

Low Birth Weight in Western Iraq

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ABSTRACT:

BACKGROUND:

In Iraq, several reports documented an increase in the prevalence of low birth weight (LBW) in the last 3 decades.

OBJECTIVE:

This study was carried out to report on the rate of LBW in western Iraq during the period of widespread violence.

METHODS:

All singleton live births in Al-Ramadi Maternity and Paediatrics hospital during the period of 1st April to 1st Oct. 2006, were included in the study. All the neonates were checked for birth weight and the expanded pannelled was used to assess gestational age. Multiple logistic regression was used to estimate odd ratio for LBW.

RESULTS:

A total of 400 singleton livebirth were included in the study. Over all 31% of were LBW, and 67% of them were preterm. Maternal age, parties, education, lack of antenatal care and history of LBW and prematurity were risk factors.

CONCLUSION:

LBW and preterm birth neonates are still highly prevalent in Iraq and reflect the effect of sanctions, Gulf wars and widespread violence.

KEY WORDS: LBW, IUGR, birth weight, western Iraq, civil war

INTRODUCTION:

Low birth weight (LBW) is of a public health importance because of the strong relationship between birth weight and infant mortality rate (IMR) and morbidity^(1,2).

In Iraq, several reports documented an increase in the prevalence of LBW^(3,7) and IMR^(1,8,11). The situation in Iraq clearly illustrates the impact of man- made disaster on humanity. Reports from Iraq showed that civil war was reflected in high mortality and displayed people^(12,14). This work was carried out to study the prevalence of LBW and its determinants among neonates in western Iraq.

MATERIALS AND METHODS:

All singleton live births in Al- Ramadi Maternity and Paediatrics Hospital during the period 1st April to 1st oct. 2006 were included in the study. All the neonates were checked for birth weight and the expanded pannelled score was used to assess gestational age.

Intrauterine growth restriction (IUGR) was

considered as gestationally full term (≥ 37 weeks) but of LBW^(15,16). LBW is defined as birth weight < 2500 gm^(2,17).

Studied variables were maternal age, parities, maternal education, history of LBW deliveries, history of preterm births, availability of antenatal care (ANC) and mother's chronic diseases like hypertension and urinary tract infection (UTI). The sex of newborn was on interest too.

Multiple regression analysis was performed to calculate odd ratio for LBW and preterm birth (dependent variable). P value less than 0.05 was considered as significant.

RESULTS:

A total of 400 singleton live births were included in the study. Overall, 124 (31%) of newborns were LBW, and of these 41 (33%) were recognized as IUGR babies, and 83 (67%) were preterm births.

All age groups, < 20 , $30 - 35$ and > 35 years, were significant risk factors for LBW and preterm birth (OR=1.8, 5.2 and 1.7, respectively for LBW and OR= 1.6, 10.2 and 1.7, respectively for preterm birth). Number of pregnancies 1, 2 – 4, > 4 , were significant risk factors for LBW and preterm birth (OR= 1.8, 2.4 and 2.4, respectively for LBW and OR= 1.6, 2.9 and 2.2, respectively for preterm birth). All maternal educational levels, illiterate, primary and $\geq$ were risk factors for LBW and

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preterm birth (OR= 1.8, 14.3 and 1.9, respectively for LBW and OR= 1.8, 4.7 and 1.9, respectively for preterm birth). Lack of ANC was a significant risk factor for LBW and preterm birth (OR= 14.9 and 8.8, respectively). History of LBW and preterm birth were risk factors for LBW and preterm birth (OR= 1.8 and 1.7, respectively). Maternal history of hypertension and UTI were significant risk factors for LBW and preterm birth (OR= 1.7 and 1.5, respectively for LBW and OR= 1.8 and 1.6, respectively, for preterm birth). These findings are shown in Table 2.

The sex of newborn was not significantly associated with LBW and preterm birth.

DISCUSSION:

The reported rate of LBW (31%) in western Iraq (Al-anbar) is lower than that reported in eastern Iraq (Diyala) (51.8%)⁶ and the center of Iraq (Baghdad) (50%)⁽⁷⁾ in 2005 and 2006, respectively. However, the reported figure (31%) is almost double that reported in Baghdad in 1990s (15.1% and 13.3%)^(18,19), which are in turn much higher than that reported in neighbor countries, Saudi Arabia (Riyadh) (7.1%, 7.4% and 8.2%)^(20,22) and Syria (6.6%)⁽²³⁾ and Iran (5.2%)⁽²⁴⁾. The prevalence of LBW in Eastern Mediterranean countries varies greatly with economic status of these countries. Very low rates are found in Bahrain, Cyprus, Kuwait, and Qatar and United Emirates, while very high rates prevail in Afghanistan, Djibouti and Somalia⁽²⁾.

