FETO-INFANTILE MORTALITY

Causes, Evolution and Means of Combatting*

Marcel Lelong, M. D. and François Alison M. D.*****

The term feto-infantile mortality comprises:

1. Still births or late fetal deaths. Babies born dead after a gestation period of at least 26 weeks.

2. Infant mortality as such. Babies born alive who die within their first year. Infant mortality can in turn be subdivided according to age at the time of death as follows:

a. Neonatal mortality (death before the 28th day).

b. Post-neonatal mortality (death between 28 and 365 days).

Causes

The numerous causes of feto-infantile mortality may be classified, according to the period in which they supervene, as prenatal, parturient, and postnatal.

1. Prenatal.

Prenatal causes of mortality relate to a series of factors. Some are of a genetic nature, the source of congenital malformations. Here it is necessary to distinguish between hereditary anomalies and acquired genetic modifications, for example those acquired following exposure to ionizing radiations. Other causes of death are defects from which the embryo, fetus or attendant organs (particularly the placenta) may suffer following a maternal illness. The term 'maternal illness' must be understood in its largest sense. It includes naturally the infections of the pregnant woman, the viruses, microbial attacks, or parasites (such as malaria or toxoplasmosis) whether latent or active. It can also include the state of malnutrition, various forms of intoxication, traumas, or even overexertion by the expectant mother. And, finally, it can include the important anomalies of gestation such as eclamptic toxemia and hormonal disturbances.

* Paper presented at the Second Middle Eastern-Mediterranean Pediatric Congress, Ankara, 1961.

** Professor, Clinique de Puériculture, Hôpital St. Vincent de Paul, Paris XIV, France.

*** Medecin des Hôpitaux de Paris, 116 Rue de Courcelles, Paris XVII, France.

Among prenatal causes one must also include the anomalies of the ovum such as twinning, placenta previa, and essential hydramnios.

Many of these causes of prenatal mortality achieve their effect through the launching of premature labor. But though "prematurity" is a useful term, it covers cases which are scarcely homogeneous and in nearly half of which the etiology is unknown.

2. Parturient.

Anomalies of labor are important causes of both stillbirths and infant mortality. One distinguishes schematically between:

a. mechanical dystocia due to an abnormal presentation or to deformity of the pelvis or soft parts, and

b. dynamic dystocia due to functional disturbances of the uterine contractions (which may be hypotonic, hypertonic or both alternately); sometimes related to eclamptic toxemia.

These anomalies of labor can be alleviated by correct obstetrical technique. On the other hand they may be aggravated by untimely or awkward intervention or by the needless administration of analgesics or oxycytocics. In some cases, misused medicines have even created serious anomalies of uterine contractions with fetal anoxia.

3. Postnatal.

These causes of mortality are chiefly represented by infections acquired by the newborn or young baby. They differ widely and may include umbilical tetanus, viruses, septicemia, enteritis with acute dehydration, and pleuropulmonary staphylococcia.

Errors of nutrition such as premature weaning and inadequate artificial feeding play a role of greater or less importance according to the region and the period. In general, these are factors predisposing to severe infectious attacks rather than direct causes of mortality. It is the same for environmental factors such as cold, heat and wind. These may themselves be the direct cause of death (e. g. heat stroke) but more usually weaken the infant rendering him liable to infection.

Other causes of postnatal death are intestinal invagination, strangulated hernia and, above all, accidents such as suffocation, burns and falls.

4. Combinations.

The frequent combination of two or more of these causes of death must be stressed. Aside from the already mentioned association of gravidic toxemia with functional dystocia, and poor nutrition with infections, there is the association of infection with prematurity. One

must underline the extreme danger of any postnatal pathogenic factor whatsoever affecting the premature infant.

5. Social Factors.

The causes already listed are those directly responsible for infant deaths. They are the immediate causes. But some of these causes are dependent on social factors which provoke or aggravate the condition directly responsible for death. One understands the importance from this point of view of indigence, ignorance, negligence or lack of training in the expectant mother, or her entourage. Whenever possible a balance sheet should be drawn up to establish the relative importance of these various social factors in any given infant death in order to establish a program to combat them.

Evolution

The study of the history of feto-infantile mortality in countries where the rate has become very low reveals one important fact: the rate was reduced mainly among infants over one month old. The mortality rate among newborns and especially the stillbirth rate diminishes much more slowly (fig. 1).

