, children, pediatric care.

### INTRODUCTION

Ayurveda, a rational system of medicine, has gained global acceptance on virtue of its fundamental doctrine of holistic approach. In Ayurveda, aushadha has been kept on second prime importance in the chronology of chatushpda which consist of: kasta-aushadhi (herbal preparations) and rasaushadis (herbo-mineral preparations).

Ras shastra, a discipline of ayurveda deals with the authentication, pharmaceuticals and therapeutics of substances of mercurial, metallic and mineral origin that are accepted as medicine after very unique and individual treatment. Dose is important in herbo-mineral preparations because of its very high potency and it will lead to toxicity if given in high quantity.

Bhaishjya kalpana is specialized branch of Ayurveda which deals with the procurement, processing, and right application of drug to cure any disease. Simply it is art of preparing and dispensing medicines.

These medicines are classified into various formulations and further these formulations have their particular dose in which they should be given to cure a particular disease.

### MATRA

In classics, matra is not specifically defined by our acharyas. We consider matra as dose in modern concept which can be defined as follows: The proper quantity of drug recommended by a physician to a patient in a particular condition can be defined as dose of that particular drug.

### Factors deciding matra of the medicine

In Vaidhya paribhasa pradipa, second khanda it is said that: It is not possible to prescribe a fixed dose of medicine for all patients. Dosages of medicine vary in different individuals depending upon bala-abala of vyadhi. Matras can be fixed on the basis of following factors:

- Kala
- Agni
- Bala
- Aayu
- Prakruti
- Desha
- Dosha

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## Qualities of matra yukta aushadha

Acharya charak in sidhi sthana, chapter 6 have said: Appropriate dose of the recipe for elimination of doshas is characterized as follows:-

- It should be small in quantity but quick in action;
- It should be able to eliminate morbid doshas in large quantity but easily;
- It should be light for digestion, palatable, pleasing and curative of the concerned disease;
- It should not cause serious complications;
- It should not cause depression in excess.
- It should possess agreeable smell color and taste.

## Importance of Matra

- Therapeutical property depends upon the dose of the therapy and time of administration. Success of the treatment depends upon the observance of this property [1].
- Rashi is the quantum of total (sarvgraha) and individual (parigraha) substances which determines the result of their administration in proper and improper dosage [2].
- The drug given to the child must be of low potency, small in dose as well as less frequency of administration. This rule is applicable for both aahar dravyas and medicinal preparations.
- Drugs cannot be administered without measuring their dosages. Thus in context of using drugs, measures and weights are necessary [9].
- All therapeutic measures administered to treat a disease even though wholesome and skillfully given, fail to cure it, if they are used in lesser or in excessive dose or at wrong time or in wrong manner. If appropriate therapy is administered in appropriate manner it certainly cures the disease.
- Small dose of medicine cannot cure disease completely, at the same time larger dose of medicine, which is more than requirement, will produce definitely different complications.

## Determination of Matra

**Table 1:** Dosages of Herbal Preparations

S.NO	KALPANA NAME	MATRA
1.	Sneha	2 karsha 2 Tola ½ pal
2.	Kalka	1 karsha 1 tola
3.	Kwatha	2 pal
4.	Hima	2 pala
5.	Phanta	2 pala
6.	Churna	1 karsha
7.	Avleha	1 karsha (Yadav ji Trikam ji) 1 pal (sharangdhar)
8.	Vati	1 karsha
9.	Kshara	2-8 ratti
10.	Aasav arishta	1 pal
11.	Tail	1 pal(abhyantar)
12.	Ghritta	1 pal

**Table 2:** Dosages of Herbo-Mineral Preparations

S.NO	PRODUCT	MATRA
1.	Parada & Swarna bhasma:	1 ratti
2.	Rajata bhasma:	3 ratti
3.	Tamra bhasma:	2 ratti
4.	Loha bhasma:	6 ratti
5.	Abraka bhasma:	6 ratti
6.	Naga bhasma:	6 ratti
7.	Vanga bhasma:	6 ratti
8.	Kapardika bhasma:	6 ratti
9.	Shilajit bhasma:	6 ratti
10.	Mandura bhasma:	1 masa
11.	Uprasa:	1 masa
12.	Kamsya bhasma:	2 ratti
13.	Pittala bhasma:	2 ratti
14.	Visha matra: ▪ In all patients- ▪ In kushtha rogi-	1 yava 1 ratti
15.	Vajra bhasma:	2 yava
16.	Harital bhasma:	7 yava

## According to Acharya Sushruta

**Table 3:** Dosages According to Condition of Child

S.NO	AGE & CONDITION OF CHILD	MATRA
1.	A baby depending on stanyapana and of age more than 1 yr	1 anguliparva
2.	A baby depending on both stanyapana and anna dravyas	Kolasthi
3.	A baby depending only on anna dravyas	Kola

**Table 4:** Dosages of Formulations

S.NO	FORMULATION	MATRA
1.	Kalka	1 aksha
2.	Kwatha	1 anjali
3.	Churna	1 vidal padak

## According to Acharya Kashyapa

Keeping the exceptions aside, the dose of drug of old person is that of persons of sixteen years of age. Afterward, It gradually decreases and in hundred or more than hundred years, the dose is like ksheerannada is described.

