

RESEARCH ARTICLE

VALIDATION OF CRIB I SCORE IN PREDICTING MORTALITY OF VERY LOW BIRTH WEIGHT INFANTS

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Manuscript Info	Abstract
Manuscript History Received: 20 November 2022 Final Accepted: 24 December 2022 Published: January 2023	 Objective:To validate ClinicalRiskIndexforBabies(CRIBII)scoreinpredictingthemortalityofpre term,VLBWbabiesand tostudythecorrelationofriskfactorswithClinicalRiskIndexforBabies(CRI B II) score Methods:AProspective observational study was done in Preterm, VLBW neonates admitted in SNCU GGH Kurnool overa period of 1 year from November 2021 to December 2022 in 60 subjects. Result:Out of 60 VLBW neonates, 38 (63.33%) were level 1 score, 15 (25.00%) were level 2 score, 6 (10.00%) were level 3, 1 (1.67%) were level 4 score. Out of 60VLBW babies, 38 (63.33%) were survived and 22 (36.67%) were expired.There is a strong,negative correlation between CRIB II score and birth weight of infants with p 0.001 andr=- 0.79 Conclusion:The present study concludes that CRIB II score is effective in predicting the mortality in VLBW babies. Survival is more among babies in level 1 score.The more the CRIB II score, the less is the chance of survival.
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Introduction:-

The neonatal period is counted from birth up-to four weeks of life. Early neonatal period accounts to first 7 days or 168 hours of life, whereas late neonatal period extends from 7 days to the first four weeks of life. It is the time during which new born is exposed to high risk owing their transition from intrauterine to extrauterine life. Accordingly, this period of life has a high mortality rate. Prematurity is the major cause of morbidity in neonates especially very low birth weight (VLBW) neonates.

According to World Health Organization, the neonatal mortality rate is 28/1,000 live births in the world1. The WHO estimates that globally about 25 million LBW babies are born each year, consisting of 17% of all live births, nearly 95% of them in developing countries. Nearly 46% of all maternal deaths and 40% of all neonatal deaths occur during the first 24 hours after birth. Prematurity (35%), neonatal sepsis (33%), perinatal asphyxia (20%) and congenital malformations (9%) are the major causes of neonatal deaths.

India has NMR of 22/1000 live births2. NMR of Andhra Pradesh is 19.9% as per the NFHS survey 2019-2020. The infant mortality rate according to sample registration system for the year 2017 is 33 per 1,000 livebirths3,

Corresponding Author:- Dr. M. Uday Address:- PG men's Hostel, Government, General Hospital, Budhawarpet, Kurnool, Andhra Pradesh, India. 29.07/1000 live births in 2020. Neonatal deaths account for two-third of all infant deaths and 40% of under – 5 child deaths4. The millennium development goal 4 (reducing under- 5 mortality by two-thirds) could not be achieved without significant reduction in neonatal deaths.

In India, VLBW babies constitute 4% to 7% of live births and approximately 30% of neonatal deaths. VLBW infants account for more than 50% of neonatal deaths globally. VLBW mortality is the major contributor of infant mortality rate.

The main reason for increasing mortality and morbidity in VLBW neonates is due to their physiologic and metabolic immaturity. VLBW babies are susceptible to hypoglycaemia, jaundice, infection, respiratory distress, apnoea of prematurity (AOP), perinatal asphyxia, re-hospitalisation during their neonatal period. VLBW is one of the most serious challenges in Maternal and Child Health in developing countries. Nearly half of neonates who survive to hospital discharge have complications later which will affect the quality of their life. Despite improvement in the neonatal care and facilities, neonatal mortality remains high particularly in the developing countries.

The probability of death or survival in the Newborn Care Unit depends on perinatal factors and physiological conditions at the time of admission, which can be evaluated through scoring systems. Scoring systems include CRIB, CRIB II, SNAP, SNAPPE II etc.

CRIB II (Clinical Risk Index for Babies) is used in several countries to identify high-risk neonates and found to be more accurate. No such studies have been done previously in our setting, hence present study is done to apply CRIB II score to preterm, VLBW babies and identify the at-risk babies as early as possible and take necessary interventions to reduce the mortality. CRIB II score is validated in predicting mortality of preterm and VLBW babies.

Objective:-

1.To validate Clinical Risk Index for Babies (CRIB II) score in predicting the mortality of preterm, VLBW babies admitted to SNCU, GGH, Kurnool.

2.To study the correlation of risk factors with Clinical Risk Index for Babies (CRIB II) score.

Methods:-

Study design: Prospective observational study

Study Place: SNCU, GGH Kurnool.

Study sample:

Preterm, VLBW neonates admitted in SNCU GGH KNL.

Study duration:

November 2021 to December 2022

Sample Size:60

Results:-

 Table 1:- CRIBIIscoreofVLBWneonates.

Level	No. of infants	%
Level I	38	63.33%
LevelII	15	25.00%
LevelIII	6	10.00%
LevelIV	1	1.67%

38(63.33%)babiescomeunderlevel1,15(25.00%)tolevel2,6(10.00%)tolevel3,1(1.67%)tolevel4CRIBIIscore

 Table2: DistributionofVLBWneonates accordingtooutcome.

	No.of infants	%
Survived	38	63.33%
Expired	22	36.67%
Total	60	100.00%

Outof60VLBWneonates,38(63.33%)weresurvivedand22(36.67%)were expired

Table3: CorrelationbetweenmeanCRIBIIscoreandbirthweightofVLBWneonates.

Correlationbetween	Mean±SD	KarlPearson Correlation coefficients	Interpretation
CRIBIIscoreand birth weight	5.85±3.26 1135.97±125.15	r=-0.79 P=0.001***	Thereisasignificant, negative,strongcorrelationbetweenCRIB IIscoreandbirth weight ofinfants.It meansCRIBII score increases as birth weight decreases

***veryhighsignificantatp ≤ 0.001

Conclusion:-

The current study concludes that CRIB II score is effective in predicting the mortality in VLBW babies. Survival is more among babies in level 1 score. There is a strong negative correlation between CRIB II, birth weight, temperature at admission, base excess, gestational age. The more the CRIB II score, the less is the chance of survival.

The babies with higher CRIB II score have to be intervened early in order to decrease the mortality.

References:-

1.Safer MP. Neonatal and perinatal mortality. Geneva: World Health Org; 2007

2. Estimates generated by UN Inter- Agency Group for Child Mortality Estimation (UN IGME) in 2019.

3.http://censusindia.gov.in/vital-statistics/SRS-Bulletins/SRS-Bulletins-Rate-2017-May-2019.pdf

4.Care of the newborn-7th edition by Meharban Singh-page 2.

5. Manual of neonatal care -6th edition-John P.Cloherty, Eric Eichenwald. AnnR. Stark.page.43

6.Essential paediatrics-Ghai-7th edition: page 136-138

7.Hypoglycemia of the newborn: A review of literature. WHO/CHD/ 97.1; 1997:1-55.

8.South EastAsiaRegionalPerinatalDatabase www.newbornwhocc.org/pdf/nnpd_report_2002-03.

9.Silverman WC, Anderson DH. Controlled clinical trial on effects of water mist on obstructive respiratory signs, death rate and necropsy findings among premature infants. Pediatrics 1956; 17: 1-4.

10.Wood DW, Downes'JJ, Locks HI. A clinical score for the diagnosis of respiratory failure. Amer J Dis child 1972; 123: 227-9.