ASSESSMENT OF NUTRITION IN PREMATURE AND LOW-BIRTH WEIGHT BABIES

Essay

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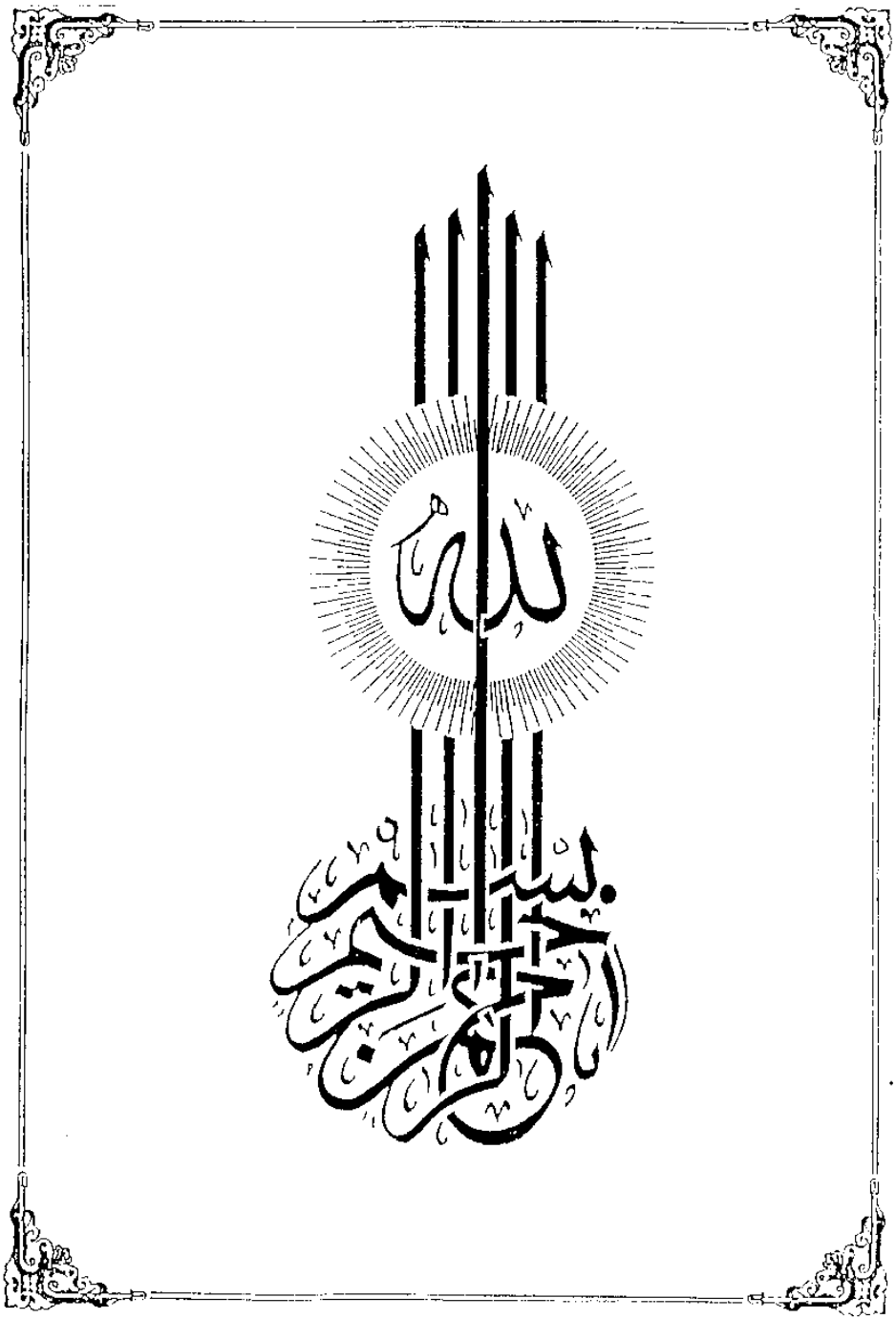
DEDICATED TO

MY FATHER

&

MY MOTHER

TO WHOM I AM MUCH INDEBTED



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Hany R. Atallah

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LIST OF ABBREVIATIONS

LBW: Low-birth-weight.

