J Res Educ Indian Med, 2017; 23 (2): XX-XX doi: 10.5455/JREIM.82-1501949510 **ISSN 0970-7700**

MANAGEMENT OF PROFOUND HEPATO CELLULAR JAUNDICE IN A CHILD THROUGH AYURVEDA- A CASE REPORT

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Abstract: ***Introduction:*** Jaundice is a common clinical manifestation in pediatric practice that indicates raised bilirubin levels. Jaundice due to involvement of hepatic cells is also not uncommon in children. Though, hepato-cellular jaundice is managed well through Ayurveda, case reports on the same are rarely published. Here we bring a single case report on the management of hepato-cellular jaundice in a child. ***Materials and methods:*** A single case study is evaluated and documented for the response of the child with profound increase in bilirubin with Ayurveda treatment. Subjective and objective parameters including clinical manifestations, improvement in general health and changes on Liver function tests were documented for the purpose of discussion. An eleven year old boy with no previous major medical complaints presented with pain in right upper abdomen, loss of appetite, nausea, jaundice and weakness for last one month. Clinical examination revealed deep yellowish discolouration on sclera, oral mucosa, skin and urine. Investigations revealed profound hyperbilirubinemia, elevated liver enzymes with normal abdominal sonology and HBsAg. The condition was analysed on Ayurveda principles to arrive at conclusion of Koshtashakhashrita Kamala. The child was treated as per therapeutic principles of Kamala. ***Results:*** The therapy was found to be effective in alleviating raised total bilirubin levels from 18.4mg/dl to 1.6mg/dl and liver enzymes namely SGOT, SGPT, ALP from 1329u/l to 34u/l, 960u/l to 45u/l and 268u/l to 146u/l respectively. There was progressive improvement in the general well being and hemoglobin concentration. ***Conclusion:*** A single case of Koshtashakhashrita Kamala was effectively managed using Ayurvedic therapeutic principles and cured of clinical symptoms as documented on relevant investigations.

Keywords: Ayurveda, *Bahupitta Kamla*, Hepatocellular jaundice, *Koshta shakhashrita kamala,* Liver function test, *Virechana*

An eleven year old boy was brought to the out-patient department of Kaumarabhritya (Indian Pediatrics), Shri Dharmasthala Manjunatheshwara college of Ayurveda and Hospital, Hassan, Karnataka on 27-12-2015 with the complaints of yellowish discolouration of sclera and skin, mild itching all over the body, nausea, loss of appetite, pain in the right upper abdomen, extreme weakness, high coloured urine since 30 days. The child was having fever in the first week of onset of complaints. The child was apparently well before the onset of complaints and was not on any medication. There was no history of diarrhoea/ blood transfusions/ contact with patient of jaundice and surgery. He was only kid of non consanguineous parentage, belonging to lower socioeconomic strata and studying in public school at Tumkur and was a day scholar. Father was known case of Vatarakta (Rheumatic disease) and was on Ayurveda treatment for last one and half year. Immunization status was complete.

On examination the child was lean, ill looking, weak, pale, hemodynamically stable, afebrile, well oriented and responding to commands. His sclera was deep yellow; skin was dry, lustreless with yellowish hue. Pulse was 88per minute, regular and Blood pressure was within normal limit. Per abdominal examination revealed tenderness in the right upper quadrant and liver was palpable 1cm below the costal margin, soft and with normal peristaltic sounds. There were no cutaneous marker like spider naevi, ascites and palpable lymph nodes. Other systemic examinations including cardiovascular system, central nervous system and respiratory system were normal. Previously child was treated at district hospital for 28 days with oral medication and discharged with an advice to try alternative therapy. As per the parental words, investigations done at district hospital had ruled out possibility for typhoid and malaria while the total bilirubin kept on rising in spite of medication.

Personal history revealed that child had loss of appetite with very less intake of food, 4 kg loss of weight since the onset of illness. His bowel habit was once per day and 5-7 urinary outputs. Sleep was slightly disturbed and child had mild irritability on and off especially for food.

