

AN AYURVEDIC REVIEW ON *PHAKKA ROGA* W.S.R. TO RICKETS IN CHILDREN

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ABSTRACT

Acharya Kashyapa is considered as father of *Kaumarbhritya*. *Phakka roga* is a special contribution of *Kashyapa Samhita*. *Phakka* is described as nutritional disorder where a child is unable to stand up or walk on his/her feet even after 1 year of age.^[1] In ayurveda the symptoms of rickets are similar to that of *Phakka Vyadhi*. Rickets is a condition where the bones in children become soft and weakened which leads to fracture and deformity in children. It is caused by deficiency of vitamin D, calcium or phosphate and found in children 6-24 months of age. Ayurveda described various lines of treatments for the management of *Phakka roga*.

KEYWORDS: *Kaumarbhritya*, *Phakka Roga*, Rickets, *Kashyapa*

Samhita.

INTRODUCTION

Phakka Roga in children described under *Kuposhanajanyavyadhi*, in which *Asthivaha shrotasa dusti* is seen. Malnourishment leads improper formation of *Rasa*, *Mansa*, *Meda* and *Ashti* which may result in *Phakka*. The *Nidan* factors are malnutrition, lack of care, *Grahani dosha*, *Agni dosha*, and *Bahubhojana*.^[2-5] Rickets is a disease of growing bones caused by unmineralized matrix at the growth plates in children only before fusion of the epiphyses. The term rickets is derived from English word wrick (twist) and Greek word rachitis means excess of osteoid tissue. Rickets can cause poor growth, bone pain and deformity of skeleton

such as widening of wrist and ankles, bowlegs, windswept deformity and widening of costochondral junction.

According to *Aacharya Kashyapa* there are three types of *Phakka roga* *Ksheeraj phakka*, *Garbhaja phakka* and *Vyadhij phakka*.^[6] In the management of *Phakka roga* *Rasa nirman* is very important by improvement in *Agni*.

PHAKKA ROGA CLASSIFICATION

1) *Ksheeraj Phakka*^[7]

It occurs due to *Kapha dushita stanya* seven by the child which develops various diseases and child become *krusha*.

2) *Garbhaja Phakka*^[8]

If lactating mother becomes pregnant - Quantity of milk secretion becomes less early in that mother – the nutritional content in such a pregnant mothers milk is less which is required for growth and development of child – because most of the part of nutrition is used for growth of fetus in mother – so there is inadequate nutrition to the child for growth and development – then gradually child becomes *krusha* is known as *Garbhaja Phakka*.

3) *Vyadhija Phakka*^[8]

In this child suffer from *Nija* and *Agantuja vyadhi rog*, hence *Ksheenata of Mansa*, *Rakta* occurs, *Shifk*, *Bahu* and *Uru* becomes emaciated, abdomen becomes protuberant, head and face becomes more dominant and wasting of muscles occurs.

MANAGEMENT OF PHAKKA ROGA

In the management of *Phakka Roga* *Prakruta rasa Nirmana* is very important by improvement in *Agni* with the help of *Mrudu Shodhana* followed by *Deepan*, *Pachana* *Bruhana* therapy. For prevention of *Phakka roga* *Ayurveda* has suggested *Nashya*, *Dhuma*, *Gandush*, *Pradeha*, *Parisheka* and *Kaphashamaka dhara*.^[9]

For treatment of *Phakka roga* *Aacharya Kashyapa* has suggested *Basti*, *Snehapan*, *Swedana* and *Udvartana*.^[10]

Management of Ksheeraja Phakka^[11]

Kaphaja Stanya Sevan is *Hetu* of *Ksheeraja Phakka*. Management of this disease can be done by milk which is medicated with various *Deepana Dravyas* like *Rasna*, *Madhuka*, *Eranda*, *Shatapushpa*, *Punarnava* gives relief in this disease.

