EVALUATION OF THE PERINATAL MORTALITY IN AIN SHAMS UNIVERSITY HOSPITAL

THESIS

Submitted in Partial
Fulfilment of Master
Degree in Obstetrics
and Gynaecology

BY

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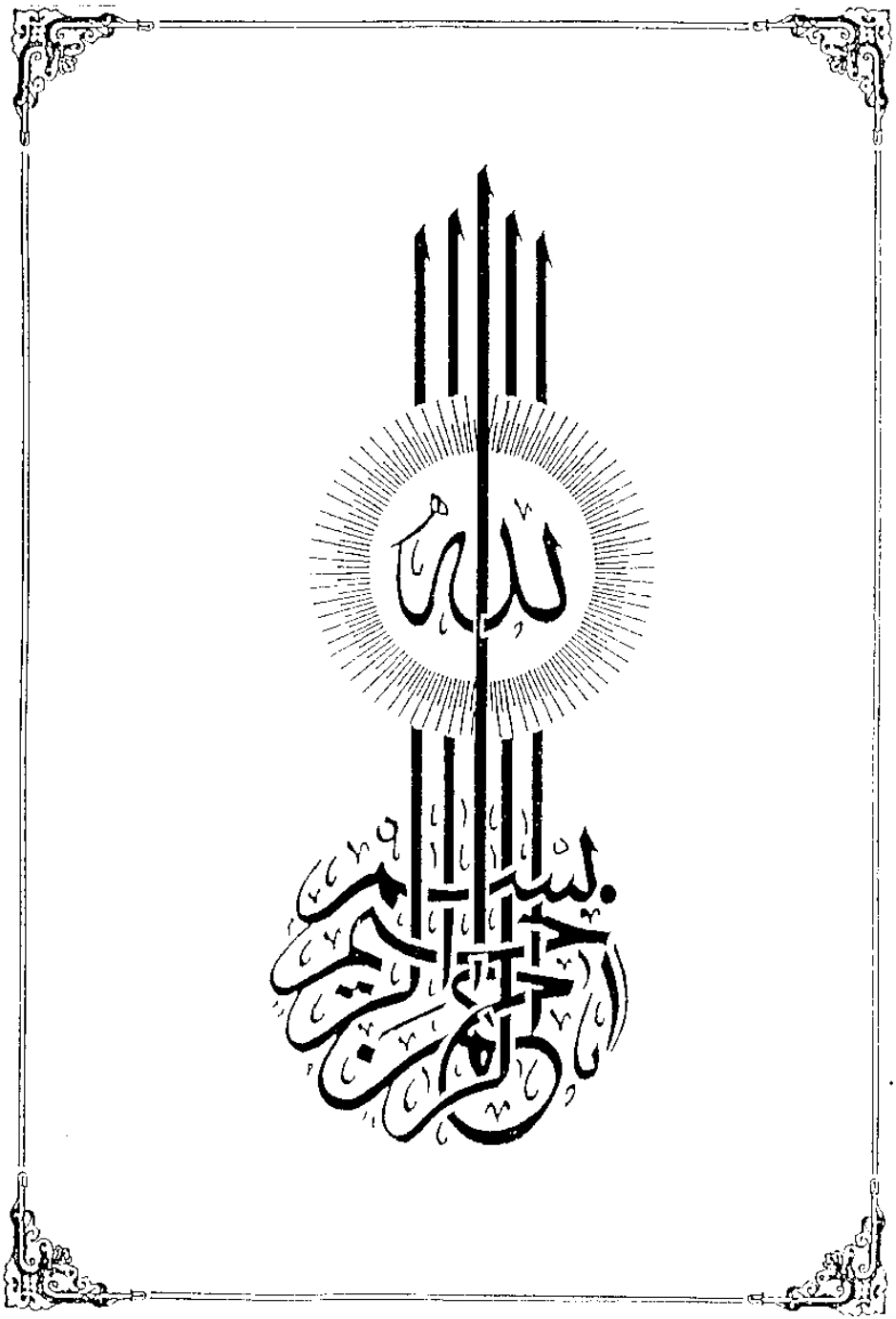
1980

ACKNOWLEDGEMENT

I would like to take this apportunity to express my profound gratitude and sincere appreciation to Prof. Dr. Sayed El Mahgoub and to Ass. Prof. Dr. Mohamed Abd Alla El Maraghy for their continous valuable help and encouragment.



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INTRODUCTION

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Definitions: (1)

Perinatal death : Number of stillbirth and live born infant deaths within the 1st week.

Stillbirth : Number of foetues born dead after the twenty - eight weeks of pregnancy.

Neonatal death : is a baby born alive but who dies within 28 day of birth.

In England and wales, a stillbirth means delivery of a dead foetus after 28 weeks of gestation, while in the U.S.A., they consider a delivery of a dead foetus after 20 weeks a stillbirth.

However, foetal weight is used sometimes in the U.S.A. (more than 500gm) - this figure distinguish between a birth and abortion.

There is no universal agreement about definition of perinatal death.

Figure (1) illustrates the definition of the three major time groups of death around birth.

A stillbirth is a baby born after 28 weeks gestation who shows no signs of life after separation from the mother, this definition can be vague both in the timing of the 28th week, for some women are uncertain of their dates, and in the signs of life after separation. In other counteries some attempt has been made to overcome the time difficulty by imposing a weight standard of 500gm, below which the case is categorized as an abortion.

A neonatal death is a baby born alive and who dies within 28 days of birth, it does not matter whether the baby was born before or after the time of viability (28th week of pregnancy).

