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ABSTRACT

Hyperbilirubinemia, or jaundice, is a life-threatening disorder in newborns. It is a multifactorial disorder with many symptoms. Generally, the physiological jaundice is the most prevalent type however in some regions pathological jaundice is also common. It is the most common disease during neonatal period occurring mostly due to increased haemolysis, decreased hepatic clearance, enterohepatic circulation, immaturity, blood group incompatibility and infections. This review article focuses on a brief introduction to jaundice, Its Ayurvedic management includes use of proper antenatal care, madhu mixed with ghrita or ananta with madhu and ghrita, Suryadarshana,

Chandradarshana, Stanyashodhak chikitsa and some medicines likes Nimbpatra swarasa, Triphala, Kumarkalyana rasa, Guduchi.

KEYWORDS: Hyperbilirubinemia, madhu, surya-chandradarshana etc.

INTRODUCTION

Jaundice is the yellow discoloration of the skin and sclera due to raised serum bilirubin level. It is the most common abnormal finding during early neonatal life period^[1] Most of the cases of neonatal jaundice are physiological jaundice and the level of serum bilirubin is not so much raised to cause fatal brain damage due to bilirubin encephalopathy but every case of neonatal jaundice should be managed very sincerely to prevent such consequences because of poor brain blood barrier during neonatal period. Though modern science has developed many modalities to manage neonatal jaundice but Ayurvedic approach for its prevention and

treatment is not less important.

One of the most prevalent clinical conditions in is hyperbilirubinemia.^[2] Neonatal hyperbilirubinemia is a common clinical problem encountered during the neonatal period, especially in the first week of life,^[3,4] Nearly 8% to 11% of neonates develop hyperbilirubinemia. When the total serum bilirubin (TSB) rises above the 95th percentile for age (high-risk zone) during the first week of life, it will be considered as hyperbilirubinemia,^[5,6]

Causes of neonatal jaundice

Most common causes of neonatal jaundice in Indian country in order of incidence are type of physiological jaundice, immaturity, blood group incompatibility, antenatal and postnatal infections, certain drugs and breast milk jaundice, G-6PD deficiency disease, Rh factor incompatibility, cephalohematoma,^[7] In about one third cases the causes of neonatal Hyperbilirubinemia are still unknown. The main textbook on Ayurvedic pediatric, Kashyapa Samhita describes the feature of jaundice as yellow discolouration of the eyes, nails, face, stool and urine with laziness (*nirutsah*), loss of digestive power (*nastagni*), desire to take blood(*rudhirspraha*)^[8] *Pishachi Jataharini* which is known to its yellow colour causes death of the baby after delivery on first day,^[9] Baby feeding on milk vitiated by *Pitta Prakupit dosha* also produces symptoms such as excessive thirst, feverish body, sweating and loose motion.^[10]

Physiological Jaundice

It is the most abundant type of newborn hyperbilirubinemia, having no serious consequences,^[11] Neurodevelopmental abnormalities including as athetosis, loss of hearing, and in rare cases intellectual deficits, may be related to high toxic level of bilirubin.^[12]

Pathological Jaundice Bilirubin levels with a deviation from the normal range and requiring intervention would be described as pathological jaundice.^[13] Appearance of jaundice within 24 h due to increase in serum bilirubin beyond 5 mg/dl/day, peak levels higher than the expected normal range, presence of clinical jaundice more than 2 weeks and conjugated bilirubin (dark urine staining the clothes) would be categorized under this type of jaundice.

Clinical Examination of Jaundice.

Originally described by Kramer,^[14] dermal staining of bilirubin may be used as a clinical guide

to the level of jaundice. Dermal staining in newborns progresses in a cephalo-caudal direction. The newborn should be examined in good daylight. The physician should pale the skin by digital pressure and the underlying color of skin and subcutaneous tissue should be noted. Newborns who are detected the yellow skin beyond the thighs should have an urgent laboratory confirmation for bilirubin levels. Clinical assessment is unreliable if a newborn has been receiving phototherapy and has dark skin.^[15,16]

Treatment Options for Jaundice

The treatment options for jaundice include phototherapy further subdivided to conventional, intensive and exchange transfusion, and pharmacological treatment subdivided to phenobarbitone, intravenous immunoglobulins (IVIG), metalloporphyrins and follow up remedies.^[17]

Phototherapy

Hyperbilirubinemia can be treated easily without or with a minimal adverse effect with phototherapy.^[18] The efficacy of phototherapy depends on surface area exposed to phototherapy: Double surface phototherapy may be more effective than single surface phototherapy.^[19]

1. Conventional Phototherapy

One can use conventional or fiber-optic phototherapy units provided jaundice is non-hemolytic or its progression is slow.