Investigations on admission was suggestive of hepato cellular jaundice with bilirubin total being 18.4mg/dl, direct bilirubin- 10.9mg/dl, indirect bilirubin 7.5mg/dl, SGOT-1329u/l and SGPT 960u/l, alkaline phophatase 268u/l, Hb-10.4g%, HBsAg was negative. Peripheral smear was normocytic, normochromic blood picture with mild neutrophilia. Urine albumin was nil while bile salts and pigments were present. Stool routine was normal except for few bacteria. The ultrasonography of abdomen was suggestive of hepatitis and ruled out the obstructive causes for jaundice.

Dasha vidha pareeksha (Tenfold examination): [1]

Prakriti (Constitution): Kaphapitta, Vikriti (Morbidity): Pitta, Sara (vitality): Reduced, Samhanana (compactness): Reduced, Satva (mental strength): Moderate, Deha bala (Physical strength): Less, Satmya (Acclamitization): Less, Agni (Digestion): reduced, Kostha (Bowel habit): Regular

Ashta sthana pareeksha (morbidity analysis at eight sites):[2]

Nadi (Pulse): Vatapitta, Mutra (Urine): Deep Yellow, Mala (stools): well formed, yellow, Jihva (tongue):Coated, Shabda (Sound): Normal, Sparsha (touch): cold, Dhrik (Eyes): Yellowish discoloured, akriti (Built): lean built

Srotas pareeksha (Systemic Examination of channels) :[3]

Rasavaha srotas: Agninasha (reduced digestion), aruchi (Distaste), alasya (Lethargy), gaurava (heaviness), roukshya (dryness), glani (languor)

Raktavaha srotas: Pandu (pallor), Kamala (Jaundice)

Mamsavha: aksha glani (impaired excellence of sense organs)

Arishta lakshana(Bad prognostic features): Nil

Samprapti Ghataka (Elements of Pathogenesis):

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Dosha	:	*Pitta Pradhana Kapha-vataja*
Dooshya	:	*Rasa, Rakta, Mamsa*
Agni	:	*Jatharaagni* and respective *Dhatvagni*
Avastha (Stage)	:	*Sama*
Srotas	:	*Rasa, Rakta, Mamsa*
Srotodustiprakara (Pathology)	:	*Sangha, vimargagamana*
Udbhava Sthana (Site of origin)	:	*Aamashaya*
Vyakta Sthana (Site of manifestation)	:	*Tvak, netra, mootra, nakha*
Rogamarga (Manifestation)	:	*Bahya*
Vyadisvabhava (Nature of illness)	:	*Chirakari* (Chronic)
Saadyasadyata (Prognosis)	:	*Krichrasaadya* (Difficult to manage)

Treatment done in the hospital: The child was diagnosed to be suffering from Koshta shakhashrita Kamala which is said to be bahupitta Kamala [4] (~Hepato cellular jaundice).

Table 4: Plan of Treatment: at Inpatient department

DISCUSSION

Kamala is Nanatmaja vyadhi (Specific disease) of Pitta.[7] Koshta shakhashrita Kamala is seen in pandu rogi (patient of Anemia) who indulges in Pitta vitiating diet and regimen. [8] Here in this case from the history