According to acharya Kashyapa doses can be decided after dividing aayu in three stages i.e. as following:

- Garbha
- Bala
- Kumara

**Table 5: Dosages for Child:**

S.NO	CONDITION	MATRA
1.	Dose of ghritta: <ul style="list-style-type: none"> <li>In newly born -</li> <li>After 5 or 6 days-</li> <li>After 20 nights-</li> <li>Till one month-</li> <li>2<sup>nd</sup> month-</li> <li>3<sup>rd</sup> month-</li> <li>4<sup>th</sup> month-</li> <li>5<sup>th</sup>/6<sup>th</sup> month-</li> <li>7<sup>th</sup>/8<sup>th</sup> month-</li> </ul>	Kolasthi Slightly more Kolardha Kola matra More than kola 2 kola Shushkamlaka Ardhramlaka More than ardramlaka
2.	a)Till 8 months:  b)After 8 months:	1/4 <sup>th</sup> quantity of drugs to that of sneha kalpana should be given according to disease.  Drug mixed with water should be given

**Table 6: Dosages of Kalpanas in All Age Groups**

1.	Churna: <ul style="list-style-type: none"> <li>Deepaniya-</li> <li>Vaman/virechan-</li> <li>Jeevaniya -</li> </ul>	Agraparva ½ karsha 2 agraparva
2.	Kalka: <ul style="list-style-type: none"> <li>Jeevaniya/sanshamniya-</li> <li>Vaman/virechan-</li> <li>Deepaniya-</li> </ul>	2 aksha ½ aksha Aksha matra
3.	Kwatha: <ul style="list-style-type: none"> <li>Jeevaniya-</li> <li>Vaman/virechan-</li> <li>Doshagn-</li> </ul>	2 prasrit 1 prasrit 2 prasrit

**According yo Acharya Sharangdhar**

- In 1<sup>st</sup> month of age - 1 ratti of aushadhi mixed with dugdha, madhu, ghritta and shakkar.
- 1-1 ratti is increased every month upto 12 months which will be equal to 1 masa at 12<sup>th</sup> month.
- Then 1-1 masa is increased every year upto 16 years. This will be equal to 16 masa.this dose of medicine is for 16 to 70 years of age.
- After 70 years, this matra will decrease in sequence as it was increased in balya avastha.

The above dosage criteria are for churna and kalka kalpanas. In case of kwatha this dose will increase four times.

The same principle was described in yog ratnakar.

**According To Vaidyaka Paribhasa Pradipa****Table 7: Dosages of Various Kalpanas**

S.NO	CONDITION	MATRA
1.	Sneha & Kwatha: <ul style="list-style-type: none"> <li>Uttam bala-</li> <li>Madhyam bala-</li> <li>Hina bala-</li> </ul>	1 pal 3 karsha ½ pal
2.	Guda & Khanda: <ul style="list-style-type: none"> <li>Uttam bala-</li> <li>Madhyam bala-</li> <li>Hina bala-</li> </ul>	1 ½ pal 1 pal ½ pal
3.	Modaka:	1 karsha
4.	Vataka:	1 karsha
5.	Leha:	1 karsha
6.	Guggulu: <ul style="list-style-type: none"> <li>Uttama agni bala-</li> <li>Madhyam agni bala-</li> <li>Hina agni bala-</li> </ul>	12 masa 8 masa 4 masa

**DISCUSSION & CONCLUSION**

Dose of medicines has very great importance in reference of treating diseases as severe fire can't be stopped by little drops, in this same manner little dose of medicine can't be able to treat disease properly. As more amount of water can damage the crop, in the same manner increased dosage of medicine also will cause damage to the patient. It indicates that, only required dose of medicine is supposed to be administered to the patient. According to Charak Samhita Vimansthan 8/122 doshas, dhatus and malas in children are aparipakwa, so the drug given to the child must be of low potency, small in dose and less frequency of administration. This rule is applicable both in case of aahara and aushadhi. For e.g. In case of aahar, if more aahar is given to a child having low agni, it will not digest properly and will lead to aama formation, in the same way if less aahar is given to child having tikshanagni, it will cause dhatu bhakshan resulting in some disease.

**Table 8: Some doses of children are compared with that of adults:**

S.NO	KALPANA	MATRA SPECIFICALLY IN CHILDREN	MATRA IN ALL AGE GROUPS
1.	Kwath kalpana	1 Karsh	2 pal(Ach.Charak) 1 anjali(Ach. Sushruta)
2.	Sneha kalpana	Started from kolasthi to more than ardra amalak	1 pal

From the above table it is seen that doses in children is comparatively less than adults as because of the reasons like aparipakwa dhatus, manda agni etc. As if more dose is given in children it will cause damage to the children and will cause severe complications. So doses in children

are important as health of children is to be given prime importance because they are the future of the nation. Thus matra of aahar and aushadhi given to children is important.

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