Current topic

Commentary on current World Health Organisation definitions used in perinatal statistics

There is an urgent need for those collecting and disseminating perinatal statistics, whether at national, regional, district, or local hospital level to adhere to standard definitions. It is strongly recommended that current World Health Organisation (WHO) definitions are used in the collection of statistical data. Listed below are the relevant definitions together with short commentaries where this is felt appropriate.

It is appreciated that gestational age often cannot be determined by reference to the last menstrual period. Nonetheless, whichever method of gestational age assessment is used the definitions of various gestational age categories are still appropriate. The definitions also highlight the need for all live births and fetal deaths to be accurately weighed as soon as possible after birth. Indeed, the accurate weighing of babies at birth is a necessary part of good clinical practice.

Finally, it must be stressed that adherence to the WHO definitions are for statistical purposes only and that the existing definitions governing, for example, legal requirements to register stillbirths remain unchanged.

Definitions and recommendations

Live birth. 'Live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached; each product of such a birth is considered live born.'

Fetal death. 'Fetal death is death prior to the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy; the death is indicated by the fact that after such separation the fetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles.'

Birthweight. 'The first weight of the fetus or newborn obtained after birth. This weight should be measured preferably within the first hour of life before significant postnatal weight loss has occurred.'

Comment

Ideally the naked baby, alive or dead, should be weighed to the nearest gram, preferably on an electronic weighing balance. Suitable weighing machines should be stationed in delivery units close to resuscitation trolleys so that even ill babies can be rapidly weighed at a convenient time before they are attached to apparatus that may not be relinquished for days or weeks. The initial record of weight must be the one that is recorded on all birthweight documentation, ie hospital birth book, special care baby unit (SCBU) notes, maternity ward notes, discharge letters, etc. It is essential to ensure that several different measurements of 'birthweight' made on the delivery unit, SCBU etc are not simultaneously used.

Low birthweight. 'Less than 2500 g (up to, and including, 2499 g).'

Gestational age. 'The duration of gestation is measured from the first day of the last normal menstrual period. Gestational age is expressed in completed days or completed weeks (eg events occurring 280 to 286 days after the onset of the last normal menstrual period are considered to have occurred at 40 weeks of gestation). Measurements of fetal growth, as they represent continuous variables, are expressed in relation to a specific week of gestational age (eg the mean birthweight for 40 weeks is that obtained at 280–286 days of gestation on a weight-for-gestational age curve).'

Comment

However gestational age is measured, a completed week is 7 days. Thus a pregnancy at 40 weeks (280 days) on 26 July is only 39 weeks (279 days) on 25th July; and not 41 weeks (287 days) until 2nd August.

Pre-term. 'Less than 37 completed weeks.'

Comment

A birth is pre-term if it occurs up to and including the 258th day of gestation. A new day commences at midnight. Thus a pregnancy at 37 weeks (259 days) on 4th July is classified as pre-term if the baby is born on 3rd July at 11.59 pm (23.59 hours).

Term. 'From 37 to less than 42 completed weeks.'

Comment

259 days up to and including 293 days.

Post-term. 'Forty-two completed weeks or more.'

Comment

294 completed days or more.

Perinatal mortality statistics. 'It is recommended that national perinatal statistics should include all fetuses and infants delivered weighing at least 500 g or, when birthweight is unavailable the corresponding gestational age (22 weeks) or body length (25 cm crown-heel), whether alive or dead. It is recognised that legal requirements in many countries may set different criteria for registration purposes, but it is hoped that countries will arrange the registration or reporting procedures in such a way that the events required for inclusion in the statistics can be identified easily. It is further recommended that less mature fetuses and infants should be excluded from perinatal statistics unless there are legal or other valid reasons to the contrary.'

Comment

In Britain, the 'fetal death' component of perinatal mortality includes only those fetuses who have completed 28 weeks (196 days) in the womb. This is convenient only because it corresponds with the legal requirement to register stillbirths who have, by definition, completed 28 weeks (196 days) in the womb. Thus, a fetus that is 28 weeks (196 days) on 1st May is not classified as stillborn if born dead on 30th April at 11.59 pm (23.59 hours) but is classified as an abortion. However, this restrictive interpretation of perinatal mortality is unsatisfactory for many reasons, not the least being the illogicality of including within the liveborn component of perinatal mortality *all* babies regardless of their gestational age.

Thus there is much sense in defining perinatal mortality as 'fetal deaths weighing 500 g or more *PLUS* deaths occurring less than 7 completed days after birth (ie 6 d 23 h 59 m or less) in babies weighing 500 g or more'. The inclusion of extremely low birthweight babies within the definition of perinatal mortality underlines the need for all fetal

deaths and live births to be accurately weighed. In this way perinatal mortality can be analysed within specific birthweight groups (see below) and when comparing perinatal mortality rate allowances can be made for differences in birthweight distributions between populations.

Statistical tables. 'The degree of detail in cross-classification by cause, sex, age, and area of territory will depend partly on the purpose and range of the statistics and partly on the practical limits as regards the size of particular tables. The following patterns, designed to promote international comparability, consist of standard ways of expressing various characteristics. Where a different classification is used (eg in age-grouping) in published tables, it should be so arranged as to be reducible to one of the recommended groupings.'

(a) Age classification for special statistics of infant mortality

(i) Under 24 hours, 1–6 days, 7–27 days, 28 days up to but not including 3 months, 3–5 months, 6 months but under 1 year.

(ii) Under 7 days, 7–27 days, 28 days but under 1 year.

Comment

Early neonatal death (included in perinatal mortality): death less than 7 completed days from birth (ie up to and including 6 d 23 h 59 m).

Late neonatal death (not included in perinatal mortality): death from 7 completed days to less than 28 days from birth (ie up to and including 27 d 23 h 59 m).

Post neonatal death: death from 28 completed days to less than 1 year from birth (ie up to and including 364 days).

Early neonatal death may be further subdivided as shown below:—

(iii) Under 1 hour, 1–23 hours, 24–167 hours.

(b) Birthweight classification for perinatal mortality statistics

By weight intervals of 500 g ie 500–999 g, 1000–1499 g, 1500–1999 g etc.

(c) Gestational age classification for perinatal mortality statistics

Under 28 weeks (under 196 days), 28–31 weeks (196–223 days), 32–36 weeks (224–258 days), 37–41 weeks (259–293 days), 42 weeks and over (294 days and over).

Comment

The influence of birthweight and gestational age on mortality is particularly marked in very low birthweight babies. Therefore data should be collected in a way that allows birthweight groupings to be expressed also by intervals of 250 g (ie 500–749 g,

750–999 g, 1000–1249 g etc) and by ungrouped gestational ages.

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