Management of Garbhaja Phakka^[11]

The condition involved *Balshosha* in which *Shosha* leads to *Ksheeraja Phakka*, *Parigarbhika* then *Garbhaja Phakka*. In this we should primarily treat *Parigarbhika* by *Agnideepana chikitsa* by various *Deepaniya* and *Pacha niya dravya*. *Deepana* and *Pachana dravya siddha* with *Vidari*, *Yava*, *Godhuma* and *Pippali* in *Ghrita* may be recommended.

Management of Vyadhija Phakka^[11]

In *Vyadhija Phakka* mainly *Dosha Dushya Samprapti* is involved which is associated with *Nija Roga* and *Agantuja Roga*. The treatment approaches involve consideration of *Hetu* and its management. *Kshirpeya*, *Leha Dravya*, *Kalpas* and nutritious food is recommended. *Samvardhana Ghrita* also possesses relief in disease symptoms.

ACCORDING TO MODERN SCIENCE^[12]

Rickets is defined as failure of mineralisation of the growing bones

ETIOLOGICAL CLASSIFICATION OF RICKTES**A) Vitamin D deficiency (nutritional) rickets**

- Higher requirements in growing children
- Inadequate dietary intake
- Lack of exposure to sunlight
- Poor stores at birth – Preterms, IUGR
- Malabsorption states
- Anticonvulsant therapy

B) Vitamin D resistant (refractory) rickets

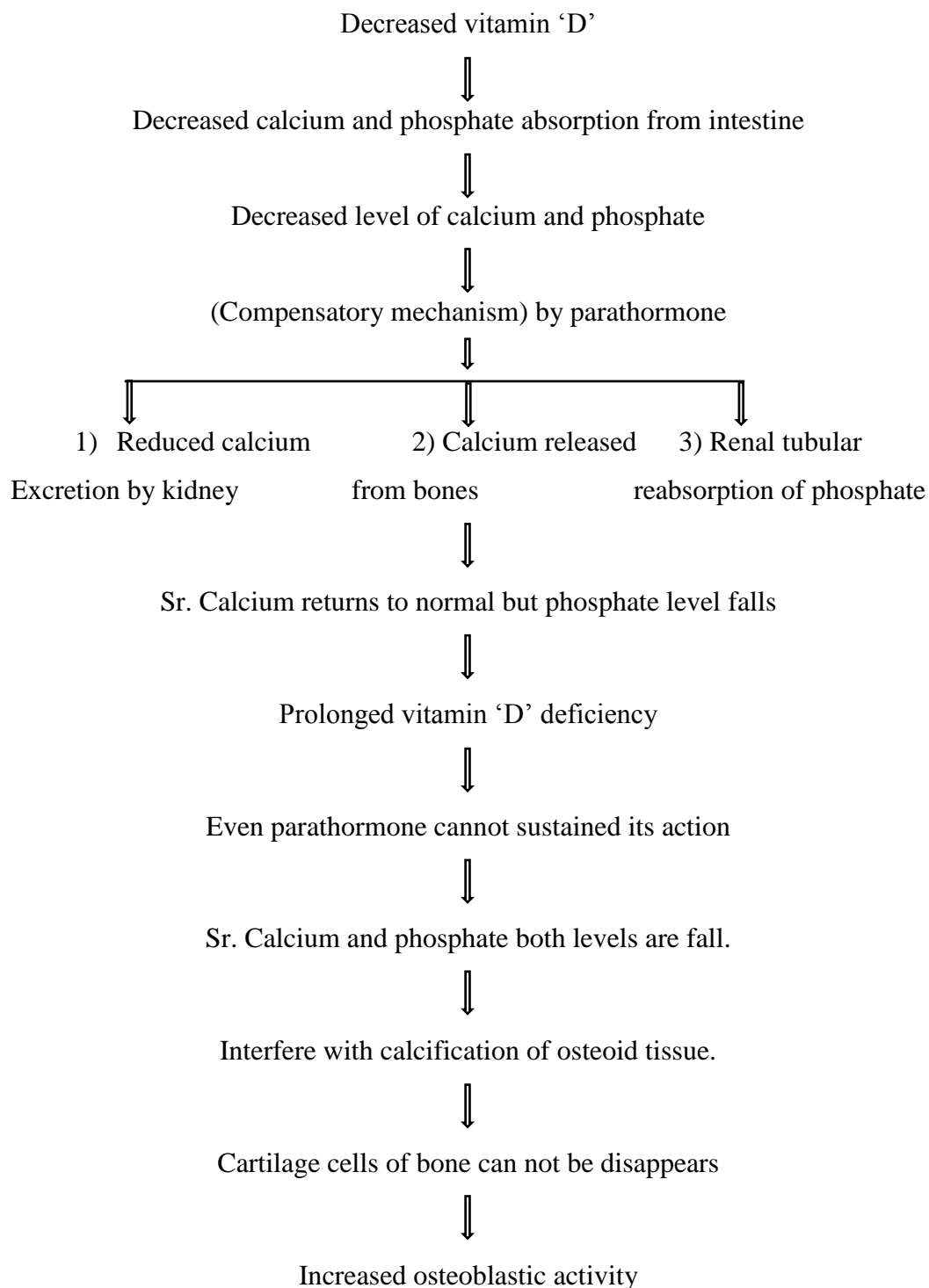
- Chronic hepatic disease
- Chronic renal diseases (renal osteodystrophy)
- Hypophosphatemic rickets

