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A CASE STUDY OF LOW-BIRTH-WEIGHT BABY (LBWB)- THROUGH AYURVEDIC APPROACH

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ABSTRACT

Babies which have their weight at the time of birth, less than 2500 g disregarding of their interval of gestation are called as Low Birth Weight Babies (LBWB) which includes preterm as well as term small-for-dates (IUGR) babies. Premature delivery and poor weight gain during intrauterine life are important causes for hospitalization. There is lots of literature which are saying about aetiologies, pathophysiology and management of LBW babies. In *Ayurveda* there are *akala prasava* babies who are described by *Acharya Harita* can be correlated with premature delivery and *garbhovyapadas* are explained in various *Ayurvedic Samhitas* can be correlated with IUGR babies. Also, in *Ayurvedic* new born care *Abhyanga* procedure is mentioned for new-born which is helpful in weight gain, reduced stress and improve physical growth of baby. The case discussed here is of 10 days old male patient brought by parents for routine new-born check-up at Balrog OPD and that baby was born with full term with normal vaginal delivery, cried instantly after birth having birth weight 2 kg. So, that patient was taken for study. *Bala taila Abhyanga* was done by mother daily in the morning before bath for 3 months and child had significant effects on milestone development and anthropometry measurements.

KEYWORDS: Low birth weight, IUGR, *Bala taila, Abhyanga*.

INTRODUCTION

A new born child whose weight less than 2500 g at birth regardless of the gestational age is called as low birth weight babies (LBWB).[1] Approximately, 6 to 8 million LBWBs are born per year, in India. LBW babies include preterm and term small-for-dates babies (intra-uterine

growth retardation). There clinical problems and prognosis are very much different from each other.

The rate of incidence of LBWBs in our country are higher with IUGR (small-for-dates) than preterm babies.[2] A neonate born before 37 and less than 42 weeks (less than 259 days) of irrespective of the birth weight.[3] Causes of preterm delivery is multifactorial and it contains a complex interlinkage between foetal, placental, uterine, and maternal constituents. Premature birth is related with medical conditions attributed by an incapability of holding the foetus by uterus, break of amniotic membrane before time, division of placenta, prematurely, multifetal gestation and undetermined impetus to productive uterine contraction before the full term.[4] Several paediatricians says if baby's weight falls below 10th percentile for the period of gestation called as small for dates baby, while others ok with the dividing line of -2SD or 3rd percentile are called as small for dates baby.[5]

IUGR is medical condition that which hampers circulation and efficiency of the placenta with nutritional value of the mother and growth and development of the foetus. IUGR is mainly divided into two heads, Symmetrical and Asymmetrical. In case of Symmetrical IUGR, all parts of baby's body are equally affected (head circumference, length and weight equivalently affected). It is quite earlier and linked with diseases that seriously hampers fetal cell number. It also affects conditions related to chromosomal, genetic, teratogenic malformation, infectious or severe maternal hypertensive causes. Asymmetric IUGR has mostly late onset and linked with defective nutrition to the mother or exacerbation of maternal vascular disease like preeclampsia, chronic hypertensive etc.[6] These children may have difficulties like severe birth asphyxia, congenital malformation, pulmonary haemorrhage, symptomatic hypoglycaemia, hypocalcemia, thermoregulatory problems, infections, poor growth potential and increased risk of HTN, DM, cardio-vascular problems in future.[7] These children may have clinical features like weight less than weight present at that gestational age, larger anterior fontanels, loss of buccal fat, shrunken appearance, umbilical cord stained with meconium, larger finger nails, loose folds of skin.

