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EXPLORATION ON THE METRIC EQUIVALENT OF *CHANAKA PRAMANA*

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ABSTRACT:

Introduction: *Mana* is measurement through which weight, volume, length, etc., are measured. It comes under basic principles of *Rasashastra* and *Bhaishajya Kalpana*. *Chikitsa* of various *vyadhi* is done through *aushadha*. Efficacy of classical preparation is dependent on accurate measurement of the ingredients and its precise dose. But there are instances where *yoga matra* cannot be found in the list of *mana paribhasha*. One such *mana* is *chanaka matra*. So, this study was taken up and an attempt was made to find metric equivalent of *chanaka matra* by weighing *chanaka* multiple times. **Material and method:** Attempt was made in this work to collect formulations with *chanaka mana* in different books of *Ayurveda*. *Chanaka* (*Cicer arietinum* Linn.) was procured from three different general stores of Hassan, Karnataka. *Chanaka* were selected randomly, weighed and average weight was calculated. **Result and discussion:** Though cited in various formulations and procedures, the reference weight of *chanaka mana* is not mentioned in *mana paribhasha* of any textbook. May be *chanaka* is the simile used to make people understand the dose easily. Final average of three sample is 0.263g which is nearer to 250mg i.e., 2ratti. **Conclusion:** The average weight of *chanaka* after three trials was 0.263gm (i.e., 263mg). So, *chanaka matra* is approximately 2 *ratti* i.e., 250mg.

Keywords: *Chanaka*, *ratti*, *mana*, *paribhasha*, *Cicer arietinum* Linn.

INTRODUCTION:

Mana is measurement through which weight, volume, length, etc., are measured. It comes under basic principles of *Rasashastra* and *Bhaishajya Kalpana*. *Mana paribhasha* is mentioned in different classical texts of *Ayurveda* like *Charaka samhitha*[1], *Sushruta samhitha*[2], *Sharangadhara samhitha*[3], *Rasa ratna samucchaya*[4], *Rasa tarangini*[5], *Bhaishajya ratnavali*[6], *Ayurveda prakasha*[7], *Yogaratanakara*[8], *Ashtanga Hridaya*[9] etc., This concept has more of practical utility than just being theoretical. Also, without the knowledge of *mana* one can never expect to have thorough application to the subject.

Mana paribhasha not only includes measurable particles, but also of the ones which are not visible through naked eyes. It includes minutest *paramanu*[10] to heavier *khari* (196kg 608g)[11],[12]. *Chikitsa* of various *vyadhi* is done through *aushadha*. Efficacy of classical preparation is dependent on accurate

measurement of the ingredients and its precise dose. But there are instances where *yoga matra* cannot be found in the list of *mana paribhasha*. One such *mana* is *chanaka matra*. So, this study was taken up and an attempt was made to find metric equivalent of *chanaka matra* by weighing *chanaka* multiple times.

MATERIAL AND METHODS:

Attempt was made in this work to collect formulations with *chanaka mana* in different books of *Ayurveda*.

Chanaka[13] (*Cicer arietinum* Linn.) was procured from three different general stores of Hassan, Karnataka. Twenty *Chanaka* fruits which were intact, having two cotyledons were selected randomly and weighed individually [14]. Average weight of the same was calculated. This procedure was repeated three times for each sample. *Chanaka* which are too small or too big were excluded to obtain precision.

OBSERVATIONS:

Table 1. Formulations with *chanaka mana*:

Sl.no	Formulation	Reference
1.	<i>Agnikumara rasa</i>	<i>Brihat Rasarajasundara Arochakadhikara/p.440</i>
2.	<i>Agnikumara rasa</i>	<i>Bharatha Bhaishajya Ratnakara Prathama bhaga Akaradhi rasaprakarana/20</i>
3.	<i>Agnikumara rasa</i>	<i>Rasayoga sagara Prathama bhaga/67-70</i>
4.	<i>Ajirnalakalanalo rasa</i>	<i>Brihat Rasarajasundara Ajirnarogadhikara/p.362</i>
5.	<i>Ichabedi rasa</i>	<i>Rasayana sara Chikitsa prakarana126-127</i>
6.	<i>Kulavati</i>	<i>Bharata Bhaishajya Ratnakara Prathama bhaga Kakaradhi vatiprakarana/ 766</i>
7.	<i>Kanakasundara rasa</i>	<i>Rasendra sara sangraha Jwaratisara chikitsa/26-27</i>
8.	<i>Kaphachintamani rasa</i>	<i>Rasendra sara sangraha Kapharogadhikara/33-34</i>

