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PERINATAL MORTALITY IN THE MALTESE ISLANDS

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Abstract

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This study analyzes the perinatal mortality statistics for the Maltese Islands since 1950 and compares them to those of other European countries. The mortality rate has taken a variable downward trend which can be correlated to important events during this period. Hospital perinatal mortality statistics are reviewed in the light of the national statistics.

Keywords: Perinatal mortality; Late fetal death; Stillbirth; Early neonatal death; Crude birthrate; Fertility rate.

Introduction

Perinatal mortality is an important criterion of maternal and child care. The number of fetal and early neonatal deaths has dropped considerably since the beginning of the century in developed and in many developing countries. The drop in perinatal mortality rates has slowed in recent years. Perinatal deaths are often caused by multiple factors, with interactions between conditions affecting the mother and those affecting the fetus. It is therefore often difficult to fully grasp the contribution of the various factors in each case. Some factors can be easily influenced, and it is the adequate control of these factors that has contributed to the drop in perinatal mortality rates. Other factors, such as antepartum anoxia, premature delivery and congenital anomalies are more difficult to deal with.

It is widely acknowledged that the sociobiological characteristics of a population, together with certain extrinsic factors, are important in determining the perinatal mortality of a country. This study analyzes the national perinatal mortality statistics collected for the Maltese Islands and compares these to statistics from the main hospital on the Islands.

Materials and definitions

The national statistics for the Maltese Islands since 1950 were obtained from publications issued yearly by the Department of Health and the Central Office of Statistics [4,5].

Stillbirths and neonatal deaths in the Maltese Islands are notifiable and are defined by specific criteria. Thus the term *late fetal death* or *stillbirth* refers to any child delivered after the 28th week of pregnancy, who after separation from the mother does not breathe or show any other evidence of life. The *stillbirth rate* is defined as the number of stillbirths per 1000 live births. Any fetus born dead before the 28th week of pregnancy is considered an abortion and is not registered. A *live birth* refers to any child, irrespective of

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the duration of the pregnancy, who after separation from its mother breathes or shows any other evidence of life. The *crude birth-rate* is the number of live births per 1000 total population. Since this population includes men, children and women beyond childbearing age, it is better to relate the live births to the number of women between the ages of 15 and 44. This is done in the *fertility rate,* which is the number of live births per 1000 women in that age group.

It has been recognized that potential causes of death that are operative during pregnancy and labor may project their ill-effects into the first few days of life, so the concept of perinatal mortality was introduced. The *perinatal mortality rate* is defined as the number of stillbirths plus deaths occurring in the first week of life (early neonatal deaths) per 1000 live births. The *early neonatal death rate* is defined as the number of infants dying in the first week of life per 1000 live births.

Perinatal mortality rates in Europe

Perinatal mortality rates in most countries have generally declined. This decline has been closely related to socioeconomic progress and improvements in basic health and social services. Figure 1 shows the perinatal mortality rates for European countries for the years 1961 and 1977, with perinatal mortality defined as the number of stillbirths and early neonatal deaths per 1000 total births [8,9]. While the diagram shows that perinatal mortality has decreased in all countries, it has done so at variable rates. In 1961, the Maltese Islands had the fourth highest rate (37.0/1000 total births (TB)). Countries with higher rates included Northern Ireland (38.3), Italy (40.3) and Portugal (40.9). In a period of about 15 years, conditions in the Maltese Islands have so improved that a fall in the perinatal mortality rate of 33.6% can be noted. The Maltese Islands in 1977 had the eleventh highest rate (18.4), followed by Scotland (18.5), Poland (19.2), Czechoslovakia (19.9), Yugoslavia (20.3), Italy (20.8), Hungary (27.2) and Portugal (31.8). Because of wide variations in the registration of fetal deaths, it is difficult to make any intercountry comparison of statistics [8]. The "viability" criteria, which set the lower limit for stillbirths and distinguish them from abortions, are based on various parameters, differing from one country to the next.