and examination it was suggestive that the child belonged to lower economic strata and was weak by constitution. Unsteady dietary pattern and fever followed by a travel had triggered pitta vitiation in child leading to manifestation of Kamala. The clinical features like yellowish discolouration of sclera, skin, mild itching all over the body, nausea, loss of appetite, pain in the right upper abdomen extreme weakness, initial fever, high coloured urine and yellow stools all were suggestive of Koshta shakhashrita kamala. The preferred treatment principle was Mridu virechana (mild therapeutic purgation), vatanulomana (regulation of downward movement of vata), Pitta shaman alleviating vitiated pitta), Agni vardhana (improving digestion and metabolism) and Kapha sara vardhana (uplifting body strength). At first instance, child was planned with pitta shamana, shothahara (anti inflammatory), marga rodha hara (clearing obstruction) and agnivardhana treatment. Pain in right hypochondrium and other features of kapha namely guruta, agnimandya, kamala and kandu were suggestive of amavastha (evolving pathogenesis) of disease and sanga (obstruction) to the normal pitta channels was thought and hence rajahpravartini vati and patolakaturohinyadi kashaya were chosen. Further, these drugs would aid in mridu pitta rechana (mild laxation) as in this stage planning virechana was difficult considering amavastha of disease as well as reduced rogi bala (strength of child). First three days of treatment resulted in relief of acute pain in the abdomen and improvement in agni (indicated by reduced pain abdomen, better acceptability of food, easy evacuation of bowels and lightness of body and initial complaints). In the next step, sadyovirechana with Sukhabedhi tablet [9] resulted in four loose stools and thus expected mridu virechana, the first line therapy for Kamala was accomplished. [10] Further, effectiveness of this step was supported by fall in the bilirubin and liver enzymes level shown on LFT. This was followed by one week further use of oral medication along with specified diet and predominant rest. During this period further improvements were noted in the subjective and objective features of illness, indicating improved health status. There was transient elevation in bilirubin levels with less marked changes seen on liver enzyme activity on LFT. These transient changes may be attributed to increased physical activities of the child, who was difficult to be restrained. Further course of sadyo virechana with 50g trivrit leha (on 10-01-2016) resulted in marked changes on liver parameters as shown in the table. Encouraging results continued with shamanaoushadha (disease alleviating oral medication) as evidenced by reduced jaundice (image 1), progressive improvement in the general health of the child and reduction in the investigatory findings. Improvement in the digestion and strength of child prompted us to go for Sadya snehana (instant oleation) [11] with Dadimadi ghrita (70ml) which took six hours to digest. Next day child was given light massage, nadi sweda (fomentation) and induced virechana with 50g Trivrit leha[12] of Kottakkal Pharmacy along with dry grape juice100ml frequent sips. Child had eleven virechana episodes and his vitals and hydration were within the normal limits. There were no complications noted during the course of virechana. Throughout the stay in the hospital child's general condition was stable and did not require any emergency or intravenous interventions. No additional fluids or sugar water were prescribed. Repeat LFT showed drastic reduction in the evaluation parameters. The child was discharged with advice of shamanaoushadha and specific diet and home care for next two weeks. Follow up evaluation revealed clinical absence of features of jaundice though was marginally raised on LFT. The fact was further confirmed by absence of bile salts and pigments in urine analysis. Improvement in general health was accentuated by weight gain and activity. The child was now started with vyadhipratyaneeka rasayana (Disease specific rejuvenating drug) namely Drakshamalaka leha. [13]

Among the drugs adapted for treatment, both Vasa (*Adathoda vasica*) [14], and Guduchi (*Tinospora cordifolia*) [15, 16] are well known hepatoprotective and are first line drugs for pittaja vyadhi specially so for kamala. Bhumyamalaki (*Phyllanthus neruri*), [17] Katuki (*Picrorhiza curroa*) [18] and Punarnava (*Boerrhavia diffusa*) [19] are proven for hepato protective activity. Punarnava is known for shothahara[20-21] and mutrala (diuretic) [22] property as well. Further, varieties of Phyllanthus species have shown antiviral activities on various hepatitis viruses. [23] Thus it can be stated that the combined action of these herbs and periodic virechana aided in reliving the signs and symptoms of kamala. Further, the diet planned was bland, less fat, carbohydrate rich and simple proteins along with vitamin A rich fruit juices and sugar cane juice. These would aid in less hepatic load of digestion, act as instant energy sources to reduce fatigue and also aid in normalizing inflamed hepatocytes.