9.	<i>Kampavatari rasa</i>	<i>Brihat Rasarajasundara Vatavyadhi chikitsa/p.459</i>
10.	<i>Kalagnibhairava rasa</i>	<i>Bhaishajya ratnavali Visarpachikitsa prakarana/22-24</i>
11.	<i>Kushtakutaro rasa</i>	<i>Rasa ratna samucchaya Vimshathi adhyaya/ 46-49</i>
12.	<i>Kulavadhu rasa</i>	<i>Bhaishajya ratnavali Jwarachikithsa prakarana/596-597</i>
13.	<i>Khadhiradhi gutika</i>	<i>Bharata Bhaishajya Ratnakara Prathama bhaga Khakaradhi guti kaprakarana 1068</i>
14.	<i>Garbhavinoda rasa</i>	<i>Rasa Chandamshu Dwitiya paricheda Garbhini roga chikithsa 602-603</i>
15.	<i>Gunamahodhadhi rasa</i>	<i>Bharatha Bhaishajya Ratnakara Dwitiya bhaga Gakaradhi rasa prakarana/1566</i>
16.	<i>Grahanikapata rasa</i>	<i>Rasa chandamshu Uttara khanda Atisara chikitsa/383-385</i>
17.	<i>Chandraprabha vati</i>	<i>Yogaratanakara Jwaratisaranidhana chikitsa prakarana 192-193</i>
18.	<i>Chintamani rasa</i>	<i>Rasa chandhamshu Virechana/27-31</i>
19.	<i>Chandrakala rasa</i>	<i>Bhaishajya ratnavali Jwarachikitsa prakarana/1102-1108</i>
20.	<i>Jayavati</i>	<i>Ayurveda prakasha Prathama adhyaya/587-588</i>
21.	<i>Jayanthi vati</i>	<i>Bhaishajya ratnavali Jwarachikitsa prakarana/536</i>
22.	<i>Janthugni vati</i>	<i>Rasa ratna samucchaya Vimshathi adhyaya/ 105-111</i>
23.	<i>Jatiphalaya vati</i>	<i>Bhaishajya ratnavali Grahaniroga chikithsa prakarana/387-389</i>
24.	<i>Jathiphaladhi Grahanikapata rasa</i>	<i>Rasendra sara sangraha Garahaniroga chikitsa/1-3</i>
25.	<i>Jwarankusha rasa</i>	<i>Rasa ratna samucchaya Dwadasha adhyaya/ 54-57</i>
26.	<i>Tamrabhairava rasa</i>	<i>Brihat Rasarajasundara Kasadhikara/p.423?</i>
27.	<i>Talakadhijwarankusha rasa</i>	<i>Brihat Rasarajasundara Jwaradhikara/p.297</i>
28.	<i>Panchaloha rasayana</i>	<i>Bhrihat Nighantu Ratnakara Prameharogadhikara 823</i>
29.	<i>Panchatmakoka rasa</i>	<i>Rasendra sara sangraha Shularoga chikitsa/ 11-15</i>
30.	<i>Piyushavalli rasa</i>	<i>Bhaishajya ratnavali Grahaniroga chikithsa prakarana 334-345</i>
31.	<i>Brihat purnachandra rasa</i>	<i>Bhaishajya ratnavali Rasayana prakarana 78-88</i>
32.	<i>Bahumutrantaka loham</i>	<i>Bharata Bhaishajya Ratnakara Thrithiya bhaga</i>

