Research Article

IJCRR
Section: General Science
Sci. Journal Impact Factor 4.016

EVALUATION OF APGAR SCORE IN NEONATES BORN TO TEENAGE MOTHERS

P. Padmasri Devi[1], Ch. Ganapathi Swamy[2], M. Kiran Deedi[3]

[1]Department of Gynecology and Obstetrics, GSL medical college, Rajahmundry, AP, India, [2]Department of Community Medicine GSL medical college, Rajahmundry, AP, India, [3]Department of Biochemistry, GSL medical college, Rajahmundry, AP, India.

ABSTRACT

Background: Apgar score is measured after the baby is born. This will give the idea of the health status of the neonate. The aim of the study is to assess the association of birth weight and the Apgar score.

Methods: We collected data on the birth weights and the 1 min and 5 min Apgar score of new born infants in department of gynecology and obstetrics GSL Medical College and General hospital. Antenatal woman with age 15-19 years were registered from June 2013 to july2014were included as the study subjects Compared to babies with normal Apgar score, infants with low Apgar Scores were found to born with low and very low birth weights.

Results: Totally 123 individuals are in normal birth weight category. zero individuals are comes under poor apgar score category, one individuals are in normal apgar score category comprising about 8% with in total normal birth weight category, 122 individuals are in good apgar score category comprising about 99.2.%with in total normal birth weight category. Out of 238 neonates individual born 14 (5.9%) in low score category, 30 (12.6%) in intermediate score and 194 (81.5%) in normal score. Apgar score was statistically highly significant association with age of the mother (p=0.001).

Conclusion: Apgar score is a useful, early indicator of health and birth weight of new born infants

Key Words: Low birth weight, Teenage mothers, Apgar score

INTRODUCTION

To asses, neonates in 1953 Apgar score were developed and it has been widely adopted[1]. It was used not too predict resuscitation in their long term prognosis, and its main purpose to determine the need for resuscitation. An estimated18million babies are born with LBW and half of them are born in South Asia[2]. Apgar scoring system intended to predicts survival and to compare, method of resuscitation and prenatal experiences across hospitals and obstetrics practices.[3] the score is from zero to ten and there is rating like zero, one, and two for each sign depending upon the weather it was present or absent. Five sign of Apgar score is heart rate, respiratory effort, muscle tone, reflex irritability and colour. There is a evidence that relationship between apgar score and rates of neonatal deaths are in inverse ratio.[4] Apgar score was quickly adopted for use worldwide, becoming "common currency"[5] among perinatologists. The score was initially measured at one minute after birth, a second measurement, at five minutes of age. Apgar score is categorized as low (0-5), intermediate (4-6) and normal (7-10). A number of studies have been conducted to assess the predictive value of scoring system in preterm/low birth infants. several studies have seen association between neonatal mortality and the Apgar score in the infants [6]. The aim of this study was to determine the predictive value of the Apgar score, including, with regard to infants with low birth weight

MATERIALS AND METHODS:

A longitudinal study of was conducted in department of gynecology and obstetrics GSL Medical College and General hospital. The Universal sampling method was employed and every antenatal woman with age 15-19 years were registered in the department gynecology and obstetrics, GSL medical college, Rajahmundry of June 2013 to July 2014 were included as the study subjects. Inclusion and Exclusion criteria: All ANC subjects with in age of 15-19 year within 32weeks of their gestational

Corresponding Author:
M. Kiran Deedi, Department of Biochemistry, GSL medical college, Rajahmundry, AP, India.
E-mail: kirandeedigsl@yahoo.com

Received: 04.03.2015 **Revised:** 31.03.2015 **Accepted:** 27.04.2015

age were included as the study subjects. Those subjects with history of any congenital malformed child, twins, or with any preexisting co morbid illness such as Diabetes mellitus, Hypertension, HIV, Bronchial asthma, Heart disease, Cancer, etc., were excluded from the study. 238 pregnant women registered, at the time of registration, after the delivery of each individual weight of the baby was noted with standard weighing machine and Apgar score was noted. Statistical analysis was performed by using SPSS trail version 16.0 and p value <0.05 consider as statistically significant.