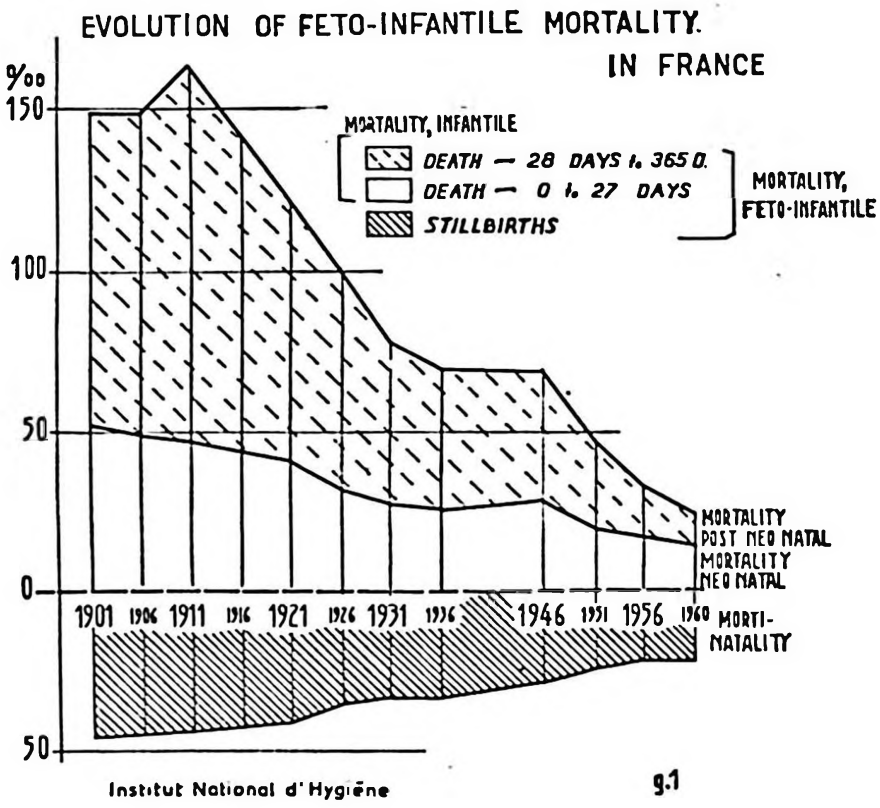

Figure 1.

When feto-infantile mortality is high, it is the mortality of infants over one month and less than one year old, (post-neonatal mortality)

which constitutes the most important part of this mortality. When feto-infantile mortality is low, this post-neonatal mortality rate represents only one quarter or one fifth of the whole. The remainder being natimortality and death during the first few weeks after birth (fig. 2).

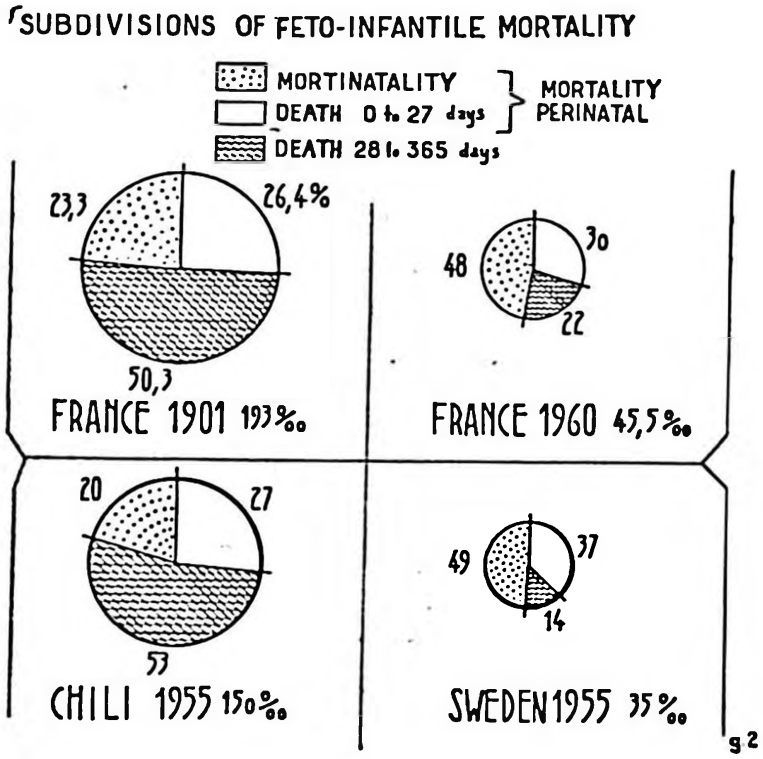

Figure 2.

Thus we may say that the postnatal causes of death are those which are easiest to combat. These causes of death must be attacked most vigorously in areas where feto-infantile mortality is high. The struggle against prenatal causes is more difficult. These cases present a firm resistance, even in the most favored countries, such as Sweden. This lack of success can be explained in part by our ignorance of certain types of gravidic anomalies and in part by our lack of knowledge of the etiology of premature births. The definitely obstetrical causes occupy a middle ground: they are more difficult to combat than the postnatal infections but less difficult, usually, than many of the prenatal causes.

Means of Combatting Feto-infantile Mortality

The struggle against feto-infantile mortality necessitates complex but coordinated measures. We can only give a rough outline of them in this limited space.

Of first importance is the providing of the best possible medical and obstetrical organization, not only for the treatment of obvious

ills and anomalies but also for the prevention of irregularities and the discovery of possible incipient anomalies.

Prevention of future difficulties can only be realized by systematic, periodic examinations of the pregnant woman, the newborn babe and the nursing child. Let us point out in this connection the importance of an effective coordination between those doing the prenatal examinations and those responsible for the ultimate accouchement.

Sanitation in the home must be taught to and vigorously demanded of all mothers and children, not merely those who appear for consultations. This program presupposes a large number of visiting nurses or mobile child health units.

Even though the final goal is a general widespread knowledge of good hygiene, one is almost always obliged to limit efforts either to areas where infant mortality is very high or to certain categories which are particularly vulnerable. This vulnerability may be of social origin (miserable surroundings, children separated from their families) or it may be related to pathologic circumstances (women who have already had dystocic accidents). This training in hygiene is of utmost importance whether given to the population as a whole, to specialists, or even in certain cases to individuals (through systematic examination or home visits).

These various measures can only be fully effective if the standard of living is reasonably high and if adequate nutrition is assured to the population. However, it is possible to a certain extent to provide special facilities for expectant mothers with regard to their employment and their nourishment. One can also accord priority to young children for certain foods and therapeutic items. These measures are of course only palliatives not remedies.

Summary

The struggle against feto-infantile mortality is difficult. There are regions in which almost nothing has been done. In other areas special problems must be resolved. Even in countries with high standards of sanitation one comes up against a residue which is almost irreducible, represented particularly by the prenatal anomalies.

In all cases a study of the broad picture of feto-infantile mortality; of the respective importance of each of its constituents; and an investigation of the predominant social factors will prove of great interest, for such studies permit us better to orient our efforts in a domain where important successes can be obtained.

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