In *Ayurveda* direct reference of low-birth-weight babies is not present. Premature babies are correlated with *Akalprasuta Balaka* and IUGR is correlated with *Garbhavyapadas* like *Upavishtaka*, *Nagodara* and *Leenagarbha. Navajat balaka paricharya* chapter was explained in Ayurvedic textbooks where *Abhyanga* procedure is explained for *navajata balaka*. *Abhyanga* has a positive effect on growth and development of LBW babies including weight

gain, reduce stress behaviour, promoted neurological development and decreased rate of nosocomial infection so, decreased mortality of hospital infants.[8] *Abhyanga* should be done in *Anulomana gati* (Forward direction) to aver harm to the hair roots. It should be done in circular manner at the joint area to ease lymph drainage and venous drainage as most of the lymph nodes present in the joint spaces and collateral venous networks are also there in the joint area so circular movements assist in emptying the vessels.[9]

Acharya Charaka, Acharya Sushruta and *Acharya Vagbhata* described *abhyanga* as a part of *Dincharya* and *Rutucharya*. *Bala taila* has been mentioned in many *ayurvedic textbook* as Reproductive and Child health care formulation. It is one of the best *Kalpa* (Formulation) in *Navajata Shishu paricharya* (Newborn care).[10] Hence, Considering the *Samprapti* and *Chikitsa*, this case study was carried out.

CASE REPORT

A 10 days old male patient born with 37 week completed (Full term) normal vaginal delivery, cried instantly after birth having birth weight- 1.9 kg. Parents brought baby for normal new born check-up at Kaumarbhritya department of Mahatma Gandhi Ayurved College, Hospital & Research Centre, Salod (H) on 6/1/2021 and we have taken this child in the study because child's birth weight was 2 kg and diagnosed as LBWB.

H/O PAST ILLNESS

No H/O birth asphyxia, jaundice, seizures, sepsis

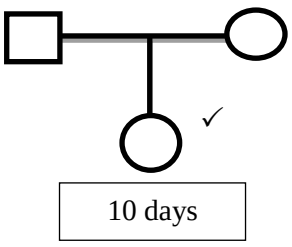
H/O Ca and Vit.D_3 supplementation taken

FAMILY HISTORY

No H/o consanguinity

Maternal- not specific

Paternal- not specific



BIRTH HISTORY

1. Antenatal-

-Inj T.T. 0.5 ml 2 doses IM received

-Iron and folic acid tablets received

-No H/O Oligohydromnios/ Polyhydromnios/ PTH/HTN

-USG- 3 done (normal reports)

2. Perinatal

-Full-term (37 weeks) normal vaginal delivery, cried immediately after birth, birth wt-2 kg.

3. Postnatal

-No H/o NICU admission.

-No H/o birth asphyxia, seizure and neonatal jaundice.

ANTHROPOMETRY

Length- 47cm

Weight- 1.9 kg

HC- 32cm

CC- 29 cm

MAC- 8.4cm

IMMUNIZATION

OPV, Hep-B and BCG given at birth

GENERAL EXAMINATION

P- 130/min

BP- 60/40 mmHg

RR- 40/min

T- 98^{o}F

Pallor- No

AF- Open

Icterus- No

SYSTEMIC EXAMINATION

RS- AE=BE, clear

CVS- S_1, S_2- normal, No murmur

CNS- Conscious

P/A- Soft, No abdominal distension

ASSESSMENT CRITERIA

A. Subjective criteria

1. No. of hospital visits required

Grade 3 - hospital admission required

Grade 2- hospital visits required

Grade 1- minor complaint but not required hospital visit

Grade 0- healthy baby

2. Achievement of developmental milestones as per age

Grade 3- Very poor

Grade 2- Poor

Grade 1- Good

Grade 0- Excellent

B) Objective Criteria

1. Weight
2. Length
3. Head Circumference
4. Chest Circumference
5. Mid Arm Circumference

TREATMENT

25 ml *Bala taila* for *abhyanga* before bath and before breast feeding daily in the morning 10 min for consecutive 3 month was done.