LFD: Light-for-date.

VLBW: Very low-birth-weight.

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Nutritional requirements have major importance in management of premature and low birth weight babies. Feeding problems constitute one of the major difficulties for both group infants. It determines the ultimate outcome of the over-increasing number of surviving babies. Early adequate nutritional management is essential to ensure adequate growth and even ultimate survival.

These infants have major difficulties in ensuring adequate energy intake because of nutrient malabsorption in addition to particular deficiencies such as calcium, phosphate, sodium, vitamin E and folate deficiencies.

Nutritional management can be accomplished by enteral means, parenteral means or a combination of both. The appropriate approach must be chosen for each baby according to his birth weight, gestational age and clinical state.

The Aim of This Study is:

1. To review the various feeding difficulties in both groups.
2. To demonstrate their nutritional requirements.
3. To describe how to fulfill their needs either by enteral, parenteral or both means.

THE PREMATURE AND LOW BIRTH WEIGHT INFANTS

THE PREMATURE AND LOW-BIRTH WEIGHT BABIES

Definition:

The World Health Organization originally defined the term "Premature baby" in 1950s as any newborn infant with a birth weight of 2500 gm (5 1/2 lb) or less (WHO, 1950). This definition has led to confusion between babies of short gestation and those who are just small. The previous definition is no longer accepted, as many babies weigh less than 2500 gm at birth are born at term. Others, though born before term, are smaller than the average for the duration of gestation.

The "Second European Congress of Perinatal Medicine" in 1970s decided that the term "Premature or Pre-term" should be reserved for live born infants delivered before 37 weeks of gestation calculated from the first day of the last menstrual period. Infants who weigh 2500 gm or less at birth should be defined as "Low-birth weight" (LBW). LBW infants are now divided into two groups: preterm infants and term infants who are Light - for-dates "LFD" (Crosse, 1975) and (Behrman and Kliegman, 1983).

Vulliamy (1972) pointed that many pre-term infants are also small out of proportion to their gestational age. To clarify the situation, it was essential to record and to take into consideration both the birth weight and the gestational age. Different standards of normal weight for gestational age were proposed. Hutchison and Cockburn (1986) accepted an infant as LFD if his birth weight falls below the 10th percentile for his gestational age. Others have defined a growth-retarted infants as one whose birth weight is 2 standard deviations or more below the mean for duration of gestation (Grunewald, 1964).

LFD babies are the result of intra-uterine growth retardation. They may be delivered before, at or after term. If growth retardation occurs in an infant born before 37 weeks gestation, the infant will have the handicaps of a preterm baby as well as those of a growth retarted baby (Crosse, 1975). LFD babies are not a homogenous group. It is useful to divide them into two main groups according to the cause of growth retar-dation:

1. **Malnourished group (Dysmature babies):**

This includes the majority of LFD babies. They

undergo nutritional inadequacy late in pregnancy. If the malnutrition lasted a period of weeks, the length of the infant corresponds to the weight. If it lasted only for days, the body length is more in proportion to the gestational age than the body weight because malnutrition has a more immediate effect on weight increase than on linear growth (Crosse, 1975).

2. **Hypoplastic group:**

This smaller group has never grown normally during pregnancy. They are generally small in length but of appropriate weight for that length. It includes genetically small infants, but otherwise normal infants. This group also includes abnormal infants due to chromosomal abnormality, intrauterine infection and congenital malformation. In these hypoplastic infants there is marked reduction in the weight of all organs and have higher mortality rate (Crosse, 1975) and (Keay and Morgan, 1982).

The term "very low birth weight" (VLBW) infants refers to those born weighing less than 1500 gm. They have a higher incidence of rehospitalization during the first year of life and should have a special care (Behrman and Kliegman, 1983).