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An ayurvedic review on navajata shishu kamala: Physiological jaundice

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Abstract

Kamala is one of the clinical entities conceived by Ayurveda. The concept of Kamala dates back since Vedic period but extensive details are available in Ayurvedic Samhitas and later texts. The word “Kamala” denotes “Kāyām Malayate iti Kāmāla”, means disease in which whole body becomes dirty, because of the accumulation of mala i.e. Mala of Ranjaka Pitta. As soon as fetus detaches from the mother he becomes independent to perform all the activities to maintain the life processes. During the process of homeostasis, the reorganization of hemopoetic system adjust itself immediately and as a result Mala of Rakta (Pitta/bile) is released too much and eventually the neonate, being immature to deal with load the Mala (Pitta) circulates in the body & causes jaundice called “Navajata shishu kamala”. Broadly it is of two types: physiological and pathological Jaundice occurred due to reorganization of hemopoetic system called physiological jaundice: topic of this appraisal. Either physiological jaundice is selflimiting but can cause various complications in new born if remain untreated. In Ayurveda, it can be treated as pittaj vyadhi, as Charak has mentioned Virechan is the best measure among all treatment of Pitta. A patient of Kamala should be treated initially with mild bitter purgatives (Kamale tu virechane). In physiological jaundice basic impurity is indirect bilirubin which cannot remove from body until it had not change in direct bilirubin that can possible only at liver. So drug used for that should have action of virechan (Remove out) of bilirubin from liver to gut with changing of indirect to direct form.

Keywords: Accumulation of ranjaka pitta, Navajata Shishu kamala, pittaj vyadhi, kamale tu virechane

Introduction

Ayurvedic texts did not mention Navajata shishu kamala separately as a chapter. However scattered references are available in the literature. Ayurvedic texts, especially Kashyapa Samhita have ample description regarding it.

Acharya Kashyapa in “Vedanadhyaya” has mentioned Kamala as a complication of non-observance of phased diet and other modes of life (Negligence in observing dietetic regimen). He has mentioned following clinical features [1].

1. Yellowish eyes, nails, face & urine
2. Apathy
3. Loss of digestive capacity & desire of food

While in Kalpasthana, he has also mentioned Jataharini as a cause of Kamala. He has described “Mamsahari Yasya Jataharini” which is responsible for death of fetus at the time of delivery or 2nd-15th day of life [2]. The term “Pishachi” [3]. Means Rakshasas having yellowish color of body. So such babies get afflicted by Kamala during 1st day of life and die due to mamsahari Jataharini.

In Balagraha, Kashyapa has described “Revati graha” that caused kamala [4]. While describing clinical features of child seized with jataharini, concept of Navajata shishu kamala has been described. In such condition baby cries loudly with fear then breast milk gets vitiated, consumption of which causes pinkish yellowish discoloration of the body, fever, thirst, diarrhea, hoarseness of voice, dryness of palate, horripulation, tonsillitis, blisters on face & oral cavity, anemia, jaundice etc. [5].

Charaka has opined that intake of breast milk vitiated by pitta, may leads to discoloration, which end up with yellowish discoloration of eyes, nails and urine.

Charaka, with the description of “Asthasheer dosha” [6]. Has mentioned that discoloration and foul smelling are the ksheer dosha caused by Pitta. Consumption of such breast milk leads to Pandu and Kamala [7]. Madhava Nidana [8]. Has described Kamala as one of the features of consumption of Pitta dusta stanya.

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Same was mentioned by Yogaratnakara and Bhava Prakasha also.

Pathogenesis

The disease is produced by the interaction of Khavaiunya (abnormal body channels) and vitiated Doshas. The vitiated doshas are disseminated by Vata and Rakta in the body.