CONCLUSION

An eleven year child was diagnosed with Koshta shakhashrita kamala (~hepatocellular jaundice) based on clinical symptomatology and laboratory investigations. Child was treated with simple Ayurveda remedies,

periodic cleansing therapy and diet. Encouraging results on clinical and laboratory parameters are discussed with relevance to research updates. Application of kamala treatment principles with due consideration of roga avastha vishesha (pathological stage of disease) can be the key of success in treating profound hepato cellular jaundice.

Key Message:

Hepato-cellular jaundice responds well to Ayurveda when treated on the principles of Kamala.

Acknowledgments:

Authors are highly grateful to our revered President, Dr. D. Veerendra Heggade and Dr. B. Yashoverma, Secretary, SDM Educational Society for the encouragement. Authors highly regard the constant support of Dr. Prasanna N Rao, Principal, SDM College of Ayurveda, Hassan.

Conflicts of Interest: The authors declare no conflict of interest.

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Table 1: Blood picture reports on two different dates

Test	**28-12-2015**	**18-01-2016**
Hb	10.48g%	11.9g%
TWBC	11800/cmm	9000/cmm
ESR	6mm/hr	4mm/hr
Neutrophils	67%	43%
Lymphocytes	30%	47%
Monocytes	1%	5.7%
Eosinophils	2%	4.2%
Platelets	4.40lakhs/cmm	4.13lakh/cmm
RBC	4.10million/cmm	4.11million/cmm
PCV	34.1%	34.4%
MCV	83.2	84
MCH	27.8	29
MCHC	33.4	34.7
RDW	61.2	52
RBS	80.3mg/dl	
Blood urea	14.0mg/dl	
HBsAg	Negative	

Table 2: Liver function tests (LFT) reports on different dates during the course of treatment

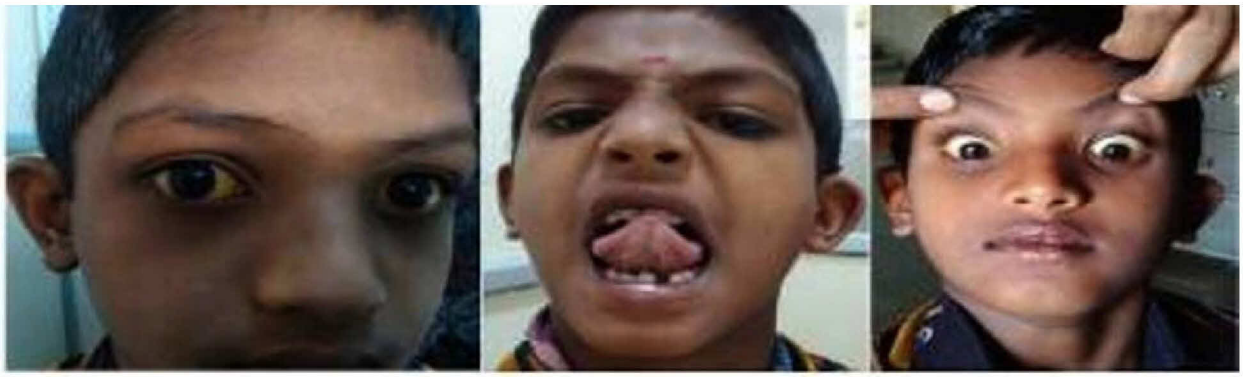
Test	**28-12-15** (On admission)	**30-12-15**	**06-01-16**	**11-01-16**	**18-01-16** On discharge	**28-01-16** (Follow up 1)	**17-02-16** (Follow up 2)
		During treatment					
Total bilirubin	18.4mg/dl	16.1mg/dl	17.1mg/dl	12.3mg/dl	6.7mg/dl	3.6mg/dl	1.6mg/dl
Direct bilirubin	10.9mg/dl	9.4mg/dl	10.5mg/dl	6.5mg/dl	3.4mg/dl	2.0mg/dl	1.0mg/dl
Indirect bilirubin	7.5mg/dl	6.7mg/dl	6.6mg/dl	5.8mg/dl	3.3mg/dl	1.6mg/dl	0.6mg/dl
Total protein	6.7mg/dl	6.9mg/dl	7.9mg/dl	8.9mg/dl	8.9mg/dl	7.5mg/dl	8.5mg/dl
Albumin	3.6mg/dl	3.8mg/dl	3.7mg/dl	4.1mg/dl	4.2mg/dl	4.2mg/dl	4.2mg/dl
SGOT	1329u/l	1300u/l	1128u/l	762u/l	346u/l	167u/l	34u/l
SGPT	960u/l	970u/l	938u/l	740u/l	384u/l	179u/l	45u/l
ALP	268u/l	263u/l	163u/l	140u/l	146u/l	176u/l	146u/l

