

Babylon University – College Of Medicine
Department of Community Medicine

*Lectures in Community Medicine
For 4th Stage Students
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Lecture 16

Low Birth Weight and Prematurity

Normal birth weights for infants in both sex average between 3.3 and 3.5 Kg. In developing countries corresponding birth weights are reported as being slightly around (3.2- 3.3 Kg) .

Even the mother is in good health body weight is related to some extent to the height of the mothers, a taller mother usually delivers a longer infant.

Low birth weight:

A live born baby less than 2500 grams or height less than 47 cm.

Premature infant (preterm infant):

An infant born before 37 completed weeks of gestation calculated from the first day of the last menstrual period.

It is estimated that 20 millions Low Birth Weight (LBW) are born annually, 95% of all these takes place in developing countries in which they have low facilities to deal with such a problem. 2/3 of all neonatal mortalities occur among those LBW and preterm infants they die from infections, intracranial hemorrhage or acute respiratory distress syndrome and in some deaths no specific cause of death have been identified.

Etiology of LBW and Prematurity:

The same factors in most instances will cause intrauterine growth retardation:

- 1- Complications during pregnancy such as hypertension with proteinuria, Diabetes mellitus causes respiratory distress and metabolic problems and involvement of placental blood vessels which leads to small baby otherwise DM will lead to large for date baby.

Heart diseases which to early induction of labour:

- Anemia
 - Infections (viral , bacterial , parasitic)
 - Cervical incompetence
 - Tumors
 - Polyhydramnious
 - Premature rupture of membrane
 - Ante partum hemorrhage
 - Maternal surgery e.g. appendicitis.
 - Trauma
 - Iatrogenic (miscalculation of gestational age)
- 2- Multiple pregnancies
 - 3- Congenital malformation
 - 4- Sex of the infant: LBW higher in females while preterm is higher in males.
 - 5- Biological factors such as (maternal age, maternal height, maternal weight, short spacing, drugs, alcohol, poor antenatal care, previous LBW or preterm delivery, psychological stress, genetic factors: ethnic or familial) .
 - 6- Socioeconomic factors: (family income, social status, educational level)
 - 7- tobacco smoking
 - 8- Unknown causes.

Still birth rate

Death of the fetus weighing less than 1000 grams.

This equivalent to 20 weeks of gestation or more occurring in one year in every 1000 total births (live births plus still birth).

It is frequent occurrence in the developing countries.

Prevention of still birth includes the detection and treatment of the following:

- 1- Infections during the course of pregnancy.
- 2- Hypertension and toxemia
- 3- Rh incompatibility
- 4- Diabetes
- 5- Premature rupture of membrane
- 6- Some causes are difficult to eliminate such as multiple pregnancies, fetal malformations and placental abnormalities.

Perinatal mortality rate: includes both fetal death and early neonatal death.

Causes:

A. Antenatal causes:

1. Maternal diseases such as diabetes, hypertension, anemia, tuberculosis, etc.
- 2- Toxemia of pregnancy
- 3- Antepartum hemorrhage
- 4- Malnutrition
- 5- Congenital defects
- 6- Advance maternal age

B- Intra natal causes:

- 1- Birth injury
- 2- Asphyxia
- 3- Prolonged labour
- 4- Obstetric complications

C- Post natal causes:

- 1- Prematurity
- 2- Respiratory distress syndrome
- 3- Respiratory and elementary infection
- 4- Congenital anomalies

D-.Unknown causes

Infant mortality rate:

This rate is accepted as one of the most useful single measure of the health status of the community.

It may be very high in communities where health and social services are poorly developed.

Experience has shown that it can respond dramatically to relatively simple measures, thus with the establishment of MCH services

The IMR may fall from being very high (200-300/1000 live births) to a moderate level (50-100/1000 live births).

In most advanced nations the rate is low (below 20/1000 live births), even in these advancing nations IMR shows striking differences in the different socioeconomic groups.

Causes of IM:

Neonatal mortality (0-4 weeks):

- 1- LBW
- 2- Birth injuries and difficult labour
- 3- Congenital anomalies
- 4- Hemolytic diseases of newborn.
- 5- Conditions of placenta and cord.
- 6- Diarrheol diseases, ARI and tetanus.

Post neonatal mortality (1-12 months):

- 1- Diarrhea diseases
- 2- ARI
- 3- Other communicable diseases
- 4- Malnutrition
- 5- Congenital anomalies
- 6- Accidents

Prevention and control of IM:

- 1- Proper antenatal care
- 2- Deliveries by trained birth attendants
- 3- care of newborn
- 4- Initiate early breast feeding
- 5- Immunization
- 6- Oral re-hydration therapy
- 7-ARI control
- 8- Early detection and correction of malnutrition
- 9- Prophylaxis against vitamin A deficiency
- 10- Family planning
- 11- Early detection and treatment of diseases
- 12- Improving environmental sanitation and standard of living
- 13- Health education
- 14- Socioeconomic development
- 15- Improving family literacy

1-4 year mortality rate:

Also termed as child death rate, this is the number of deaths in children aged 1-4 years per 1000children in the same age group.

Period of highest risk of mortality in1-4 year age group is the second year.

Causes:

Accidents, congenital anemia, malignant neoplasm, ARI.

Leading causes in Iraq: acute diarrhoeal diseases, ARI, malnutrition, accidents, injuries.

The important steps in prevention of 1-4 years mortality are:

- 1- Growth monitoring
- 2- Oral rehydration therapy
- 3- Nutritional supplementations
- 4- Immunization
- 5- ARI control
- 6- Breast feeding and early weaning
- 7- Health education of mothers

Under five mortality rate:

Defined as

No. of deaths in children less than five years of age in a given year

$$\times 1000 \frac{\text{No. of live births in the same year}}{\text{No. of live births in the same year}}$$

Under fives mortality rate varies from 6 per 1000 live births in the developed countries to 89/1000 live births in the least developed countries. Countries with low IMR experiences low under-five mortality too.

The STRATEGIC PREVENTIVE MEASURES FOR UNDER FIVES MORTALITY ADOPTED BY UNICEF AND WHO IS ABBREVAITED AS **GOBIFFF** (Growth monitoring, oral rehydration therapy, breast feeding, immunization, female literacy, food supplementations and family planning)