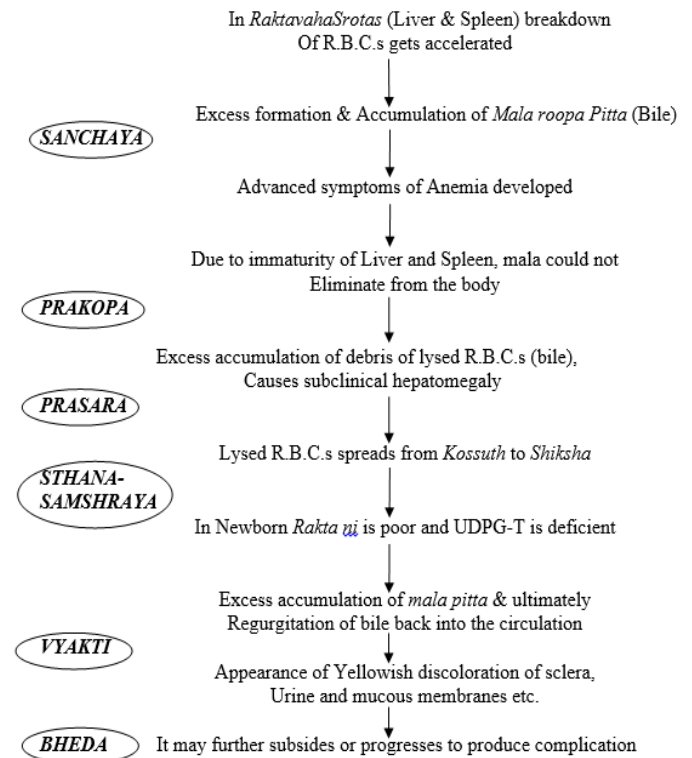
Navajata Shishu Kamala (Neonatal Jaundice) can be understood by the process of Kriya-Kala as described by Sushruta.

- 1. Sanchaya (Accumulation of Doshas):** After birth, normal process of breakdown of RBCs (Rakta) gets to be accelerated in Raktavaha Srotas as well as in the liver and spleen (the origin of Raktavaha Srotas) leading to excess formation & accumulation of Mala Roopa Pitta (Bile). Clinically this stage is characterized by some advance symptoms of anemia (Pandu), such as sluggishness, reduced appetite etc.
- 2. Prakopa (Aggravation):** When liver and spleen are not able to eliminate the bile (Mala Pitta) from the body then it lodges excessively in these sites because the breakdown process of R.B.C exceed in physiological limits and it becomes beyond the capacity of liver to metabolize and excrete. At this stage there may be sub-clinical enlargement of spleen and liver. It is because of excess accumulation of debris of lysed R.B.C.
- 3. Prasar (Dissemination):** When the excessive accumulation of unconjugated bile or Pitta (debris of R.B.C) takes place and can't be metabolized and excreted, then it spreads from Koshthato Shakha.
- 4. Sthana Samshraya (Localisation):** The excessive debris of R.B.C.s or bile (Mala Pitta) accumulated and metabolized in the liver to some extent. However, in case of newborn, Raktagni is in its lowered status and deficient (UDP-Glucuronide transferase) resulting in excessive accumulation of Mala Pitta (unconjugated bilirubin) and ultimately regurgitated back into the circulation. At this stage mild icterus is seen. This stage may be characterized by malaise, mild fever, anorexia, yellow colored urine, lethargy etc.
- 5. Vyakti (Manifestation):** At this level bilirubin (Mala Pitta) in blood is quite high to circulate in all over the body. This Mala Pitta attaining the skin and mucus membrane causes yellowish discoloration of skin, conjunctiva and mucus membrane. Urine and stool also become yellow, due to unconjugated bile. At this stage the sign and symptoms of Kamala are fully developed.
- 6. Bheda (Stage of complication):** When Kamala has fully developed due to its pathophysiology, it may either subsided or further progress and produce complications e.g. Kumbhakamala, Halimaka. Acharya Charaka has described all above stages in one place. He mentioned that "when the patient of Pandu Roga indulges in Paittika Ahara and Vihara then morbid Pitta involve Rakta and

7. Mamsa dhatu to produce Koshtha – Shkhashrita Kamala” [9].

Here it seems that first Rakta Dhatu is involved later on it produces Koshthashrita Kamala or Paratantra Kamala (Hemolytic jaundice), but when Mamsa Dhatu is involved then it produces Koshtha–Shkhashrita Kamala or Swatantra Kamala (hepato-cellular jaundice).