Perinatal death is a term used for a total of all the stillbirth and the first week neonatal death, in some European countries the perinatal death period goes as far as 10 days and not 7 days as it is in Great Britain and America.

Since the majority of neonatal death do occur in fact in the 1st week of life, the perinatal death group do include oll the stillbirths and the vast majority of neonatal deaths.

The perinatal mortality rate is the number of perinatal deaths expressed as a proportion of 1,000 total births occuring in the same area at the same time.

$$\text{Perinatal mortality rate} = \frac{\text{Stillbirth + First week N.N.D.} \times 1{,}000}{\text{Total births in the year}}$$

In the United Kingdom the rate has been dropping steadily for 40 years as shown in Fig. (2), the perinatal mortality rate is now 18 per 1,000 for the United Kingdom. (1)
The perinatal mortality rate in England, wales in comparison to other European states in 1966 is shown in Fig. (3), but it must keep in mind, that each country has a different population with a different nutritional and morphelgical characteristics.
The perinatal mortality rates should be only compared between similar population. Unfortunately such rates are not available for all states.

Most Western countries are now examining their data at regular intervals but reference is still made to 1958 National Birthday Trust Survey on perinatal mortality, for it was the most thorough and searching study ever made of this subject, it was mounted in the whole of Great Britain for one week in March, 1958. All births (live or still) were surveyed in a comprehensive questionnaire filled at the time of delivery. Some 17,000 cases in the week documented and in addition all the fetal and neonatal deaths for the following 3 months were examined in details. Thus some 7,000 deaths could be examined and compared with the control week population of live and dead babies, one of the features of this survey was the high post mortem examination rate. Over 2/3 of the perinatal deaths has an autopsy, performed for uniformity in a limited number of pathological centers. This has never been done on a national scale previously. The results of this survey are published in 2 volumes: Perinatal Mortality (1963)[2] and Perinatal Problems (1969)[3] and these are still standard works for any one wanting details in this subject.

The 1970 British Brith Survey, which was also co-sponsored by the National Birthday Trust, was not aimed at looking particularly at perinatal portality. This study examined the babies who lived and, although there is some valuable data on mortality in the later survey, it was not aimed at this end. Hence the Perinatal Mortality Survey of 1958 stands as a definitive model.

Perinatal mortality rates can be calculated for any group of the population and most large maternity units do reckon their own for their annual report. Obviously such data concerns a comparatively small number of deliveries and the population attending any one hospital does not reflect accurately the make-up of that region for hospitals tend to have selective programmes of accepting patients. However, hospital data is usually concluded by one person from a set of uniform notes that are kept in a standard way and referral back about doubtful cases can be done readily. Further, examination of yearly trends may indicate the the value of some specific obstetrical procedures. Population changes are shown and alterations of

perinatal mortality following a change in policy of a hospital may demonstrate the merit of that alteration in management as an example Tipton & Lewis 1975 (4) considered that the conjunction of an active abortion ploicy to reduce the number of congenital abnormalities, a more intensive induction and a wide fetal monitoring policy in labour was associated with a drop in perinatal mortality from 22.2 to 10.6 per 1;000 in 2 years. Similarly, Edington et al. (1975)(5) considered that the drop in the perinatal mortality rate from 15.8 to 11.7 per 1,000 in a year was due to elimination of intrapartum stillbirth and significant reduction of neonatal mortality following a wide spread continuous fetal monitoring programme in labour. Such changes could only be seen in a limited population, intensively observed and all subjected to the alteration under examinations.

At a national level, perinatal mortality rates are estimated from death certification, correlating this with birth notifications. This has the advantage of using large numbers and covering the whole country but obviously it is difficult to investigate retrospectively any doubtful cases, since changes in Management

take time to introduce and are patchily implemented, the effects of improvements which follow would be blurred.

Maternal Mortality in Britain has declined remarkably from 36 per 1,000 total births in 1930 to 0.2 per 1,000 (abortion excluded) in 1970 (Figure 4) and with such a low figure the assessment of further improvement in obstetric care is difficult on figures of maternal mortality alone. Perinatal mortality on the other hand is a much more senstive index. Compared with maternal death the medical context of a perinatal death is much less dramatic, and post-mortem examination alone does not always reveal completely the true cause. Many factors may be involved: maternal disease during pregnancy or existing before the pregnancy began and social, economic or genetic conditions may be of marital importance.

The British Perinatal Mortality Survey conducted in 1958 has thrown much light on the matter, and indeed since its publication in 1963 there is reason to suppose that many of the lessons from it have been taken to heart with resulting improvement. In the Survey it was found that about one-half of all the

perinatal deaths were associated with failure of supply, either of oxygen or nutrition while about one-fifth were due to congenital malfunction incompatible with survival. Other factors as pulmonary infection of the newborn, cerebral birth trauma, hyaline membrane disease and pulmonary haemorrhage were relatively unimportant.

FACTORS INFLUENCING PERINATAL MORTALITY

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1- Biological and social factors in perinatal mortality:

I llsely (1955)(6) states that, the use of husband's social class in vital statistics tends automatically to focus attention on the conditions existing at the time of maternity .... but it has a much wider significance, for example the wife of a professional man irrespective of her father's class will normally posses before marriage the personal qualities, eduction and social habits that fit her for that role. " Husband's social class " is useful.... not only because it accounts for the immediate way of life of a mother but because it reflects his history, the conditions of his upbringing and his personal qualities. The socio-economic status has an effect on age at marriage, age at birth of the first child and the spacing and the number of subsequent children, it also has an effect on the type of ante-natal care sought and the place and conditions under which delivery takes place.