

## SUDHA VARGA - POSSIBLE CALCIUM SUPPLEMENTARY MINERALS FOR CHILDREN

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### ABSTRACT

Calcium is one of the major constituents of our body formation. For children between 1 to 10 years of age, recommended calcium intake is 700-1000mg per day. It is the most abundant mineral in the human body, out of which 99% deposits occur in bone and teeth, while 1% share of calcium is present in blood and muscles of the body. In case of its deficiency, weakness of bones is expected that may ultimately cause bony deformity such as rickets. Calcium deficiency in children can be corrected by oral supplementation of calcium. *Sudha vargiya Dravyas* are group of drugs that possess high content of Calcium and they have gained therapeutic importance in contemporary clinical practices. **Aim & Objectives:** In the current attempt, available classical references and published scientific evidences on the use of *Sudhavargiya Dravyas* in the management of calcium deficiency and other *Balarogas* have been compiled. **Results & Conclusion:** Based on the observations, it can be concluded that *Sudhavargiya Dravyas* are good source of calcium and beneficial in children at specified therapeutic dose.

**Keywords:** Calcium, *Sudha varga*, *Balaroga*, Minerals.

### INTRODUCTION

Calcium is one of the major constituents of our body formation. Recommended calcium intake for children between 1 to 10 years of age is 700-1000mg per day.<sup>1</sup> It is the most abundant mineral in the human body, out of which 99% deposits occurs in skeletal system i.e. bone and teeth, while 1% share of calcium is found in circulating blood, tissues and organs. Calcium deficiency can affect bone mineralization, contraction of muscles, problems in nervous system and blood clotting mechanism.<sup>2</sup> Calcium de-

fiency is most common problem faced by many children all over the world. Children need calcium for their growing bones. Calcium deficiency in children is caused either due to decreased intake of calcium or problems in its absorption from the intestine. In some children, calcium deficiency can be seen since birth due to low calcium level in their mother. Deficiency of calcium in children can lead to weak bones which may ultimately cause bony deformity such as rickets.<sup>2</sup>

**Aim & Objectives:**

In the current attempt, available classical references and published scientific evidences on the use of *Sudhavargiya Dravyas* in the management of calcium deficiency and other *Balarogas* have been compiled.

**Enumeration of *Sudhavarga dravyas*:** *Sudha varga dravyas* contains calcium as a chief ingredient. It includes *Khanija Dravyas* like *Sudha*, *Khatika*, *Godanti* etc. and *Pranija Dravyas* like *Samudraphena*, *Shankha*, *Shukti*, *Kapardika*, *Kurmapristha*, *Kukkutanda twak* etc. Among these, *Kaparda* has been grouped under *Sadharana Rasa*, whereas *Pravala* and *Mukta* are grouped under *Ratna Varga*.<sup>44</sup> *Rasamritam* has included these drugs under *Sudha Vijnaneeyam*.

**Utility of *Sudhavarga dravyas*:****In Children,**

***Godanti Bhasma*<sup>5</sup>:** It works effectively in Calcium deficiency disorders like rickets, osteoporosis. It also helps in *Jirna jwara*, *Kasa* at a dose of 1-2 *Ratti* (125 mg-250 mg) with honey or cow ghee.

***Kurmapristha Bhasma*<sup>6</sup>:** It indicated in the *Balarogas* (Paediatric disorders) at the dose of 125 mg-500 mg along with *Guduchi Satva* (starchy extract of *Tinospora cordifolia*) as adjuvant. It gives strength to bones. In siddha system of medicine, it is used in cases of green diarrhoea in children.

***Kukkutanda Twak Bhasma*<sup>7</sup>:** It is rich source of calcium content and is included by recent authors.. It is useful in cases like rickets (*Balashosha*), facilitates dental eruptions, as calcium supplementary in pregnancy & lactating mother. It is given in the dose of 250 mg to 500 mg along with honey, sugar, cow ghee or any other suitable adjuvant.

***Shringa Bhasma*<sup>8</sup>:** It act as expectorant and mucolytic. It provides strength to the bone, joints, cartilages and lungs at doses of 60-125 mg along with *Khanda Sharkara* or honey as *Sahapana*.

***Ajasthi Bhasma*<sup>9</sup>:** It is also included by recent authors. It is indicated in rickets, nursing mother, pre-natal period, during dental eruptions, dental carries,

as a natural calcium supplement. It is recommended with honey in the dose of 250-500 mg.

***Khatika*<sup>10</sup>:** One *Masa* (1 gm) of *Suddha Khatika churna* is administered daily with cold water to cure *Pravahika*, *Raktapitta* and *Grahani roga*. *Khatika churna* if added with sugar and administered along with *Mishreya arka*, it cures severe *Atisara* in children.

***Pravala pishti*<sup>11</sup>:** According to Unani therapeutics, *Pravala Bhasma* is administered in children who suddenly wake up from sleep in night and keep weeping due to fear. *Pravala Pishti* along with *Shringa Bhasma* is useful in *Asthi mridita* (Rickets) associated with *Kasa*<sup>12</sup>.

***Samudraphena*<sup>13</sup>:** It is used externally in *Dusta vrana* (putrid ulcers), *Puti karna* (Suppurative otitis) at a dose of 2 *Ratti*.

