

Ayurvedic Management Of Kamala (Viral Hepatitis A) In An Adolescent: A Case Report

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ABSTRACT:

The outbreaks of foodborne Hepatitis A have been reported frequently in recent two decades in India which mostly affects children and adolescents. In India most food handlers are exposed to unsatisfactory environmental sanitation and poor water quality which increases the risk of HAV infection and consequently the transmission of HAV from food handlers to adolescent children. Considering the evolving craze of junk food culture in children and teenagers this narrative review marks a ground for implementing strategies to tackle hepatitis A by *ayurvedic* intervention and reduce the burden of hepatitis A outbreaks. This case report highlights the effect of *Ayurveda* intervention in the management of HAV i.e. *Kamala*. *Ayurveda* views hepatitis i.e. *Kamala* as a *pitta* imbalance and blood impurity issue rather than just "Icterus". Modern medicine often treats hepatitis symptomatically, focusing on reducing bilirubin levels but in *Ayurveda* the treatment approach aims to address to the root cause and restore body's imbalances. Treatment like *Virechana* detoxify liver by expelling aggravated *Pitta* from liver and intestines, relieving bile ducts and restoring normal liver function. Hepatoprotective hepatic stimulant Drugs like *Arogyawardhini* and *Manibhadra Avleha* are *Virechak*, *Malavatanulomak*, *Mootrala*, *Rasayana*, *Pittasarak* having anti-viral, antibacterial, anti-inflammatory, immunomodulator activities which aids liver function and blood purification.

Key words: Acute Viral Hepatitis, HAV, Hepatitis A Virus, Kamala, Arogyavardhini vati, Manibhadra Avleha, Virechana, Ranjak pitta.

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INTRODUCTION:

According to World health organization viral hepatitis poses significant health issue ranking as second leading infectious cause of death globally with 1.3 million deaths per year, a top infectious killer¹. Collectively shouldering nearly two-thirds of the global burden viral hepatitis remains an unravelling menace in Indian society. Unlike hepatitis B and C, hepatitis A does not cause chronic liver diseases but it can cause mild to moderate symptoms and rarely fulminant hepatitis (acute liver failure) which is fatal. Hepatitis A infections surge during monsoons as it brings with it an environment that is conducive for disease spreading germs to multiply and this short-term infection spreads through poor sanitation and unhygienic conditions leading to symptoms such as fever, malaise, anorexia, abdominal discomfort, dark urine and jaundice. The management of hepatitis in India is hampered by insufficient facilities, limited screening facilities and high treatment costs. Therefore, there is a need to address this issue and launching alternative comprehensive treatment strategies to stem the spread of hepatitis in India and worldwide. Viral hepatitis resembles "*Kamala*" in *Ayurveda*, whose description is very comprehensive in texts and incorporates the disorders of hepatobiliary system of modern medicine. *Kamala* is more than just yellowing of skin and the eyes as it treated as a hint to deeper imbalances in the

body and these involve liver and blood. Cardinal symptoms² are *Haridra Netra* (Yellowish discoloration of sclera), *Haridra Twak Nakha Anana* (Yellowish discoloration of skin, nails and face), *Rakta Pitta Shakrut Mutra* (Reddish yellow discoloration of stool and urine), *Hatendriya* (Debility of senses), *Avipak* (Indigestion), *Daurbalya* (Generalized fatigue) and *Aruchi* (Loss of appetite). *Acharya Charaka* regarded *Kamala* as an advanced stage of *Panduroga* highlighting its interconnection of blood and liver function. *Kamala* is considered as *Pittaj Nanatmaja*³ disorder which arises due to an increase in *pitta dosha* which is also seen in *Rakta Pradoshja Vikara*⁴ which stems from impurities in blood. When the patient excessively and regularly consumes articles increasing *pitta*, his *pitta* gets viated more and affects *Rakta* and *Mamsa* producing *Kamala*. The eyes, skin and nails become similar to color of *Haridra*. Urine and stool become yellowish and color of patient becomes similar to frog of rainy season (*Bhekovarna*)⁵.

Despite tremendous advances in modern medicine there is no effective hepatoprotective medicine that can be used at primary care level for preventing fatality of this disease. Many ayurvedic formulations are proved to be effective and are substantiated by various clinical trials mentioned in the action such as *Pittahara (Elimination of choler)*, *Yakrutejaka* (Liver stimulant),

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Strotoshodhak (Duct and channel purifier) and *Rasayana* (promoting longevity) properties.