Flow chart of pathogenesis



Sadhya-asadhyata

- In initial stage : Kamala is Sadhya
- After sometime : Krichchhsadhya
- Later on : Asadhya, as described by Charaka.

“Kalantara kharibhutwa krichchha syata kumbh kamala” [10].

Upadrava (Complication)

Though Upadravas are not described in context of Kamala, some symptoms which may be considered as complication of Kamala, have been observed -

Murcha (hepatic coma), haemorrhage (GIT, P/R, P/V, etc.), Jalodara (ascitis), Jwara (fever).

Two types of Kamala, Kumbha kamala, Halimaka, Panaki & Lagharaka / Alasaka are the main terms used in relation to Kamala Roga. These can be compared with modern concept of jaundice’s complications.

Table 1: Types of Kamala/Jaundice

1.	Koshthashrita Kamala (Paratantra Kamala)	Hemolytic jaundice (Preheated)
2.	Koshthashkhashrita Kamala (Swatantra Kamala)	Hepatocellular jaundice (Hepatic)
3.	Shkhashrita Kamala	Obstructive jaundice (Extra hepatic)
4.	Kumbha Kamala	Hepatocellular failure
5.	Halimaka	Post hepatic obstructive jaundice
6.	Panaki	Hepato – Renal Syndrome

Treatment

Principles of treatment in children are somewhat different from those of others. For children neither desiccation (no Excessive phototherapy) nor excessive cleansing measures and bloodletting (no excessive exchange transfusion) is beneficial. They should be treated only by oral medications, ointments and irrigation with those drugs which are unctuous, cold and sweet and do not produce burning sensation ^[11].

General principle-

General principles of treatment (Samanya Chikitsa Siddhanta) of Kamala is comprehensive therapeutic regimen consisting of three measures:-

1. Samshodhana
2. Samshamana
3. Nidan Parivarjana

As Charaka has mentioned Virechana is the best measure among all treatment of Pitta,

“Virechanam tu Pittasya jayathe paramaushadham” ^[12].

A patient of Kamala should be treated initially with mild bitter purgatives.

Tatrapandwamayee Snigdhashtikshnai Urdhwaanulomikai Samshodhyo Mrdubhih Tiktaih Kamale tu Virechanam ^[13].

So the treatment of Kamala is

A) General treatment

1. Shodhana - i. Snehana (Uction)
ii. Virechana (Purgation)
2. Shamana: Kapha Pittahara Chikitsa
a) Snehana ^[14]: Before giving Virechana therapy, first patient should be uncted by Snehana therapy with the use of Panchagavya, Mahatikta, Kalyana, Draksha and Dadima Ghritas.

A) Specific Treatment

Single Drugs	:	Triphala Swarasa ^[19] . Amrita swarasa, Daruharidra swarasa, Nimbapatra swarasa, Shunthi, Vasa, Bhunimba etc.
Ghrita preparation	:	Panchagavya ghrita, Kalyanaka ghrita, Katukadi ghrita, Dadimadi ghrita, Mahatiktaka ghrita, Danti ghrita, Haridradi ghrita ^[20] . Pathya ghrita, Draksha ghrita, Vyoshadi ghrita, Murvadi ghrita.
Phantapreparation	:	Vishaladiphanta
Churna	:	Navayasa churna, Bhunimbadi churna, Lawangadi churna
Lauha ^[12] .	:	Nishalauha, Dhatri Lauha, Navayasalauha, Vidangadi lauha
Kwatha	:	Phalatrikadi kwatha ^[22] . Vasadi kwatha
Arishta	:	Gaudarishta, Beejagarishta, Dhatriarishta, Phalarishta, Parpatadyarishta
Avaleha	:	Amalakiavaleha, Darvyadileha, Drakshadileha, Dhatriavaleha, Triphaladiavaleha
Mutrprayoga	:	Gomutra prayoga, Gomutrahritaki, Ksheeramutra prayoga
Rasshastriya Preparation	:	Mandura bhasma, Mandura vataka, punarvana mandura, Yogaraja, Triphaladi yoga, Swarna makshikadi yoga, Shilajatu prayoga, Kamalantaka Rasa, Pandusudhan rasa, Chandra suryathmaka rasa, puranavallabha rasa, trilokhyasundara rasa, Panchamritaloha mandura, Vajravataka mandura, Triyushanadi mandura, lauhaparpati etc.