Various formulations prepared with *Sudha varga dravyas* and indicated in *Atisara*, *Balashosha*, *Shwasa*, *Kasa* etc. are as below:

***Churnodaka*<sup>14</sup>:** Used internal as well as external purposes. It is mainly effective in *Dantodbheda janita rogas* of children. It is beneficial in curing *Atisara* (diarrhoea) and *Amlpitta* (Hyperacidity). In the children with lactose intolerance i.e. who cannot digest milk, few drops of *Churnodaka* will correct the digestion process. It cures *Udara shoola* (abdominal pain) and *Grahani roga* (Sprue). It is used as *Basti Dravya* for enema to clear the intestinal worms. It is mixed with *Atasi* oil and made into an emulsion, which is applied on burns and also used for gargling, to treat *Mukhapaka* (Stomatitis), used to wash putrefied wounds. For children aged one year, the dosage of *Churnodaka* is 30 drops to 60 drops.

***Sudhashataka Yoga*<sup>15</sup>:** It included six *Sudha varga dravyas* i.e. *Pravala Bhasma*, *Mukta Bhasma*, *Shankha Bhasma*, *Kapardika Bhasma*, *Kurmapristha Bhasma*, and *Godanti Bhasma*. It is beneficial in *Balashosha* (Rickets) at dose of 2 to 8 *Ratti* (250 mg-1000mg) along with cow milk twice a day.

**Balapanchabhadra Churna<sup>16</sup>**: It is used in cases of *Pandu roga*, *Jirna Jwara* and *Balashosa* and in condition of calcium deficiency at dose of 2-4 *Ratti* (250 mg-500 mg) licked with honey and after that administered cow milk as adjuvant.

**Muktadi vati<sup>17</sup>**: It is indicated in *Jirna jwara*, *Balashosa*, *Pandu*, diarrhoea or vomiting due to intolerance of milk, *Kasa* etc. at dose of 1-4 *Ratti* (125-500mg) with Cow milk or mother milk.

**Bala vati<sup>18</sup>**: If it administered at dose 1-2 *Ratti* (125-250mg) with cow milk twice a day, milk is easily digested and having good sleep.

**Mugdha Rasa<sup>19</sup>**: It is *Nirgandha Parada Murchchhit yoga*. It is applied in suitable dosage internally, very effective in *Atisara* (diarrhoea), *Vamana* (vomiting) and *Sahaja phiranga* (congenital syphilis). It is especially useful in paediatric abdominal complaints (*Udara roga*). For children aged one year and above dosage is 1/8 *Ratti* to 1/4 *Ratti* (15.62-31.25 mg).

**Mrutika Virechana Yoga<sup>20</sup>**: In this formulation *Mrudar Shringa* is present as *Shudha Varga Dravya*. It is beneficial in *Mrutika Bhakshana janya Pandu* in children. It is omitted *Mritika* by *Virechana karma* at dose of 2 *Masa* (2g) along with cow milk within 5 days.

**Shuktadi Yoga<sup>21</sup>**: It contains *Shukti Bhasma*, *Godanti Bhasma*, *Yashada Bhasma* and *Trikatu*. It is very cost effective, easily available with highest calcium supplementation.

## RESULTS & DISCUSSION

As per the reference of Rasarnava and Rasa ratnakara, *Sudha varga dravyas* are included under the *Shukla varga* and the classification might be based on their colour. But, in *Shukla varga* all the *Dravyas*, except *Krimpristha* are white in colour. Hence the criteria for classification may be based on their colour (white) and their chemical composition-calcium.

*Godanti Bhasma* is a mineral based Ayurvedic medicine prepared from gypsum. It is rich in natural

calcium and sulphur content. *Godanti Bhasma* has healing properties like antipyretic<sup>22</sup>, anti-inflammatory, analgesic and can be a good calcium supplement.

*Shringa Bhasma* contains calcium, zinc, magnesium and some heat stable amino acids. It is mainly beneficial in respiratory tract and musculo skeletal disorders. With mucolytic property, it helps in cleaning the lungs and airways by regulating mucous secretion.<sup>23</sup>

Author of *Siddhabhaisajya Manimala* mentioned *Shodhana* and *Marana* procedure of *Kukkutanda Twaka* and its internal use in *Upadansha*. *Kukkutanda Twaka Bhasma* is an excellent *Asthimamsa dhatu poshaka* and *Vardhaka* as well as *Rasayana*. It is easily absorbable and rich form of calcium, which is useful in *Asthi kshaya* (Osteoporosis). It is also indicated in *Khalitya* and *Palitya* (Premature greying and loss of hair) as *Kesha* is a *Mala* of *Asthi dhatu*.<sup>24</sup>

All the *Sudha vargiya dravyas* are used in the form of *Bhasma* except *Pravala* and *Mukta*. *Bhasmas* are unique dosage forms in Ayurveda, that acts in small doses and can cure chronic ailments. Calcium compounds are alkaline in nature. The natural calcium preparations like *Bhasmas* are most effective than synthetic calcium as they contain easily absorbable and assimilable form of calcium.<sup>25</sup>

## CONCLUSION

Based on the observations, it can be said that all the calcium compounds used in Ayurveda are grouped under *Sudha varga Dravyas*. They are good source of calcium and gained therapeutic importance as supplement in calcium deficiency, to enhance normal growth and development. *Sudha vargiya Dravyas* are mild organic form of Calcium Carbonate i.e. a part of calcium supplement and very beneficial in children in their therapeutic dose in various disease conditions.

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