MATERIALS AND METHODS:

The present study focuses on the treatment modalities which have been indicated in the management of *Kamala* in the source of textbooks of *Ayurveda Samhitas* and *Nighantus* and understanding of *Kamala* according to *ayurvedic* fundamentals.

Samhita granthas, post graduate research studies and WHO case reports were used for this study. The study has been compiled and a particular emphasis is placed on the interrelation of *Ranjak Pitta* and bile as to clarify the etiology, symptomology and mode of action of *Virechana* therapy for the management of acute viral hepatitis.

CASE REPORT:

A 12-year-old female patient visited Kaumarbhritya outpatient department with chief complaints of

vomiting, loose motions, nausea, anorexia and fever for days 7-8 days. She was asymptomatic 8 days ago. On examination of patient icterus was present, pallor absent, tongue was coated and has mixed diet style. Her appetite was poor and her bowel habits were irregular with complaints of loose stools with the frequency of 4-5 times per day. She had intermittent diffused pain in abdomen and disturbed sleep.

CASE DETAILS:

On *Prashna Parikshan*, it is found that the patient has faulty dietary habits such as eating food from outside and unhygienic hand habits. The patient lives in urban area and has no history of any major illness. The patient studies in a private school and frequently consumes meals from canteen. The patient's mother has history of HTN for the past 12 years and is on treatment with metoprolol tartrate. Examination and the history led to the diagnosis of hepatitis A confirmed by the HAV IgM positive test.

Table no 1: Ashtavidha Pariksha Dated 04/03/2025

<i>Nadi</i>	88/ min
<i>Mutra</i>	<i>Vikrut varna</i> yellow urination
<i>Mala</i>	<i>Vikrut varna</i> dark stool
<i>Jiwha</i>	Coated
<i>Sabdha</i>	Normal
<i>Sparsha</i>	<i>Ushna</i>
<i>Drik</i>	Yellowish discoloration of sclera
<i>Akruti</i>	<i>Madhyama</i>

Table no 2: General physical examination

Blood pressure	110/70 mm Hg
Pulse rate	78/min
Respiratory rate	18/min
General condition	Moderate
Pallor	Present
Icterus	Present
Cyanosis	Absent
Clubbing	Absent
Lymph nodes	Not palpable
Edema	No edema

Samprapti (Pathogenesis):

- *Dosha- Pitta Pradhan Tridosha*
- *Dushya-Rasa, Rakta, Mamsa (Twak)*
- *Srotas-Annawaha, Rasawaha, Raktawaha, Mamsawaha, Mutrawaha, Purishwaha*
- *Srotodusti- Atipravriti, Sanga, Vimargagaman.*
- *Ama-Sama*
- *Agni-Mandagni*
- *Samuthana-Amashaya*
- *Adhithana-koshtha shakha*
- *Vyakta stana Netra Twak Mala Mootra Nakha*
- *Sadhysadhyta-Sadhya*

Table no 3: Assessment based on blood investigation

BLOOD INVESTIGATION	ON MARCH 4 2025	ON MARCH 7 2025	ON MARCH 28 2025
LFT			

Ayurvedic Management Of Kamala (Viral Hepatitis A) In An Adolescent: A Case Report

TOTAL PROTEIN	7.01 G/DL	6.93G/DL	8.70 G/DL
ALBUMIN	3.43 G/DL	3.15G/DL	4.60G/DL
GLOBULIN	3.58G/DL	3.78G/DL	4.10G/DL
A/G RATIO	0.96	0.83	1.1
TOTAL BILIRUBIN	4.42MG/DL	4.66MG/DL	0.94MG/DL
DIRECT BILIRUBIN	2.89MG/DL	3.63MG/DL	0.56MG/DL
INDIRECT BILIRUBIN	1.53MG/DL	1.03MG/DL	0.38MG/DL
SGPT	670.5U/L	370U/L	24U/DL
SGOT	666.7U/L	106.4U/L	31U/DL
S. ALKALINE PHOSPHATASE	1171.9U/L	1176.2U/L	383U/L

