PERINTAL MORTALITY RATE IN A TEACHING HOSPITAL: A REVIEW OF 15 YEARS EXPERIENCE IN MADANI HOSPITAL - SUDAN

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Abstract:

Objective:

Perinatal mortality rate remains of fundamental inference for identifying problems pertaining to obstetrical and early neonatal treatment. Unit we know how to prevent congenital malformations, obstetrical accidents (abruptio –placentae) and very premature deliveries, we must accept an irreducible minimum perinatal mortality rate. The perinatal mortality rate is a sensitive index of the adequacy and the type of the obstetrical care during pregnancy, labour and neonatal care early in the puerperium.

Methods:

This is a retrospective study carried in Wad Medani Teaching Hospital, Medani city – Sudan. Case notes were reviewed for all perinatal deaths and all deliveries during the period 1st January 1985 up to 31st December 1999. This period is subdivided into three periods 1985 – 1998-1990-1994-1995-1999.

The data were analyzed and the literature is reviewed to compare result of similar studies.

Results:

Out of the total number of deliveries during that period (n= 44605) there are 2340 perinatal deaths, giving a total perinatal mortality rate of

52.5/1000 live births. This perinatal mortality rate shows a decline with each period, being 70.3/100 during the period 1985 – 1989, 56.8/1000 during the period 1990-1994 and 37.3/1000 during the last period 1995 – 1999. Prematurity is the leading cause of perintal deaths accounting for .2% of cases. The number of preventable perintatal deaths had decreased steadily.

Conclusion:

The study highlighted the existence of a very serious health problem.

Prematurity, congenital malformation, poor antenatal care, deficient care at delivery, and limited neonatal care facilities are the main contributory factors. Reduction of the perintatal mortality rate is subject to improvement of those main factors, improvement of communal economic, social and educational standards, improvement of data collection and changes in obstetrical and neonatal care.

Keywords:

- Perinatal mortality – Perinatal mortality rate – prematurity.
- Congenital malformation – neonatal care.

Introduction:

Although there has been a word wide decline in the perintatal mortality rate over the past decaeds due to improvement in the health services, it is still a major public health problem. In spite of great strides in obstetrical services and neonatal care, perinatal mortality has not been completely eliminated.

Methods:

The study was carried out in Wad Media Teaching Hospital (WTH),

Medani City – Sudan. Case notes were reviewed for all perinatal deaths and deliveries occurring during the period 1st January 1985 up to 31st December 199. The variables used are the gestational age t delivery, birth weight, congenital malformation, mode of delivery, obstetrical complications, and medical complications with pregnancy, the blood grouping and Rhesus of both partners and the newborn and cardinal signs of infection. Perinatal mortality in this study is defined as mortality in fetuses weighing more than 500 gm, who die at birth, or before the end of the first week of life (1) . The perinatal mortality rate is defined as the number of perinatal deaths per thousand live births (2). The whole period divided into 3 period of 5 years interval (1985 –1989- 1990 – 1994-1995-199). The literature is reviewed to compare results of similar studies.

Results:

Two thousands three hundred and fourty (2340) perinatal deaths occurred during the period 1985 – 1999. the total number of deliveries in the same period is 44605, giving and overall perintal mortality rate of 52.5/1000 live birth during the period 1985 –1989 there are 859 perinatal deaths and there are 12230 deliveries so the perinatal mortality rate is 70.2/1000 live birth during 1990 –1994 the perinatal deaths were 795 and there are 14002, thus the perinatal mortality rate is 65.8/1000 live birth. In the last period 1995-1999 the perinatal deaths are 686 and the total number of deliveries is

18373 giving a perinatal mortality rate of 37.3/1000 live births. The unbooked deliveries accounted for 27812/44608 62.3%) while the remaining 16793/44605 (37.7%) are booked cases. The cases received from rural areas are estimated to be 28520/44605 (63.9%) while the remaining 16058/44605 (36.1%) came from urban areas.