RESULTS

Table 1 showing the association of Apgar score with the birth weight of neonates. Totally there are115 individuals are in under low birth weight category.14 individuals are comes under poor apgar score category comprising about 12%with in total low birth weight category, 29 individual are in normal apgar score category comprising about 25.2%with in total low birth weight category, 72 individuals are in good apgar score category comprising about 62.6%with in total low birth weight category. Totally 123 individuals are in normal birth weight category. zero individuals are comes under poor apgar score category , one individuals are in normal apgar score category comprising about 8% with in total normal birth weight category, 122 individuals are in good apgar score category comprising about 99.2.%with in total normal birth weight category. Apgar score was statistically association with birth weight of the neonate (p=0.000)

Table 2, showing the association between Apgar score of neonates to age of mother. Totally there are 5 neonates individual born to 15 year mother age, 2(40%) in intermediate score and 3(60%) in normal score. 21 neonates individual born to 16year mother age,1(4.8%) in low score category 6 (28.6%) in intermediate score and 14(66.7%) in normal score. 26 neonates individual born to 17 year mother age, 6(23.1%) in low score category, 6 (23.1%) in intermediate score and 14 (53.8%) in normal score. 75 neonates individual born to 18 year mother age, 6(8%) in low score category, 5(6.7%) in intermediate score and 64 (85.3%) in normal score. 111 neonates individual born to 19 year mother age, 1 (0.9%) in low score category, 11(9.9%) in intermediate score and 99 (89.2%) in normal score. Out of 238 neonates individual born 14 (5.9%) in low score category, 30 (12.6%) in intermediate score and 194 (81.5%) in normal score. Apgar score was statistically highly significant association with age of the mother (p=0.001)

DISCUSSION

In this study, under low birth weight category there are nearly 25% individuals neonates are in intermediate score and more than 65% are in normal category and 12.2% in low apgarscore,but under normal weight category y nearly all are under normal score category. It shows that weight of neonate has direct relationship with Apgar score this study show same result study done by Rinomori etal[7].

Most studies consistently show that low Apgar scores, particularly when prolonged, are associated with greater risk of neonatal death and with subsequently diagnosed neurologic disability[8]. Very low-birth-weight infants were generally much more premature than bigger infants in every respect; muscle tone was much weaker, and respiratory/cardiac systems were less functional. This maybe partly the result of low levels of catecholamine release in these infants[9]

In this study out of 238 neonates born to teenage mothers, as age of mother progresses the apgar score of neonates increases, this correlates with the study done by Angela AndreiaFrança Gravena[10] states that Newborns born to adolescent mothers were1.44 times more likely to present with an Apgar index of lower than seven in the first five minutes. A research study observed an association of extremely low birth weight and low five-minute Apgar index in children born to women younger than 18 yearsold[11]. This index is a good indicator for long-term perinatal results; in addition, it is considered an important predictor for assessment of well-being and initial prognosis of the newborn.

CONCLUSION

Apgar score is a index of a newborn's condition immediately after birth, particularly in regarding recovery and in neonatal death. An Apgar score of less than 5 at 5 min is a useful predictor of neonatal mortality in infants with a birth weight between 1500 grams and 2499 grams.

ACKNOWLEDGEMENT

Authors acknowledge the immense help from the scholars whose articles are cited and included in reference of this manuscript. The authors are also grateful to authors/editors /publishers of all those articles, journals and books from where the literature for this article has been reviewed and discussed.

REFERENCES

1. Apgar V. Proposal for new method of evaluation of newborn infant. AnesthAnalg, 1953; 32: 260–7.
2. United Nations Children's Fund (UNICEF), The State of the World's Children, NewYork, NY,USA, 2005.
3. Apgar V. Evaluation of the newborn infant-second report. JAMA 1958; 168: 1985–8.