In addition, abortion practices are also re-

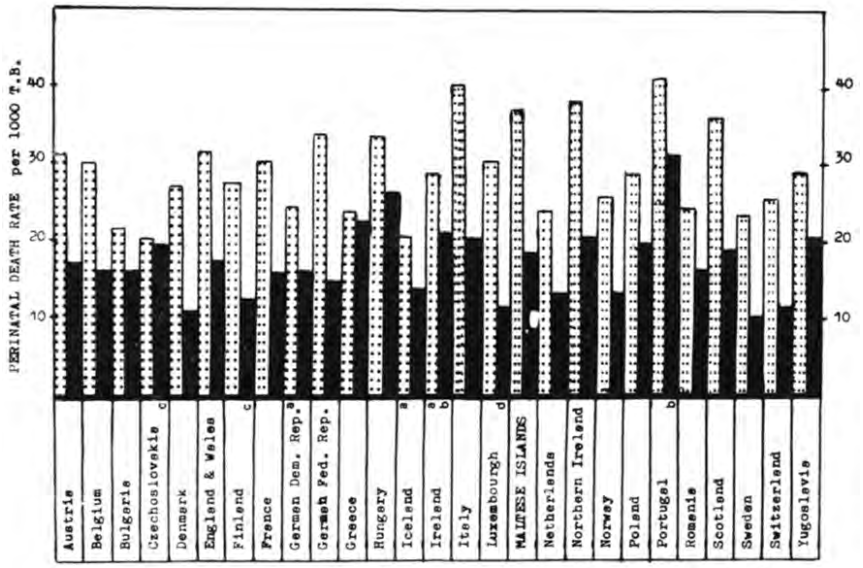

Fig. 1. Perinatal mortalities in WHO European countries – 1961 and 1977: a, 1966; b, 1975; c. 1976; d, 1978.

flected in the perinatal mortality statistics. In countries where abortion is legalized, any abnormal pregnancies detected early are terminated before the 28th week of gestation and are not registered as late fetal deaths. Where abortion is still illegal, as it is in the Maltese Islands, such cases terminate later carrying with them high perinatal mortality rates.

Perinatal mortality in the Maltese Islands

Perinatal mortality rates have generally taken a variable but definite downward trend in most countries. This same gradual trend in perinatal death rates can also be seen for the Maltese Islands. Figure 2 shows the perinatal mortality rates for the Maltese Islands for the period 1950–1980 broken down for stillbirths and early neonatal deaths, compared to the crude birthrates of the same period.

The crude birthrate in the Maltese Islands has fallen considerably during this period, reaching its lowest value of 15.8 per 1000 population in 1969. Since then it has generally increased to reach the 17.2 figure of 1980. The decrease in birthrate during the earlier part of the period under study was a result of two main factors. During this period a large percentage of the population, mainly young people in their most fertile years, emigrated overseas. This was compounded by the cutting back of the British forces stationed there. Both forms of emigration were particularly heavy during the post-war and the 1963–1965

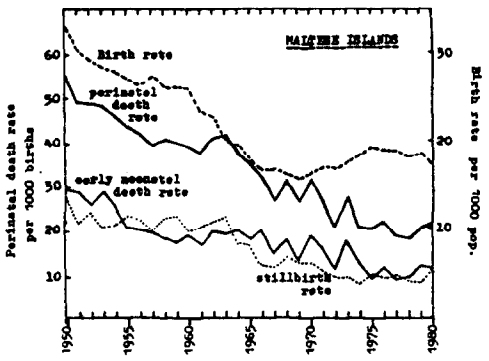

Fig. 2. Trends in perinatal mortality, 1950–1980.

periods. Emigration has now tapered off slightly and is partly balanced by a number of returning migrants.