Table (1) shows the perinatal mortality rate in each year of the 3 periods, it is clear that the perinatal mortality rate declined each year being 77.8/1000 live birth in 1985 and 29.7/1000 live birth in 1999.

Table: 1- Distribution of perinatal mortality rate in each year (1985 – 199)

Year	No. Of perintal deaths	No. Of deliveries	Pernital mortality rate
1985	179	2300	77.8
1986	175	2370	73.8
1987	171	2410	70.9
1988	168	2550	65.9
1989	166	2600	63.8
1990	163	2712	60.1
1991	161	2790	57.7
1992	159	2800	56.8
1993	157	28.30	55.5
1994	155	2870	54.0
1995	149	22910	51.2
1996	144	3650	39.5
1997	140	3770	37.1
1998	129	3866	33.4
1999	124	4177	29.7
Total	2340	44605	

Table (2) shows the distribution of perinatal deaths according to the causes. These causes are mainly patho-clinical causes. Prematurity accounted for 40.6% of cases, while in 4.1% of cases t the exact cause is not determined.

Table: 2- Distribution of perinatal deaths (n) according to the causes

Causes	85-89		90-94		95-99		85-99	
	n	%	N	%	n	%	n	%
Prematurity	390	16.7	292	12.5	268	11.4	950	40.6
C.M.F	150	6.4	139	5.9	123	5.3	412	17.6
Stress of lab.	130	5.5	100	4.3	72	3.1	302	12.9
A.P.H	80	3.4	72	3.1	55	2.3	207	8.8
Pre- eclampsia	45	1.9	35	1.5	17	0.7	99	4.1
IUGR	33	1.4	27	1.2	25	1.0	85	3.6
Infection	34	1.5	26	1.1	18	0.8	78	3.4
R.D.S	25	1.1	19	0.8	15	0.6	59	2.5
Rh. Incompatibility	27	1.2	18	0.7	4	0.2	49	2.1
Undetermined	37	1.5	35	1.	29	1.2	101	4.1
Total	951	4.6	763	32.6	626	26.8	2340	100

C.M.F= Congenital Malformation

A.P.H = Antepartum haemorrhage

R.D.S = Respiratory distress Syndrome.

Table (3) shows the distribution of perniatal deaths according to the type of congenital malformation. It is clear that neural defects accounted almost for half of the cases 53.4 % those while multiple congenital malformation-accounted for 45/412 (10.9%).

Table: 3- Distribution of perinatal deaths (n) according to the type of congential malformation.

Type of CMF	85-89		90-94		95-99		85-99	
	N	%	N	%	N	%	N	%
Hydrocephalus	38	9.2	30	7.3	28	6.8	96	23.3
Anencephalus	28	6.8	20	40.9	20	4.9	68	16.5
Anephaocele	22	5.4	18	4.4	16	3.9	56	13.6
Trocheo Osophageal fistula	19	4.6	16	3.9	13	3.1	48	11.7
Diaphragmatic hernia	13	3.1	14	32.4	12	2.9	39	9.5
Fetal ascites	12	2.8	12	2.8	10	2.4	634	8.2
Intestinal atresia	7	1.8	11	2.6	8	1.9	26	6.3
Multiple Malformation	11	2.7	8	4.4	16	3.9	45	10.0
Total	**150**	**36.5**	**139**	**33.7**	**23**	**29.8**	**412**	**100**

C.M.F= congenital malformation

Discussion:

Wad Medani teaching hospital (WTH) is in the Gezira State .It is one of the well developed states in Sudan. Nevertheless, not all childbirths take place in hospital, so these results are not an accurate representative of the community as large. In this study the stillbirths (Late foetal deaths) and early neonatal deaths have been combined into a single category of, perinatal, deaths.

The overall perinatal mortality rate in our study is 52.5/1000 live births. This rate is Low compared with what Erdem-G found in Turkey (62.9%)(3).This difference could be explained by the fact that Erdem-G studied population who are predominantly rural and semi-urban.

