In Late Preterm and Early Term, The Effect Of Low Economic Status Of The Family On Respiratory Distress

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Introduction

Full-term infants born between weeks 37 and 41 of gestation are considered to be in the low-risk group in terms of neonatal morbidity. Recent literature, however, has shown that significant morbidity persists at term, and more specifically in the “early term” period, defined as 37–38 weeks’ gestation (1,2). Late pre-term births, defined as those between 34 and 36 6/7 weeks, also have higher mortality and morbidity rates than 39-week term infants (3). There is a multifactorial etiology related to births prior to 39 weeks, including premature rupture of the membrane, pre-term labor, pre-eclampsia, fetal distress, abnormal placentation, abnormal maternal or fetal conditions, etc., although the economic and social status of the parent has also been identified as an indicator of early birth (4). There have to date been only limited studies evaluating the link between socio-economic status and early-term births. Accordingly, this study examines the relationship between early term and late pre-term infants, respiratory morbidity and socio-economic status.

Methodology

The study was conducted between January 2016 and December 2016, and included neonates born between 34 0/7 and 41 6/7 gestational age. The cases were categorized into three gestational age groups: late pre-term (34 0/7–36 6/7), early term (37–38 6/7) and term 39–41 6/7. Newborns with congenital malformations (encephalopathy, Down syndrome, critical heart malformation, diaphragmatic hernia, etc.), IUGR, diabetic mothers and multiple pregnancies were excluded from the study. Personal information on the parents were recorded, including their monthly income, the number of pregnancy follow-ups, maternal age, number of cesarean sections, respiratory distress and number of hospitalizations. Respiratory distress refers to respiratory morbidities that required the admission of the infant to the NICU, irrespective of any diagnostic test or therapeutic intervention. Income levels were categorized into three, based on the minimum wage and livelihood limit in our country: below 1,500 Turkish Lira (TL) (430 \$) per month; between 1,500 TL and 3,000 TL (\$430–\$960); and more than 3,000 TL (\$960).

References

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Results

The study sample included 900 infants who fell within the inclusion criteria, of which 206 (22.9%) were late pre-term (Group1); 342 (38%) were early term (Group 2); and 352 (39.1%) were term (Group 3). When the income level of the family was examined, 129 had a family income of below 1,500 TL; 351 were in the 1,500–3,000 TL income group; and 420 earned above 3,000 TL. A chi-square test was applied, and it was found that the income levels of Groups 1 and 2 were lower than that of Group 3 (p<0.001). On the other hand, a multi-nominal regression analysis including sex, gestational age, pregnancy follow-ups, cesarean counts, pre-eclampsia/eclampsia, maternal age as covariates, revealed that a lower income rate was an independent risk factor, increasing the likelihood of respiratory distress 2.8 times. (Table 1).

Conclusion

There is insufficient data related to our country in the United Nations Human Development Program Multi-Dimensional Poverty Index (5), however in the eastern Anatolian region – where the present study was carried out – has a relatively lower level of development than other regions. For this reason, our study may be the first to contain this data. Access to health in our Turkey is easy and free. However, the development of various factors, such as the implementation of a suitable industrial development plan, and improvements with regards to the level of culture and education, may, in the future, help to reduce morbidity among newborns, not just in Turkey but also in other developing countries.

Table 1. Evaluation of the causes of respiratory distress by regression analysis

Respiratory distress		B	p*	OR**
YES	Preeclampsia	-1,044	,176	,352
	Cesarean	2,152	,000*	8,601**
	Maternal age < 20 yr	,104	,906	1,110
	Maternal age 20-35 yr	-,036	,882	,964
	Maternal age > 35 yr	0 ^b	.	.
	Irregular pregnancy follow up	,091	,826	1,096
	Male	,378	,089	1,459
	Female	0 ^b	.	.
	Income < 1500 TL	1,036	,001*	2,818**
	Income 1500-3000 TL	-,225	,391	,799
	Income > 3000 TL	0 ^b	.	.
	Late preterm	1,940	,000*	6,959**
	Early term	,995	,004*	2,704**
	Term	0 ^b	.	.

The reference category is: NO respiratory distress.
95% Confidence Interval for Odds ratio. Pseudo R square: 0.216
* The bold entries represent statistically significant at the level of p <0.05.
** Odds ratio