

# Relationship Between Time of Birth and Perinatal Death Ramathibodi Hospital : 1981 - 1989

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**Abstract :** *A 9-year retrospective review of the relationship between time of birth and perinatal death at the Department of Obstetrics and Gynaecology between January 1, 1981 and December 31, 1989. There were 63518 births with a total of 427 perinatal deaths, of which 222 deaths were stillbirths and 205 were neonatal deaths. The perinatal mortality rate was 6.72 per 1000 births. PMR were 6.85 and 6.34 for babies born on weekdays and weekends, respectively and the PMR for babies born between 16.01-08.00 hr was 8.20 higher than that between 08.01-16.00 hr, which was 5.60 per 1000 births. The incidence of preventable death from asphyxia and specific conditions also showed an increase during 16.01-08.00 hr. In order to reduce PMR further, improvement in intrapartum care and management between 16.01-08.00 hr should be reviewed. (Thai J Obstet Gynaecol 1992;4:85-88.)*

**Key words :** time of birth, perinatal death

Perinatal mortality rate (PMR) is an indicator of the quality of obstetric and neonatal cares. It also reflects the respective maternal and child health. The problems encountered when trying to improve PMR other than socio-demographic make-up of patients are shortages of personnel, facilities, equipment and maldistribution of these factors which may be related to time of birth. The objective of this study was to identify rates and causes of perinatal death at different time of

birth. It is hoped that the findings will help to improve the quality of obstetric and neonatal care services and at the same time reduce further perinatal mortality and morbidity.

## Materials and Methods

Data was collected from a summary of delivery records of patients delivering single births at Ramathibodi Hospital between January 1, 1981 and December 31, 1989. The World

Health Organization's definition of perinatal mortality is used<sup>(1)</sup>. It defines perinatal mortality as a total of all stillbirths occurring at or over 28 weeks of gestation and neonatal deaths during the first week. The perinatal mortality rate is defined as the number of perinatal deaths expressed as a proportion of 1000 total births occurring in the same area at the same time. Wigglesworth's classification for perinatal deaths is used in this analysis<sup>(2)</sup>. The time of birth was grouped into 2 categories, for babies born between 08.01-16.00 hr or between 16.01-08.00 hr due to official and non-official working hours.

## Results

During the period of study, there were 63518 births with a total of 427 perinatal deaths, of which 222 deaths were stillbirths and 205 were neonatal deaths. The perinatal mortality rate was 6.72 per 1000 births (Table 1). PMR were 6.85 and 6.34 per 1000 births for babies born on weekdays and weekends, respectively (Table 2) and the PMR for babies born between 16.01-08.00 hr was 8.20 per 1000 births, higher than that between 08.01-16.00 hr, which was 5.60 per 1000 births (Table 3). Incidence of preventable death from asphyxia and specific conditions such as hypertensive disorders in pregnancy, antepartum hemorrhage, group B streptococcal infection, and meconium aspiration syndrome were also shown to increase during 16.01-08.00 hr (Table 4).

**Table 1** Perinatal mortality of singleton births, Ramathibodi Hospital, 1981 - 1989

Years	Births	SB	NND	PMR
1981	6526	23	26	7.51
1982	6698	22	23	6.72
1983	6759	25	26	7.55
1984	6649	26	23	7.37
1985	6780	23	18	6.05
1986	7495	28	24	6.94
1987	7222	24	24	6.65
1988	7750	26	21	6.06
1989	7640	25	20	5.89
Total	63518	222	205	6.72

SB = Stillbirths

NND = Neonatal deaths

PMR = Perinatal mortality rate

**Table 2** PMR for babies born on weekday and weekend, Ramathibodi Hospital, 1981 - 1989

Day of births	Births	SB	NND	PMR
Weekday	47429	168	157	6.85
Weekend	16089	54	48	6.34
Total	63518	222	205	6.72

**Table 3** PMR for babies born during 08.01 - 16.00 hr and 16.01 - 08.00 hr, Ramathibodi Hospital, 1981 - 1989

Time of births	Births	SB	NND	PMR
08.01 - 16.00	36064	100	102	5.60
16.01 - 08.00	27454	122	103	8.20
Total	63518	222	205	6.72

**Table 4** PMB by causes of death for babies born during 08.01 - 16.00 hr and 16.01 - 08.00 hr, Ramathibodi Hospital, 1981 - 1989

Causes of death	Time of births			
	08.01 - 16.00		16.01 - 08.00	
	PND (n = 36064)	PMR	PND	PMR
Congenital malformations	85	2.36	90	3.29
Maceration	67	1.86	64	2.33
Prematurity	14	0.39	14	0.51
Asphyxia	27	0.75	36	1.31
Specific condition	9	0.25	21	0.76
Total	202	5.60	225	8.20

## Discussion

The perinatal mortality rate at Ramathibodi Hospital has declined dramatically from 14.0 per 1000 births in 1975 to 6.9 per 1000 births in 1989<sup>(3,4)</sup>. When comparing the perinatal mortality rate with other institutions, it was the lowest one<sup>(5-7)</sup>. The cause for this decline is mainly due to continuous patient care during antepartum, intrapartum and postpartum including risk factors screening<sup>(8)</sup>, active management<sup>(9)</sup>, labour graphic records<sup>(10)</sup>, and the use of tocolytic drugs<sup>(4)</sup>. The main reduction in perinatal mortality rate is due to the reduction in neonatal deaths, whereas, the stillbirth rate remain fairly constant. It will need further investigation to find a way to reduce the stillbirth rate but this will be even more difficult and will require a more costly input. Other factors that might influence perinatal mortality apart from the ob-

stetrical care are socio-economic, physical and cultural environment of the patient, the method of data collection and time of birth. According to the time of birth, many studies have shown that perinatal death was high during the weekend and between evening and early morning<sup>(11-15)</sup>. From this study the result was the same only between 16.01-08.00 hr compared to 08.01-16.00 hr but between weekdays and weekends the result was not significantly different. It was noted that the incidence of preventable death from asphyxia and specific conditions was shown to have increased during 16.01-08.00 hr. In order to reduce PMR further, improvement of intrapartum care and management during the non-official working hours between 16.01-08.00 hr should be reviewed. In this way the perinatal mortality rate can be reduced as well as preventable deaths.



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