4 MARCH 2025	HBSAG HEPATITIS B SUFACE ANTIGEN	NON-REACTIVE
4 MARCH 2025	ERYTHROCYTE SEDIMENTATION RATE	12MM/HR
4 MARCH 2025	COMPLETE BLOOD COUNT HB HCT WBC PLT	14.9G/DL 41.7 % 6220/UL 199000/UL
4 MARCH 2025	C REACTIVE PROTIEIN	2.9 MG/L
4 MARCH 2025	ELECTROLYTES SERUM SODIUM SERUM POTASSIUM IONIC CALCIUM	141.1 MMOL/L 3.67 MMOL/L 1.05 MMOL/L
4 MARCH 2025	PROTHROMBIN TIME PT-INR TEST CONTROL INR	16.2 SEC 14.8 SEC 1.09
4 MARCH 2025	URINE ROUTINE EXAMINATION PHYSICAL EXAMINATION COLOUR CHEMICAL EXAMINATION REACTION ALBUMIN KETONES BILE SALTS BILE PIGMENT	YELLOW ACIDIC TRACE ABSENT PRESENT PRESENT
5 MARCH 2025	HAV IGM ANTIBODIES TO HEPATITIS A	POSITIVE 2.26
5 MARCH 2025	USG ABDOMEN + PELVIS	The Liver Is Mildly Enlarged In Size And Shows Reduced Echotexture Of Parenchyma. Gall Bladder Is Collapsed With Wall Edema Noted. Two To Three Enlarged Lymph nodes Are Seen In Porta Hepatis And Peri Pancreatic Region, Largest Of Size 15 X 8 Mm Seen In Porta Hepatis.

Table no 4: Therapeutic interventions

Sr No	Oral Medication	Dose	Duration	Aushadhi sevan kal	Anupana
1.	Tb Arogyawardhini	250 mg BD	14 days	Before meal	Luke warm water

2.	Tb Livomyn	1 Tb BD	30 days	After meal	Water
3.	<i>Manibhadra Avleha</i>	5 gm HS	21 days	After meal	Luke warm water
4.	<i>Bhunimbadi Kwath</i>	5 ml BD	30 days	Before meal	Water

Table no 5: Changes observed week wise

Week	Changes observed	Percentage of improvement
Week 1	After treatment Icterus reduced by 20% Urine turns slightly lighter Slight improvement in appetite Fatigue reduced but still present	10-20 % mild improvement
Week 2	Icterus reduced by 50% Dark urine changed to light yellow Stool color returned to normal Appetite moderately improved Significant reduction in fatigue	30-50 % moderate response
Week 3	Mild residual icterus Normal urine color Good appetite Improved digestion	60-80 % marked cure
Week 4	Icterus almost resolved Normal urine and stool color No abdominal discomfort Liver not palpable	90% overall improvement

Table no 6: Effect of therapy on symptoms assessed by prashna parikshan

Symptoms presented	Before treatment	After treatment
<i>Haridra Netra haridra twak</i> (Icterus)	Marked icterus of skin and sclera	Resolved icterus
<i>Mutra varna</i> (Urine color)	Dark yellow	Clear urine
<i>Mala varna</i> (Stool color)	Dark	Normal color and consistency
<i>Agnimandya</i> (Appetite)	Poor	Appetite normal Digestion improved
<i>Daurbalya</i> (Fatigue)	Felt weak all-day tiredness	Feels energetic
Abdominal discomfort	Bloating heaviness	No discomfort
<i>Chittodvega</i> (restlessness)	Restlessness	Calm and fewer anxious thoughts
Sr bilirubin	Total 4.42mg/dl Direct 2.89mg/dl	Total 0.94 mg/dl Direct 0.96 mg/dl

Pathyaha (Diet regimen) advised:

Laghu supachya anna, Shastika shali, Yavagu, Laja manda, Tikta Madhur ahar, Gokshreer, Narikela jala, Ikshu rasa, Dadim and adequate rest were advised.

Apathya: *Snigdha ahara*, fried food, excessive *Katu, Amla, Lavana Rasayukta ahara*, excessive exercise, *Diwa Swapna, Yanayan* were strictly avoided.

Follow up and outcomes:

Patient is in follow up with improved symptoms and no adverse effect of prescribed drug. Patient is now progressively getting well and none of the symptoms have reoccurred. Biochemical parameters showed near normalization of liver function tests by the end of follow up.