Another cause of the decrease in birthrate was a decrease in family size resulting from changes in socioeconomic factors. In a 1963 survey [3], it was shown that among couples married before 1920, 36% produced families of less than five children and 64% families of five or more children after 15 years of marriage. These proportions changed to 46.5% and 53.5%, respectively, among couples married between 1940 and 1944. Current family size is presently limited to two or three children per couple. The above statistics are reflected by a decrease of 28% in the fertility rate since 1957. In 1957, women of ages 15–44, who made up 20.8% of the total population, had a fertility rate of 132.2 per 1000 women. In 1979, the fertility rate decreased to 74.5 per 1000 women in the age group 15–44, who made up 22.7% of the total population.

The decrease in birthrates, particularly the rather sharp drop after 1962, coincided with and may have contributed to the marked downward trend in the stillbirth rate after 1963 by decreasing the load on antenatal services. The early neonatal death rate exhibited a sharp drop in 1953, thereafter assuming a more gradual decline to an average of 10 per 1000 live births. The year 1953 is a landmark in obstetric care in the Maltese Islands, because that year saw the opening in Malta of a number of antenatal clinics in eight principal towns and villages. These clinics provided a service aimed to serve pregnant women from the lower socioeconomic group. These proved to be a success from the very beginning, and the facilities were quickly expanded to cover most of the principal towns and villages. The clinics were run under the direction of a medical officer trained in obstetrics, a midwife, and the local health visitor who looked up patients who failed to attend regularly.

These clinics were the first step towards providing continuous prenatal care to women from the lower social classes. Frequent check-up of these women helped identify earlier the

insidious disorders of pregnancy that contribute to chronic placental insufficiency and the corresponding fetal anoxia. Antepartum and intrapartum anoxia have been estimated locally for the period 1957–1966 at 40.6% of all perinatal deaths [7]. This figure is higher than that reported in the 1958 British Perinatal Mortality Survey, which estimated that anoxia accounted for 32.7% of perinatal deaths [2].

Place of delivery

In the 1950s, only a small number of deliveries were conducted in the general hospitals or in private institutions [6], thus contributing markedly to the high perinatal death rates of that period. The situation has now been reversed. The majority of deliveries in 1979 in the Maltese Islands were hospital deliveries, home deliveries accounting for only 1.8% of all deliveries. During that year there were maternity services at four hospitals, two state-run and two run by private organizations.

The main government teaching hospital in Malta – St. Luke's Hospital – accounted for the majority of cases at 54.9%, while its smaller counterpart in Gozo – Craig Hospital – delivered only 4.6% of all 1979 deliveries. The two private hospitals – St. Catherine's Hospital and Blue Sisters' Hospital – delivered 21.8% and 16.9%, respectively. The situation was slightly different prior to 1977, when another hospital – David Bruce R.N. Hospital – contributed towards the maternity services in Malta, accounting for 9.2% of 1977 deliveries. The other hospitals contributed, respectively, to 55.9%, 5.3%, 10.4% and 16.3% of deliveries in 1977. Home deliveries accounted for the remaining 2.9%.

During 1980, the maternity services situation changed dramatically. A new maternal and child health complex was commissioned at St. Luke's Hospital. The obstetric section, which has a complement of 108 beds, is fully equipped with modern monitoring and resuscitative apparatus, thus providing better intrapartum and postpartum care. That year also saw the termination of maternity services at the two private hospitals. These developments have resulted in an increase in the home deliveries to 2.5% in 1982. St. Luke's Hospital accounted for 91.6%, while Craig Hospital accounted for 5.9% of deliveries in 1982.

Figure 3 shows the perinatal deaths for St. Luke's Hospital during the period 1974–1980 broken down for early neonatal deaths and stillbirths. Over these past 7 years, there has been a decrease in the hospital in the perinatal death rate, which is more marked for the stillbirths. Comparing these figures with the national statistics for the same period, it would appear that the mortality rates, particularly of stillbirths, are higher in the hospital than in the general population. St. Luke's Hospital caters for the whole population, while the two private hospitals cater for patients from the higher socioeconomic group. The latter group of patients has been shown [2] to carry less risk of perinatal mortalities. However, it is more likely that the higher hospital figures are due to the fact that practitioners and obstetricians attending private patients referred any patients with serious complications to the state hospital.