Prematurity is the leading cause of the perinatal deaths accounting for 40.6%. this result is comparable with what Joseph KS found in his study in Canada (38.9%)(4) .Attempts to prolong the pergnancy are frequently maternal but must be pursued with constant reevaluation of both maternal and foetal gain form therapy. Evidence of chorioamnionits was found in 20% of our preterm deliveries. Where, however, adequate neonatal facilities are not available, suppression of preterm labour will be death with.

Congenital malformation is the second cause of perinatal deaths accounting for 17.6%. This is similar to 16.7% found by Lius in Canada(5). Almost half 53.4% of the case are neural tube defect anomalies. (All these congenital malformations are incompatible with extra uterine life. Fetuses with congenital anomalies incompatible with fetal growth and development are often aborted early in gestation (first trimester). Other anomalies, however, do not become life threatening until birth. Reduction

in perinatal mortality from congenital malformation could be achieved by Increased emphasis on screening in early second trimester with termination of pregnancy being offered in identified cases. Preconceptional vitamins supplementation might reduce the risk of neural tube defects in the offspring. Pre-pregnancy counseling of couples at increased risk of having a child with chromosomal, structural, metabolic or hereditary disorder should be increasingly used. Congenital malformation of the gastrointestinal tract (trachoesphageal), lungs, diaphragmatic hernia accounted for 27.5% of perinatal deaths. These congenital anomalies only become life threatening after the entral nutrition and respiratory function respectively, required by extra – uterine life. Stress of labour accounted for 12.9% of our perinatal deaths. This is similar to 11.6% found by Sheriner – E (6). Stress of labour leads to asphyxia which kills the fetus during labour, or shortly after delivery. These are cases where death of a healthy baby is attributed to mechanical obstruction, damage during labour or delivery or to a trauma cased by instrumental intervention. Those perinatal deaths can be reduced to the minimum by proper care at delivery.

Maternal disease such as hypertension, pre- eclampsia and diabetes are usually associated with antepartum haemorrhage intra- uterine growth retardation (IUGR) and respiratory distress syndrome: together they accounted for 19.0% of perinatal deaths. The result is comparable with the 18.2% found by Winbi (7). There is a marked reduction in the perinatal deaths due to these maternal cases. This was attributed to increase induction and elective caesarean section rate, better prenatal assessment of the foetal wellbeing better anti-convulsants therapy and generally healthy population.

Foetal ascites contribute for 8.2 of perinatal deaths in our study. This is manly caused by rhesus incompatibility. Rhesus haemolytic disease of the newborn is now a relative rarity. Such patients are now receiving better genetic and hematological care. Rigorous enforcement of rhesus prophylaxis in all women at risk of sensitization at stage of pregnancy is essential.

In our study infection contribute to only 3.4 % perinatal deaths. This result is comparable with Maleckiene – L who found that 3.1 % are due to foetal bactremia (8). Neonatol bacteremia is reduced to minimum by proper care at delivery and the availability of antiseptic conditions.

In out study the exact etiology of 4.1% of perinatal deaths is not determined. This result is comparable with the 4.3% found by Huang –Dy (9). These include perinatal deaths due to anoxia without evidence of preceding maternal complication or undue mechanical stress during labour.

Conclusion:

Any study of perinatal mortality rate should always be directed towards finding the cause, treating the cause and preventing the cause such study always needed haematological facilities, (Anemia, Syphilis. Toxoplasmosis, diabetes and rhesus incompatibility) urine analysis (pre – eclampasia, chronic nephritis, diabetes and significant bacteriuria). The help of the u/s should never be ignored.

The perenital deaths can be reduced by proper antenatal care this help in early detection and prompt treatment so many complications could be prevented. Ideal care at delivery should always include institutional deliveries under the supervision of trained medical and nursing staff. The partograms can clinically predict cases that may require obstetrical

intervention.

Today the constant attention of the neonatologist pediatrician, and expert nursing personnel, to care for the newborn are very essential. In order to achieve our goal we need to have good resuscitative measures with machines suction apparatus, small laryngoscopes and continuous oxygen supply. Incubators are necessary for premature and high risk neonates

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