2. Intensive Phototherapy

In the circumstances including hemolytic jaundice, rapidly increasing bilirubin, or ineffectiveness of a conventional unit, using of intensive phototherapy is warranted. Placing the baby on the bili-blanket and using additional overhead phototherapy units contain blue lights and then lowering the phototherapy units to within a distance of 15–20 cm are two significant remedies.^[20]

3. Exchange Transfusion

Through exchange transfusion bilirubin and haemolytic antibodies are removed.^[21]

Ayurvedic approach for the management of neonatal jaundice

Firstly, it is important to diagnose the probable type of jaundice physiology and pathology of jaundice. Baby should be clinically screened minimum twice a day from the birth in a good

day light and its appearance, rate of increase and severity should be estimated so that starting of modern management like phototherapy and blood transfusion if needed could be done to prevent fatal bilirubin encephalopathy. Use of proper antenatal care to the mother Avoidance of pitta vitiating *ahar vihar* during pregnancy and after delivery, Avoidance of *dhoompana* (smoking) and *swedana* because it may produce *vivarnata* (discolorations) to the fetus,^[22] Use of Ayurvedic drugs for the common problem of pregnant mother in spite of harmful allopathic drugs. *Ajeerna* (indigestion) should be avoided during lactation.

Use of jatakarma samskara

Acharya *sushruta* and *Vagbhatta* described 1st three days regime after birth. First day *Ananta* with *Madhu sarpi* thrice, on second and third day *Ghrita* medicated with *Lakshmana* In this ceremony, there is use of *madhu* mixed with *ghrita* or *ananta* with *madhu* and *ghrita*. Initiating early feeding with *madhu- ghrita* may help in disturbing the enterohepatic circulation which is an important cause of neonatal jaundice in exclusively mother milk fed babies. Besides interrupting enterohepatic circulation of bilirubin, *madhu-ghrita* also provides nutrients and energy which is helpful to maintain glucose level and immunity, ultimately maintaining the general condition of the body. Exclusively breast-feed babies are likely to have more bilirubin level due to inadequacy of lactation during 1st three days of life. This three to four day regime help in this condition.^[23,24,25]

Suryadarshana and Chandradarshana

According to *Kashyapa Samhita* there is indication of *Suryadarshana* (putting the baby in sunlight) and *Chandradarshana* (putting the baby in moonlight) of baby during 1st month of life. It may be a type of phototherapy for preventing the neonatal jaundice on that time. *Suryadarshana* and *Chandradarshana* to the baby during 1st month of life shows that Acharya *Kashyapa* knew well about the need of light for the newborn baby.^[26] *Stanyashodhak chikitsa* to the lactating mother *Paittik stanyadusti*, especially *durgandhit stanyadusti* is one of the important causes for neonatal jaundice so there is need to treat this via the use of *pittashamak ahar vihar* to the mother. Mother should be advised for

1. *Karkatshringi, ajshringi, triphla, rajani, vacha with sheetambu.*^[27]
2. Powder of *dhatri, trikatu* and *haritaki* with *madhu.*^[28] Paste of below mentioned medicines should be applied over the breasts kept until dry.
3. *Tejpatra, sugandhabala, raktachandana* and *ushir.*
4. *Sariva, ushir, manjishtha, sleshmataka* and *raktachandana.*

Ayurvedic Medicine for Neonatal Jaundice

In ayurvedic literature indicating principles of management, etiopathogenesis, prevention, and medications of jaundice. These measures can be applied in case of new born very carefully. Some medications which may prove beneficial in case of new born jaundice are as follows Haridradi ghrita,^[29] Munda lauh bhasma,^[30] *Kumarkalyan rasa* or *nimb patra swarasa* with honey,^[31] *Triphla*, *guduchi*, mandoor bhasma,^[32] or punarnava mandoor. Coconut oil: most important as conservative management in case of hepatitis or in obstructive jaundice,^[33] As it contains medium chain triglycerides and there is no need of bile for its absorption, giving energy and other fat-soluble nutrients to the body.

CONCLUSION

Hyperbilirubinemia is more severe in newborns. Therefore precautionary measure should be adopted by both parents, and clinicians to diagnose and treat the disease properly. Government and public health organizations should arrange seminars, workshops and trainings for mothers regarding neonatal jaundice. Ayurvedic treatment should search for new treatments and preventive measures having no side effects and capable of recovering babies more speedily. Partners should screen their ABO blood groups as well as Rh factor before marriage. Consanguineous marriages should be avoided.

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