The finding that 67% of LBW neonates were premature is lower than that reported previously in Diyala⁽⁶⁾ (eastern Iraq) and Baghdad⁽⁷⁾ (centre of Baghdad) (80% and 83%, respectively). This difference may be attributed to the fact that this report was carried out 3 years after lifting sanctions. The previous studies^(6,7) attributed the high figures (80% and 83%) due to sanctions and Gulf wars. The difference, also, reflects the variation in the effect of Gulf wars and sanctions on different regions in Iraq. International Study Team (Harvard Study Team) observed that the increase in IMR and indices of malnutrition were differing in different region of Iraq⁽²⁵⁾. Civil war¹⁴ and widespread violence^(12,13) after 2003 had adversely affect the delivery of health services to

population. The network of public facilities was weak and most qualified professional left the country. Civil war and widespread violence could be other factors for the high figures reported in this study.

The finding that 67% of LBW neonates were premature and 33% of them were due to IUGR is inconsistent with that reported in the literature^(26,27) which demonstrated that in developing countries, most of the LBW is related to IUGR. The difference could be attributed to economic sanctions. Good maternal nutrition reportedly increases the duration of pregnancy and birth weight^(2,28).

Inadequate prenatal care might be another cause for figure of LBW (31%). Several workers documented the association of reduced incidence LBW and preterm delivery with prenatal care^(17,29). Lack of ANC was significantly associated with LBW and preterm birth. It could be attributed to deterioration in health services after the Gulf wars and economic sanctions^(3-7,25).

The present study indicated that no maternal age was a protective factor for LBW which is inconsistent with findings of other workers^(17,30). A great deal of debate had focused on whether increased maternal age is an independent risk factor or only act as a risk factor in the presence of other risk factors⁽³⁰⁾. The relationship of pregnancy and LBW may be confounded by poverty and other social factors⁽³¹⁾. Gulf wars, sanctions and civil war affect the economic status of families, which in turn reflected in LBW and preterm birth and mask the age factor to act as independent risk factor.

All maternal educational levels were risk factors for LBW and prematurity. This finding may reflect the inability of mothers with different educational levels to deal with situations during Gulf wars, sanctions and civil war. Well established studies had indicated that mothers with lower educational level give birth more to LBW and preterm neonates^(6,7,32-35).

Also, obstetric history of previous LBW and preterm deliveries was a significant risk for LBW. This finding is compared well to the findings of other studies^(17,31,33).

Table 1: Characteristic of the studied sample

Variable	Total No.	LBW No. (%)	Preterm birth No. (%)
Maternal age			
< 20	78	34 (43.6)	57 (73.1)
30 – 35	258	79 (30.6)	39 (15.1)
> 35	64	11 (17.2)	31 (48.4)
Parity			
1	82	35 (42.7)	61 (74.4)
2 – 4	188	61 (32.4)	37 (19.7)
> 4	130	28 (21.5)	29 (22.3)
Maternal education			
Illiterate	76	26 (34.2)	27 (35.5)
Primary	254	83 (32.7)	78 (30.7)
≥ secondary	70	15 (21.4)	22 (31.4)
Lack ANC services			
	283	85 (30.03)	102 (36.04)
History of LBW			
	34	6 (17.6)	11 (32.3)
History of Preterm birth			
	32	8 (25)	9 (28.1)
Hypertension			
	64	28 (43.7)	17 (26.6)
UTI			
	113	62 (54.8)	51 (45.1)

Table 2: Factors associated with LBW and preterm birth

	LBW		Preterm birth	
	OR	P value	OR	P value
Maternal age				
< 20	1.8	0.0001	1.6	0.0001
20 – 35	5.2	0.0001	10.2	0.0001
> 35	1.9	0.0001	1.7	0.00001
No. of pregnancies				
1	1.8	0.0001	1.6	0.0001
2 – 4	2.4	0.0002	2.9	0.0009
> 4	2.2	0.0005	2.2	0.0002
Maternal education				
Illiterate	1.8	0.0003	1.8	0.0001
Primary	4.3	0.0001	4.7	0.0002
≥ Secondary	1.9	0.0001	1.8	0.0001
Lack of ANC service				
	14.5	0.0003	8.8	0.0001
History LBW				
	1.8	0.0001	1.7	0.00001
History of preterm birth				
	1.8	0.0001	1.7	0.00001
Hypertension				
	1.7	0.0004	1.8	0.0002
UTI				
	1.5	0.0001	1.6	0.0003

CONCLUSION:

LBW and preterm neonates are still highly prevalent in Iraq and reflect the long term effects of Gulf wars and sanctions and widespread violence.

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