OBSERVATION AND RESULT

Sr. No.	Assessment criteria	BT	1st	2nd	AT
1	No. of hospital visits required	2	2	1	0
2	Achievement of developmental milestones as per age	2	1	1	0
3	Length	47.2 cm	50 cm	53.3 cm	57 cm
4	Weight	1.9 kg	2.6 kg	3.8 kg	4.6 kg
5	Head Circumference	32 cm	33.8 cm	35.9 cm	38 cm
6	Chest Circumference	29.1 cm	30.9 cm	33 cm	35 cm
7	Mid Arm Circumference	8.4 cm	8.7 cm	9.1 cm	9.7cm

Abhyanga was done by mother to the child (patient) for 3 months and child was examined on 30th, 60th and 90th day. During this period patients didn't develop any other complaints. No any allergy or rash to *Bala taila*.

DISCUSSION

Low birth weight condition is most challengeable in new-born. Low birth weight affects growth and development of child and due to this increased risk of malnutrition, recurrent infection and neurodevelopment problems. These children may cause burden to the family. An *Ayurvedic* conservative treatment is beneficial for IUGR due to placental insufficiency and due to lack of maternal nutritional. Education to the mother about their child massage is more effective as it creates an emotional bond between mother and their child. The best time for mother to collect all information about infants' massage is between the third trimester of pregnancy to one month after delivery.[11]

In *Ayurveda,* there is a new born care (*Navajata Balaka Paricharya*) which includes *Snana, Abhyanga, Dhoopana* etc. Out of these, *Abhyanga Upakrama* is more important. "*Abhyangam acharyetanityam*" is called do abhyanga on daily routine basis.[12] Application of *Taila* (oil) to the skin by massaging in specific manner is known as *Abhyanga*. It suppresses *Vataprakopa,* reduces stress and improves sleep. Acharya Sushruta explained the route of absorption for abhyanga, Lepa, Parisheka, *Avagaha* in *Sushruta Sharirshtana*. He said that in the body four *Tiryakgata Dhamanis* present which again and again divide into multiple form and become innumerable so that *Dhamanis* form network into the body. There are terminal openings attached to the *Romkoopa* (hair follicles) and through that *Dhamanis* transfer *Sweda* and nutrition to the body. As like *Sweda, abhyanga* herbal oil Veerya also travels through whole body and reaches to all *Dhatus* and tissue of the body. *Acharya Kashyapa* says *Abhyanga* is *Nidrakar, Shramahara* and *Balyavardhanm*. Abhyanga also creates many positive results like increased weight gain, promotes attentiveness, raised vagal activity, immune response activation and lower down the cortisol level.[13]

Application of *Bala taila* increases strength, color, memory, capacity to handle stress and good for digestion. *Bala taila* contain *Jivaneeya gana, Manjishta, Ela, Chandan, Jatamansi, Punarnava* etc as important ingredients. Which have *Balya, Brihaniya, Pushtikar* and *Vatahara* properties. Due to *Snigdha guna* of *Bala taila* baby's skin become moist and unctuous and *guru guna* give *Brihan* to the body.[14] *Bala taila* has *Brihaniya, Vatahara,* and Rasayana and *Balya* properties and due to these properties *Bala taila abhyanga* has shown positive effect on growth and development of child.

CONCLUSION

Conclusion was drawn on the basis of above results and discussion as follows:

This study proves that child abhyanga with Bala taila is an effective way to improve child health, child's developmental milestone and anthropometry. Mothers and children emotional bonding are also very effective in child's development which was created by abhyanga.

Abhyanga is a traditional procedure and is usually used in various families as tradition. It is a safe procedure and has no harmful effect. *Abhyanga* oil *Veerya* goes into *Tiryakagata Dhamanis* and with the help of these *Dhamanis* it spreads into all seven Dhatus and all over skin where it improves qualities of Dhatu and nourishes the body.

As compared to term babies' preterm baby's growth and development occurs slowly but with the help of *bala taila abhyanga* we can manage growth and development of IUGR babies as like term babies.

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