Table 3: Urine examination reports on different dates during the course of treatment

Test	28-12-15	06-01-16	18-01-16	28-01-16
Albumin	Nil	Nil	Nil	Nil
Sugar	Nil	Nil	Nil	Nil
Bile pigments	Present	Present	Present	Absent
Bile salts	Present	Present	Present	Absent

Table 4: Plan of Treatment: at Inpatient department

Date	Chikitsa done	Diet
28-30th December 2015	Vasa + Guduchi swarasa with honey 30ml once daily on empty stomach Rajah pravartini tablet (containing Kumari (*Aloe vera)* as key content) 1-0-1 after food Patola katu rohinyadi Kashaya 20ml with 40ml water evening before food	Barley water Green gram dal Rice gruel with buttermilk Sugar cane juice
1-January-2016	Sadyo virechana (~purgation) with Sukhabedhi tablet- 2 at bed time. Resulted in 4 episodes of loose stools, yellowish, watery on next morning. There was no pain abdomen. Vitals stable.	Green gram dal Rice gruel with buttermilk
2-9th January-2016	Bhumyamalaki churna+ guduchi churna+ punarnava churna+ Katuki churna – 2.5gram three times a day with honey after food Tablet. Nirocil 1-0-1(extract of Bhumyamalaki [5] after food Syp Liv 52(containing Himsra (*Capparis spinosa*)and Kasani (*Cichorium intybus*) as major ingredients) [6] 2 tea spoonful before food	Cooked Rice Green gram dal Rice gruel with buttermilk Sugar cane juice and Papaya fruit
10th January 2016	Sadyo virechaa with Trivrit Leha 50g with draksha rasa 100ml frequent sips at 8.30 am. Child had 9 vegas	Green gram dal Rice gruel with buttermilk
11- 15 January 2016	Bhumyamalaki churna+ guduchi churna+ punarnava churna + Katuki churna – 2.5gram three times a day with honey after food Tablet. Nirocil 1-0-1 after food Syp Liv 52- 2 tea spoonful before food	Cooked Rice Green gram dal Rice gruel with buttermilk Sugar cane juice and Papaya fruit
16 January 2016	Sadya snehapana with Dadimadi ghrita 70ml at 6 am with intermittent hot water sips. Child had kshudha pravritti by 3 pm	Rice gruel
17th January 2016	Mridu Abhyanga with Yashtimadhu taila and Nadi sweda Virechana with Trivrit Leha 50g with draksha rasa 100ml frequent sips at 8.30 am. Child had 11 virechana vegas	Rice gruel with buttermilk Green gram dal
18 January 2016	Child discharged with advise Mandura vataka 1-0-1 after food Tablet Nirocil 1-0-1 after food Bhumyamalaki churna+ guduchi churna+ punarnava churna + Katuki churna – 2.5gram three times a day with honey after food	Cooked Rice Green gram dal Rice gruel with buttermilk Sugar cane juice and Papaya fruit
28 January 2016 follow up	Tablet Nirocil 1-0-1 after food Drakshamalaka rasayana 5g twice daily after food	Regular south Indian diet with less oil Papaya, apple fruit, boiled milk



Before treatment (28-12-2015)

After 15 days (13-01-2016

During treatment (19-01-2016)

After treatment (28-01-2016)