4. vandeRiet JE, Vandenbussche FP, LeCessie S, Keirse MJ. New born assessment and long-term adverse outcome: A systematic review. Am J Obstet Gynecol 1999; 180: 1024–9.
5. Chong DS, Karlberg J. Refining the Apgar score cut-off point for newborns at risk. Acta Paediatr 2004: 93: 53–9.
6. Casey BM, McIntire DD, Leveno KJ. The continuing value of the Apgar score for the assessment of newborn infants. New Eng J Med 2001; 344: 467–71.
7. Rintaro Mori, Jun Shiraishi, Hirokuni Negishi, Masanori Fujimura Predictive value of Apgar score in infants with very low birth weight; Acta Pædiatrica 2008 97, pp. 720–723.
8. VeraEhrenstein; Association of Apgar scores with deathand neurologic disability ClinicalEpidemiology 2009:1 45–53
9. Greenough A, Lagercrantz H, Pool J, Dahlin I.; Plasma catecholamine levels in preterm infants. Effect of birth asphyxia and Apgar score. Acta Paediatr Scan 1987; 76: 54–9.
10. Angela Andréia França Gravena, Meliana Gisleine de Paula,Sonia Silva Marcon, Maria Dalva Barros de Carvalho,Sandra Marisa Pelloso; Maternal age and factors associatedwith perinatal outcomes; Acta Paul Enferm. 2013; 26(2):130-5.
11. Chen XK, Wen WS, Fleming N, Demissie K, Rhoads GG, WalkerM. Teenage pregnancy and adverse birth outcomes: a large population based retrospective cohort study. Inter J Epidemiol. 2007;36: 368-73.

Table 1: Association of Apgar score with birth weight of the neonates

		APGAR SCORE			TOTAL	P value
		0-3	4-6	7-10		
Low birth weight	Count	14	29	72	115	0.000
	% within birth category	12.2%	25.2%	62.6%	100%	
Normal birth weight	Count	0	1	122	123	
	% within birth category	0%	8%	99.2%	100.0%	
Total	Count	14	30	194	238	
	% within birth category	5.9%	12.6%	81.5%	100.0%	

Table 2: Association between Apgar score of neonates to age of mother

Age of mother		Apgar score category			Total	p value
		0-3	4-6	7-10		
15	Count	0	2	3	5	0.001
	% within age	.0%	40.0%	60.0%	100.0%	
16	Count	1	6	14	21	
	% within age	4.8%	28.6%	66.7%	100.0%	
17	Count	6	6	14	26	
	% within age	23.1%	23.1%	53.8%	100.0%	
18	Count	6	5	64	75	
	% within age	8.0%	6.7%	85.3%	100.0%	
19	Count	1	11	99	111	
	% within age	.9%	9.9%	89.2%	100.0%	
TOTAL	Count	14	30	194	23	
	% within age	5.9%	12.6%	81.5%	100.0%	