DISSCUSSION:

The ayurvedic understanding of *Kamala* is remarkably detailed. Here “*KAMA*” means general willing and word “*LA*” means to give that is giving up of desires by human. According to classical texts the *Yakrut* (Liver) and *Pleeha* (Spleen) and the *Srotas* that carry bile and

blood plays an important role in its development. The *samprapti* could be understood as when *pitta* becomes aggravated due to poor diet, irregular lifestyle and emotional stress it accumulates in liver and blood leading to impaired metabolism and the symptoms of *Kamala*⁶. Deranged *Ranjak pitta* results in the yellowing of skin and eyes, weakened digestion and there is loss of appetite, fatigue and sometimes fever. One of the first solutions and treatments mentioned in the scriptures is of detoxification and purgation

VISHESH CHIKITSA SUTRA OF KAMALA

The main diagnostic tool for *Kamala* “*Ranjak pitta*” and its *stana Yakrut* (Liver) are involved in the *samprapti* of *Kamala*⁷. *Ranjak* refers to the pile pigments. *Pitta* refers to bile salts. Bile salts have choleric action that stimulates the secretion of bile from the liver. *Ranjak pitta* is a factor involved in the formation of *Rakta dhatu* which correlates the action of erythropoiesis (red blood cell production) in liver and spleen. In Ayurveda *Kamala* is believed to arise when there is an excess of *Ranjak pitta* leading to the

yellowish discoloration of skin. The skin manifestation brought on by *Ranjak pitta* is caused by symbiotic relation between *Rasa* and *Twak*. *Yakrut* and *Pleeha* are the moola of *Raktawaha Srotas* and *Virechana* is the first line of treatment for *Raktawaha Srotas vyadhi*. *Acharya Charak* has mentioned ‘*kamale tu virechane*’ as *chikitsa sutra*⁸. *Virechana* drugs have *Ushna*, *Tikshna*, *Sukshma*, *Vyayvayi*, *Vikasi* properties with *Adhobhaghara Prabhava* due to which *virechana Dravya* lead to softening, disintegration, liquefaction of endogenous metabolites and they are brought to *koshta* for elimination⁹. *Acharya Kashyapa* emphasized the importance of *Virechana* as a procedure that clarifies the *Indiyas*, cleanses the *Dushta Dhatus* and has efficacious effect on *Beeja* (sperm and ovum)¹⁰. *Virechana* leads to *Pradeepan* of *Dhatwagni* which in turn results in the maintenance of dosha dhatu equilibrium which is beneficiary for the formation of *Uttarottar Dhatu* and their nourishment. each and every cell gets nourished through *rasa dhatu* which enhances the production of essence of *dhatu* ‘*Oja*’ in the body which is responsible for immunity. *Virechana* works on level of *Dhatwagni* which plays an important role in the formation of *Rasa dhatu* further regulating *Agni Vaigunyata* and eliminating *Vayu Avarana* from *Koshta* resulting in more bile secretion and peristaltic movements by purgative action. When

relaxation phase of peristalsis begins, relaxed sphincter of Oddi allows influx of bile into gastrointestinal tract therefore this bile can be compared to *Pitta* which along be other toxins will be eliminated during *Virechana*.

As per contemporary parameters fecal route is considered as the most important route of bile excretion. *Virechana* enhances the bile excretion by increasing the bowel motility and also hampering its enterohepatic circulation of bilirubin. During *Virechana karma* there is relaxation of sphincter of Oddi by which bile enters the duodenum and it gets eliminate though ampulla of Vater. It reduces the hepatic load by eliminating excessive bile in the form of stercobilin and reduces the hyperbilirubinemia¹¹.

Kamala is a *Pitta Pradhan* disorder involving *Ranjak Pitta* and *Rakta Dhatu* with *Yakrut* as the main site of pathology. In this case *Mandagni* lead to *Pitta Vriddhi* and *Rakta Dushti*, presenting as icterus. *Ayurvedic* dietary management played an important role in breaking the *Samprapti*. *Laghu Pittahara Deepan Pachana Ahara* supported *Agni* without stressing the liver. *Pathya* foods such as *Shashtika Shali*, *Mudga Yusha*, *Draksha* and *Dadim* helped in *pitta shamana* and *Rakta prasadanam*, while avoidance of *Guru* and *Vidahi* foods prevented further aggravation¹².