Kashyapa has mentioned symptoms of Kamala in Revati graham and prescribed decoction of Ashwagandha, Ajasrunji, both Sariva, both Punarvana, Ksudra, Saha and Vidari for irrigation ^[23]. Similarly root of Pippali, Ankhotha juice, horse dung along with curd of buffalo has been prescribed for oral use.

b) Virechana: After completing unction (Snehana therapy), Purgation therapy (Virechana) should be initiated. As per Charaka, virechana should be achieved with mild and bitter medicaments.

- i. Milk alone or mixed with cow's urine
- ii. Danti kwatha/Dantimool kalka
- iii. Trivrita and Triphala kwatha
- iv. Haritaki churna with cow's urine etc.

After Samshodhana karma, more importance should be given to diet restriction. The patients should be indicated for those Ahara which are Laghu, Ruksha like yava, shali, goduma, puranayush, mudghaadaki, masura and jangal mamsa ^[15].

While describing treatment of Shakhasrita Kamala, Charaka has aimed towards pacifying the involved Doshas. Causative factor leads to vitiation of Kapha and Vata, since Pitta is carried place away from Koshtha because of obstruction of Kapha and abnormal movement of Vata. Kaphahara and Vatahara measures will help to cure the condition. Acharya Charaka has also told that the treatment should be continued till discoloration of Mala disappears. For this purpose, Katu and Tikshna drugs are to be given. Pacification of Vata is very important as it carries Pitta to Shakha ^[16].

In Bhaishajya Ratnavali also, there is reference which gives the same opinion. According to him Snehana, Shodhana and Virechana with Prashamana karma are main stays of treatment ^[17].

Halimaka which is advanced stage of Kamala should be treated with great care. In these cases Guduchi swarasa processed with Mahisha dugdha is to be given to patient. As the purpose is to attain Snigdhatwa of the body, Ghrita has been advocated. It is followed by Virechana with Madhura rasa drugs. Drakshavaleha and Abhayavaleha are considered as ideal medicines in such situations. Followed by this, Yapana Basti which is a nutritive Basti by using milk has been mentioned ^[18].

Congenials of kamala rogi ^[24]

Kamala patients should use only that dietetics which do not vitiate Pitta Dosha and which subsides Kapha. Some specific diets are described by Charaka which are congenial for the patient.

Purana Shali, Mudga, PuranaYava, Masura, Purana Goduma, Jangal Mamsa, Yusha, Adhaki, Patola, Tittiramansa, Apakwa Kadaliphala, Matulunga Rasa, Takra, Kulattha, Bimbiphala, Pippali, Haridra, Maricha, Nagakeshara, Shushka Mulaka.

Non-congenials of kamala rogi

Leafy vegetables (Patrashaka), Pica (Mridabhakshana), Hingu, Lavan rasa, Pinyaka, Amla Rasa, Tambula, Diets which vitiate the Pitta, Sarshapa, Diwashayana (day sleeping), Sura (alcohol), Rakta Mokshana (bloodletting), Dhoomrapana (Smoking), Maithuna (coitus), Vegadharana (suppression of natural urges except coitus).

Signs and symptoms of normalisation of kamala (Mukta Kamala)

By Acharya Charaka these symptoms are ^[25].

- Apitta Raga (Returns the normal color)
- Vayu Prashama
- Purisha Pitta Ranjeeta (Pale coloration of stool)
- Swasthana Agate Pitta (Pitta at normal site)
- Nivrita Upadrava (Subsided complication)

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