		<i>Bakaradhi rasa prakarana/4737</i>
33.	<i>Balaharitakyadhi yoga</i>	<i>Bharata Bhaishajya Ratnakara Thrithya bhaga</i> <i>Bakaradhi rasa prakarana/4744</i>
34.	<i>Bhairavi gutika</i>	<i>Brihat Rasarajasundara Jwaradhikara/p.259</i>
35.	<i>Mrutasanjeevani vatika</i>	<i>Rasa Kamadhenu Jwaranidhana chikithsadhikara</i> <i>595-597</i>
36.	<i>Meghanada rasa</i>	<i>Rasa chandamshu Virechana/23-26</i>
37.	<i>Yogeshwara rasa</i>	<i>Rasendra sara sangraha Pramehadhikara / 52-57</i>
38.	<i>Rasashekara</i>	<i>Bhaishajya ratnavali Upadamsharoga chikitsa 49-</i> <i>54</i>
39.	<i>Rajashekara vati</i>	<i>Bharata Bhaishajya Ratnakara Chaturtha bhaga</i> <i>Rakaradhi rasa prakarana/6137</i>
40.	<i>Lakshmivilasa rasa</i>	<i>Bhaishajya ratnavali Kasachikithsa prakarana 130-</i> <i>137</i>
41.	<i>Vishwadhi vati</i>	<i>Bharata Bhaishajya Ratnakara Chaturtha bhaga</i> <i>Vakaradhi gutika prakarana/ 6674</i>
42.	<i>Vishagutika</i>	<i>Bharata Bhaishajya Ratnakara Chaturtha bhaga</i> <i>Vakaradhi rasa prakarana/ 7072</i>
43.	<i>Shulasimha rasa</i>	<i>Rasa chandamshu Dhwtiya pariccheda</i> <i>Shulachikitsa/68-70</i>
44.	<i>Shulebhasimhini rasa</i>	<i>Rasa Kamadhenu Shulanidhana chikitsadhikara</i> <i>53-57</i>
45.	<i>Sthambhana vatika</i>	<i>Bharata Bhaishajya Ratnakara Panchamabaga</i> <i>Sakaradhi gutika prakarana/7910</i>
46.	<i>Sannipatavidhwamsaka rasa</i>	<i>Rasa Kamadhenu Sarvarogopakrama /380-384</i>
47.	<i>Sarvangakampari rasa</i>	<i>Bharata Bhaishajya Ratnakara Panchama bhaga</i> <i>Sakaradhi Rasaprakarana/8179</i>
48.	<i>Somapani rasa</i>	<i>Brihat Rasarajasundara Jwaradhikara/p.267</i>
49.	<i>Hridayarnava rasa</i>	<i>Bhaishajya ratnavali Hridrogachikithsa prakarana</i> <i>39-40</i>
50.	<i>Hemasundara rasa</i>	<i>Rasa Sanketha Kalika Chaturthollasa/21-22</i>
51.	<i>Ksharatamra rasa</i>	<i>Yogaratanakara Grahani chikithsa/109-113</i>
52.	<i>Vathsanabha shodhana</i>	<i>Rasa tarangini Vishopavishadhi vignyaniya</i> <i>Taranga/19-22</i>

Table 2: Weight of *chanaka*- Sample 1:

Sl.no	Trial 1	Trial 2	Trial 3
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01	0.29g	0.30g	0.26g
02	0.25g	0.22g	0.28g
03	0.25g	0.30g	0.21g
04	0.22g	0.24g	0.24g
05	0.27g	0.27g	0.22g
06	0.21g	0.26g	0.25g
07	0.24g	0.21g	0.24g
08	0.24g	0.28g	0.26g
09	0.26g	0.30g	0.28g
10	0.25g	0.24g	0.22g
11	0.24g	0.28g	0.24g
12	0.23g	0.25g	0.26g
13	0.26g	0.21g	0.23g
14	0.24g	0.27g	0.22g
15	0.26g	0.23g	0.24g
16	0.26g	0.24g	0.21g
17	0.30g	0.24g	0.22g
18	0.21g	0.22g	0.25g
19	0.27g	0.21g	0.25g
20	0.29g	0.25g	0.26g
Total	0.252g	0.251g	0.242g
Average weight of sample 1			0.248g

