EXTREMELY LOW BIRTH WEIGHT BABIES

(A report of two cases)

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Introduction

Extremely low birth weight babies (ELBW) have a birth weight less than 1000 g. They comprise a unique subclass of the population of low birth weight babies with weight < 2500 g [1]. Problems of prematurity are related to difficulty in extrauterine adaptation due to immaturity of organ systems. The survival even in developed countries with sophisticated neonatal intensive care units is 68% when birth weight is <699g [2]. Managing ELBW babies in our setup can be a challenging and rewarding experience. Two cases of ELBW babies managed at a zonal service hospital are reported. The level I NICU had no ventilatory and monitoring facilities.

Case 1

Female baby born at 24 weeks gestation to 27 yr old primi with primary infertility was transferred to our hospital. The weight was 600 gms. Anthropometric data given in Table 1. The cardiorespiratory status was satisfactory. Baby was nursed in the incubator with head elevated and O₂ inhalation started via a hood when mild tachypnoea and grunt was noted. Fluid requirement was met by 5% glucose via an umbilical catheter and gradually replaced by 10% to prevent hyperglycemia. Inj Deriphyllin 3mg stat was followed by 2mg 6hrly I/V following the first apnoeic spell. Inj Calcium gluconate 1 ml given as slow I/V bolus every 6 hrs. After the first 72 H both these drugs were given orally. Deriphyllin was continued till after the baby was free from apnoeic spells for 1 week. Calcium was continued orally as a syrup till baby was discharged. Inj Vit K 0.5 mg was given IM. Electrolytes were added to the I/V fluids on Day 2. By Day 3 enteral feeding was initiated as 1 ml expressed breast milk via a nasogastric tube. This was increased by 1ml at every third feed and by Day 5 baby was on total enteral feeds and nursed in prone position (Fig 1). Feeds had to be given over 15-20 min to prevent apnoeic spells. Prophylactic phototherapy was started on Day 3 and continued for next 4 days. Vit E 25IU/day added on Day 7 as contents of Evion capsule diluted in coconut oil. Minimal handling was ensured. Apnoeic spells were managed with stimulation of the baby. If by 15 sec no recovery seen, IPPR given by Ambu bag to maintain HR>100. Nursing Officers, or the mother did the monitoring. The mother was encouraged to touch the baby and massage her. She also suckled other babies in the NICU to help maintain good lactation. Strict asepsis ensured no requirement of antibiotics during entire hospital stay of 3 months except for Inj Ampicillin for the first 5

days after transfer in. Blood transfusion was given as 15 ml whole blood on Day 28 when Hb was 7.5 gm% and baby developed severe apnoeic spells requiring IPPR. Septic screen carried out was normal. Baby was transferred to the radiant warmer on Day 50 (WT 1.2) kg and breast feeding was encouraged complemented by EBM given as spoon feeds with multivitamins, calcium, iron and coconut oil added to provide daily requirements. Baby was roomed in with the mother on Day 80 Wt 1.8 kg and subsequently sent home at gestational age of 37 weeks.

TABLE 1

Anthropometric data

Anthropometry	Case 1	Case 2
At birth		
Weight	600 g	650 g
OFC*	20 cm	24 cm
Length	30 cm	32 cm
At one week		
Weight	545 g	600 g
At discharge		
Weight	2000 g	1900 g
OFC	32 cm	32 cm
Length	42 cm	43 cm

*Occipito-frontal circumference

Case 2

Female baby was born to a 27 y G3POA2 mother at 26 weeks

Fig. 1 : Case 1 on day 4 of life

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TABLE 2
Problems encountered during management

Problems	Case 1	Case 2
Respiratory		
Asphyxia	Nil	Nil
RDS	Mild	Mild
Apnoeic spells	+++	++
Feeding		
Inability to suck	+	+
Aspiration	-	+
NEC	-	-
CNS		
Seizures	-	+
Others		
Jaundice	-	-
Sepsis	-	-
Anaemia*	+	+

RDS - Respiratory distress syndrome; NEC - necrotising enterocolitis

*Blood transfusion given

gestation who was admitted to the hospital the previous day as a case of threatened abortion. Birth weight was 650g (Table-1). There was no asphyxia. Baby was managed on the same lines as case 1 for the first few days. Baby had an episode of aspiration after a feed on Day 25 followed by a cardiac arrest, but was resuscitated and managed with suction, oxygen and antibiotics. A blood transfusion was given on Day-30 for anaemia. On Day 40 subtle seizures were noted in the form of apnoea with staring and tonic limb posturing, requiring both dilantin and luminal for control. Thereafter baby had uneventful progress similar to Case 1. She is today a 4 yrs old child attending nursery school. (Fig 2).

Problems noted in the two cases are tabulated in Table 2.

Discussion

Traditionally 28 wks gestation is considered as the period of viability for developing countries and not much is written in Indian literature on ELBW babies. It is felt that ELBW babies require aggressive management which can be uneconomical in a level II nursery [3] however we have had a good experience in our setup. RDS is not so common in India affecting only 10-15% of preterm babies [4] which could be the reason our babies did well with oxygen inhalation via a hood for mild RDS. Incidence of apnea is 78% in infants at 26-27 weeks [5]. Both babies had severe apnoeic spells, which partially responded to Deriphyllin and required constant monitoring to prevent bradycardia. Apnoea was precipitated by feeding, which is known [6]. 83% incidents of hypoxaemia, 93% of bradycardia and 38% apnoea occur during or immediately after routine handling of preterms [7]. We ensured minimal handling. Cautious commencement of enteral feeds coupled with use of only breast milk may have protected our babies from developing necrotising enterocolitis [8]. Case 2 developed neonatal seizures manifesting as late onset apnoea with tonic

Fig. 2 : Case 2, now 4 years old. Mild squint present

posturing of limbs and responded well to AEDs. Neonatal seizures occur in 22.7% of infants with a gestational age of 31 weeks or less but 50% of them have a normal outcome [9]. Our case did not require AED beyond 3 months. Both our cases were small for gestational age. Babies who are both preterm and SGA have a better outcome than weight matched preemies [10].

In conclusion high technology has its place but machine cannot replace man, the best monitors are dedicated nurses, mothers and doctors [11].

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