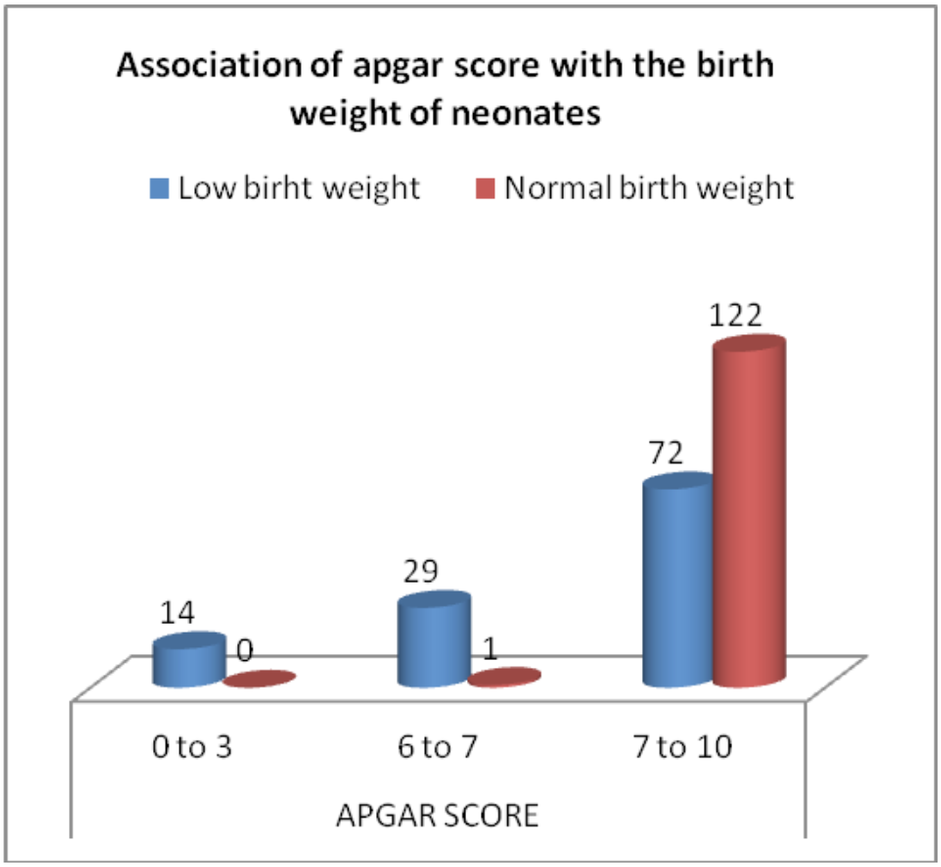

Figure 1

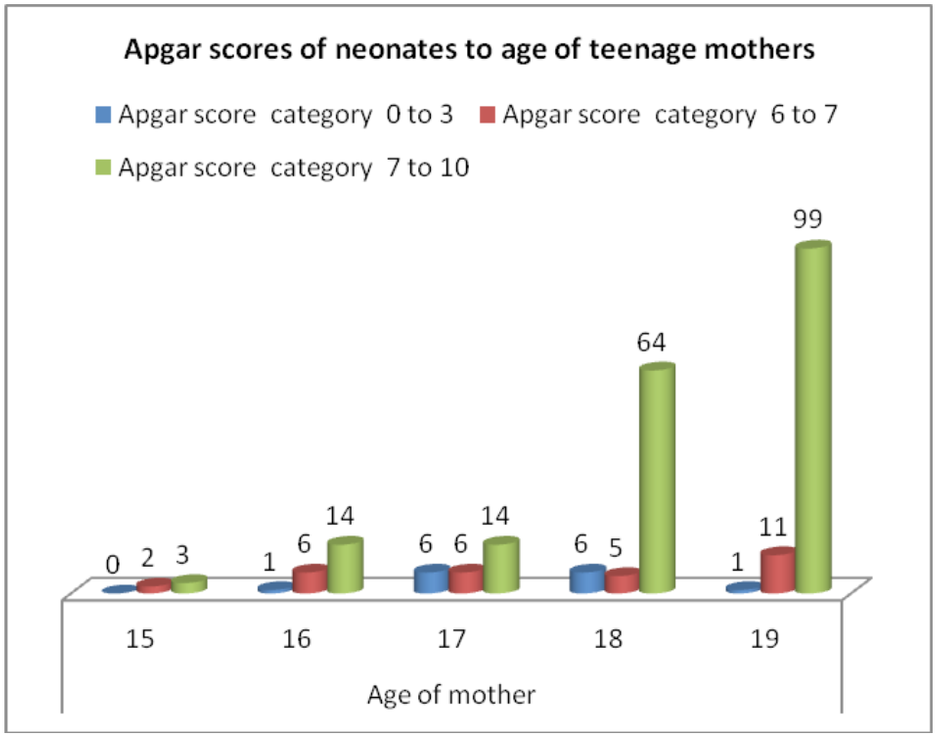

Figure 2