Table 7: Probable Mode of Action of Ayurvedic Drugs Used for Management of Kamala

Sr no	Formulation	Major ingredients	properties	Probable mode of action
1	<i>Arogyavardhini vati</i> ¹³	<i>Haritaki</i> (Terminalia chebula), <i>Bibhitaka</i> (Terminalia bellirica), <i>Amalaki</i> (Emblica officinalis), <i>Silajatu</i> (Asphaltum), <i>Guggulu</i> (Commiphora wightii), <i>Eranda</i> (Ricinus communis), <i>Katuka</i> (Picrorrhiza kurroa Royle), <i>Nimba swarasa</i> (Azadirachta indica) and minerals like <i>Shuddha Rasa</i> (purified mercury), <i>Shuddha Gandhaka</i> (purified sulfur), <i>Lauha Bhasma</i> (iron compound in ash form), <i>Abhraka Bhasma</i> (mica in ash form), and <i>Tamra Bhasma</i> (copper compounds in ash form).	<i>Pittashamaka</i> <i>Rechak</i> Cholagogue <i>Yakrutottejak</i>	Exhibits anti-inflammatory and antiviral activity. The cholagogue property promotes bile secretion into intestines, enhances peristalsis and facilitates elimination of <i>Dushit Pitta</i> before absorption thereby correcting <i>Ranjak Pitta</i> dysfunction and supporting hepatic recovery.
2	<i>Livomyn tablet</i> ¹⁴	<i>Kalmegha</i> (Andrographis paniculata), <i>Bhoomiamlaki</i> (Phyllanthus niruri), <i>Punarnava</i> (Boerhavia diffusa), <i>Kutaki</i> (Picrorrhiza kurroa), <i>Guduchi</i> (Tinospora cordifolia), <i>Daruharidra</i>	<i>Yakritposhaka</i> <i>Pittashamaka</i> <i>Deepana</i> <i>Shothohara</i>	Enhances liver function and normalizes hepatic inflammation. <i>Bhoomiamalaki</i> confers hepatoprotective action by modulating oxidative stress inflammatory and liver remodeling pathways. Regulates bile metabolism and secretion,

		(<i>Berberis aristata</i>), <i>Kumari</i> (<i>Aloe barbadensis</i>) and <i>Triphala</i> .		antioxidant activity reduces free radicles and alleviates symptoms of viral hepatitis.
3	<i>Manibhadra Avleha</i> ¹⁵	<i>Vidanga</i> (<i>Embelia ribes</i>), <i>Amlaki</i> (<i>Embelia officinalis</i>), <i>Haritaki</i> (<i>Terminalia chebula</i>), <i>Trivrutta</i> (<i>Operculina turpethum</i>) and <i>Guda</i> (<i>Saccharum officinarum</i>)	<i>Sukha Virechak Anulomaka Raktashodhka Pittahara</i>	Facilitates gentle purgation aiding removal of <i>Malarupi Pitta</i> . Jaggery enhances digestion, purifies blood and exhibits hepatoprotective activity ¹⁶ . Acts at the level of <i>Bhootagni</i> improving enzymatic liver function, circulation of <i>Ahara Rasa</i> and nourishment of <i>Rasadi Sapta Dhatu</i> thereby improving metabolism.
4	<i>Bhunimbadi Kwath</i> ¹⁷	<i>Bhunimba</i> (<i>Andrographis paniculata</i>), <i>Ativisha</i> (<i>Aconitum heterophyllum</i>), <i>Lodhra</i> (<i>Symplocos racemosa</i>), <i>Musta</i> (<i>Cyperus rotundus</i>), <i>Indrayava</i> (seeds of <i>Halorrhena antidysenterica</i>), <i>Guduchi</i> (<i>Tinospora cardifolia</i>), <i>Balaka</i> (<i>Coleus vettiveroides</i>), <i>Dhanyaka</i> (<i>Coriandrum sativum</i>), <i>Bilva</i> (<i>Aegle marmelos</i>)	<i>Pittasarak Jwarahara Yakrutottejak Lekhan</i>	Acts as a potent hepatoprotective drug. Enhances <i>Agni</i> , reduces <i>Kleda</i> and <i>Ama</i> increases <i>Pachakagni</i> and regulates metabolism. Its <i>Lekhan</i> and <i>Shodhan</i> properties help maintain normal bilirubin levels and stabilize bile production.

CONCLUSION:

Viral hepatitis imposes a significant toll on both individual and society at large as it mostly affects adolescents and young adults. Apart from financial costs associated with treatment the disease carries a social stigma that can adversely affect the mental health of these adolescents. Formulations used in this case study helps to improve symptoms and cause a reduction in the values of liver function tests. So, it is concluded that hepatitis A can be successfully treated with formulations prescribed in *Ayurveda*. Therefore, timely diagnosis and opting for *Ayurvedic* treatment protocol can play a pivotal role in managing acute viral hepatitis and mitigating its impact.

INFORMED CONSENT:

Informed consent for the publication of the data was taken from the patient.

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