To better assess the efficiency of the hospital's management of obstetric cases, the Department of Obstetrics at St. Luke's Hospital introduced a system whereby all cases of perinatal deaths are studied retrospectively to identify the presence of any avoidable causes of death. From a total of 339 deaths occurring

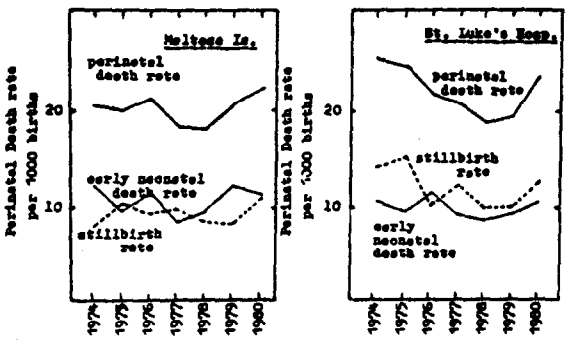

Fig. 3. National and hospital perinatal mortality rates, 1974-1980.

at St. Luke's Hospital during the period 1979–1982, 33.6% had avoidable factors intrinsic to the hospital (18%) or to factors outside the hospital (15.6%) . Outside factors were, in many instances, too-late referral of the patient to hospital by outside physicians or reluctance of patients to seek medical advice early. Included in the hospitals avoidable factors were late diagnosis of certain complications in the last few weeks of pregnancy and during labor. Unavoidable factors accounted for 54.6% of cases, which included severe prematurity, hypertensive disorders and congenital anomalies imcompatible with life. In spite of postmortem examination, unexplained cases made up the remaining 11.8% of cases.

Discussion

Obstetrical care in the Maltese Islands has made steady progress, enabling perinatal mortality to decrease substantially. This decrease has attained the levels envisaged by Baird nearly 30 years ago [1] when he observed that "under ideal conditions, neither the stillbirth rate nor the neonatal death rate need be more than 10. Where the mothers are of good physique, are well fed during pregnancy, receive expert medical and nursing care, and have families of three or four children before the age of 30, the chance of a stillbirth or a neonatal death would be slight".

While intercountry comparisons are difficult, many European countries have surpassed this target, and there is no doubt that much can still and must be done to improve the care of pregnant women in the Maltese Islands. The people responsible must strive to identify early and more precisely high-risk pregnancies to insure that special attention and skills are given to these mothers, thereby reducing the avoidable deaths. This can only be achieved by a more coordinated maternity service where close cooperation exists between the general practitioners, the midwives responsible for community antenatal clinics and the hospital service. Pregnant women must be encouraged to seek medical care early in the antenatal period so that high-risk patients are identified as early as possible. These patients can then be carefully assessed for fetal well-being, particularly during the last few weeks of pregnancy. This can only be achieved by the promotion of educational programs for women of reproductive age. The newly introduced family health clinics are a first step towards encouraging pregnant women to take advantage of the facilities available to them.

These clinics also promote better maternal health by making family planning methods available. Earlier education of younger women should encourage vaccination against rubella, thus reducing the incidence of congenital abnormalities, which account for 15.2% of perinatal deaths [7].

Important also in decreasing the number of deaths caused by intrapartum anoxia is better and more efficient intrapartum management of the pregnant mother. The obstetric department at St. Luke's Hospital is presently organized so as to provide for the continuous observation of the fetus, with multidisciplinary medical staff easily available to help manage high-risk patients. Postpartum care of the infant has improved markedly so that cases of prematurity have a better chance of survival. Facilities exist to reduce the perinatal mortality of the Maltese Islands, it only remains for all those concerned to make the best possible use of these facilities.

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