Table 3: Weight of *chanaka*- Sample 2:

Sl.no	Trial 1	Trial 2	Trial 3
01	0.33g	0.24g	0.35g
02	0.35g	0.34g	0.34g
03	0.34g	0.34g	0.37g
04	0.36g	0.23g	0.21g
05	0.33g	0.28g	0.32g
06	0.35g	0.23g	0.34g
07	0.30g	0.30g	0.32g
08	0.26g	0.25g	0.21g
09	0.30g	0.33g	0.29g
10	0.23g	0.30g	0.28g
11	0.33g	0.25g	0.32g

12	0.23g	0.37g	0.29g
13	0.29g	0.28g	0.22g
14	0.26g	0.26g	0.22g
15	0.23g	0.26g	0.28g
16	0.31g	0.39g	0.28g
17	0.22g	0.33g	0.29g
18	0.23g	0.34g	0.22g
19	0.25g	0.25g	0.25g
20	0.21g	0.28g	0.25g
Average	0.285g	0.292g	0.282g
Average weight of sample 2			0.286g

Table 4: Weight of *chanaka*- Sample 3:

Sl.no	Trial 1	Trial 2	Trial 3
01	0.25g	0.29g	0.33g
02	0.26g	0.27g	0.24g
03	0.28g	0.24g	0.22g
04	0.31g	0.22g	0.23g
05	0.28g	0.26g	0.27g
06	0.22g	0.32g	0.25g
07	0.26g	0.27g	0.22g
08	0.26g	0.24g	0.26g
09	0.23g	0.36g	0.25g
10	0.28g	0.31g	0.26g
11	0.23g	0.23g	0.24g
12	0.21g	0.23g	0.23g
13	0.23g	0.23g	0.23g
14	0.26g	0.24g	0.28g
15	0.24g	0.21g	0.22g
16	0.29g	0.26g	0.21g
17	0.31g	0.29g	0.20g
18	0.30g	0.27g	0.27g
19	0.24g	0.27g	0.21g
20	0.28g	0.24g	0.25g
Total	0.261g	0.262g	0.243g
Average weight of sample 3			0.255g

Table 5: Average weight:

Average value of sample 1	Average value of sample 2	Average value sample 3	Final average
0.248g	0.286g	0.255g	0.263g

DISCUSSION:

In Ayurvedic texts, *Magadha* and *Kalinga* are two types of mana mentioned, with *Magadha* being regarded as superior [15]. The concept of *mana paribasha* includes *Payya* (measures of length), *pautava* (measures of weight or mass) and *druvaya* (measures of capacity) mana. In *Rasatarangini*[16], when describing the tools and equipment to be gathered for a *rasashala* (pharmacy), there is mention of a *tula yantra* (weighing balance) for obtaining accurate measurements. Appendix IV of the Ayurvedic Formulary of India includes conversions of weights, linear measurements, and time measurements into the Metric system. It details weight measurements starting from *Gunja* (125mg) and extending up to *Khari* (196kg 608g)[12].

In the above-mentioned formulations different terminologies like *Chankakaramatra*, *Chanakabha*, *Chanopama*, *Chanasannibha*, *Chanapraya* etc., are used. Though cited in various formulations and procedures, the reference weight of *chanaka mana* is not mentioned in *mana paribhasha* of any textbook. May be *chanaka* is the simile used to make people understand the dose easily. In some Hindi commentaries, *chanaka mana* is mentioned as 1 *ratti* (125mg) [17] whereas in others as 2 *ratti* (250mg) [18]. The average weight from three sample was 0.263g which is nearer to 250mg i.e.2 *ratti*.

CONCLUSION:

The knowledge of *mana paribhasha* is important because without that physician cannot prepare or prescribe medicine. In this study an effort was made to know *chanaka mana*. The average weight of *chanaka* after three trials was 0.263gm (i.e., 263mg). So, *chanaka matra* is approximately 2 *ratti* i.e., 250mg.

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