Familial hypophosphatemia

Renal tubular acidosis or fanconi syndrome

C) Vitamin D dependent rickets

- Type 1: Autosomal 1-hydroxylase deficiency
- Type 2: End – Organ resistance to vitamin D

METABOLIC CHANGES

CLINICAL MANIFESTATIONS^[13]

Rickets commonly present at 6 months – 2 years of ages with body deformities and hypotonia of supporting ligaments / muscles.

IMPORTANT CHANGES IN RICKETS**General**

- Failure to thrive (malnutrition)
- Listlessness – Lack of interest
- Protruding abdomen
- Muscle weakness (especially proximal)
- Hypocalcemic dilated cardiomyopathy
- Fractures (pathological, minimal trauma)
- Increased intracranial pressure

Head

- Craniotables
- Frontal bossing
- Delayed fontanel closure (usually closed by 2 years)
- Delayed dentition
- No incision by age 10 month
- No molars by age 18 month
- Dental Caries
- Craniosynostosis

Chest

- Rachitic rosary
- Harrison groove
- Respiratory infection and atelectasis

Back

- Scoliosis
- Kyphosis
- Lordosis

Extremities

- Enlargement of wrist and ankles
- Valgus or varus deformity (valgus deformity of one leg with varus deformity of other leg)
- Anterior bowing of tibia and femur
- Coxa vara
- Leg pain

Hypocalcemic symptoms

- Tetany
- Seizures
- Stridor caused by laryngeal spasm

DIAGNOSIS

Based on presence of classic radiographic abnormalities, history supported by physical examination findings and laboratory results.

TREATMENT

Stoss regimen is most widely used method of treatment in nutritional rickets as well as to differentiate them from resistant rickets, as follows:

- a) Confirm rickets on x-ray of the wrist joint
- b) Give single dose of oral or IM vitamin D3 300000-600000 IU on diagnosis, along with oral calcium supplementation. (Presently, vitamin D3 is usually administered as 60000 IU daily * 10 days)
- c) Repeat x-ray after 2-3 weeks, to see for zone of preparatory calcification
- d) If present indicated deficiency rickets
- e) If absent repeat same dose of vitamin D3
- f) Repeat x-ray again after 2-3 weeks
- g) Absence of the line of preparatory calcification till 4-6 weeks despite 2 mega doses of vitamin D3 indicate vitamin D resistance rickets and need for detailed investigations.

Nutritional rickets may also be treated with daily vitamin D Therapy (PO 2000-6000 IU/day) for 2-4 weeks.

PREVENTION

Prevention of rickets involves adequate exposure to sunlight and vitamin D supplement (PO 400 IU/DAY) In Preterms or rapidly - growing children.

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