



ORIGINAL RESEARCH PAPER

Paediatrics

PREVALENCE AND OUTCOME OF NECROTIZING ENTEROCOLITIS (NEC) IN VERY LOW BIRTH WEIGHT BABIES (VLBW) IN A TERTIARY CARE HOSPITAL JHALAWAR

KEY WORDS: NEC, VLBW, ICU

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ABSTRACT

BACKGROUND- The main aim and objective of this study was to determine the prevalence and outcome of NEC in VLBW babies in a tertiary care hospital.

METHODS- Hospital based prospective observational study was conducted on 100 neonates <1500 gm admitted in neonatal ICU were included in the study.

RESULTS- Out of the selected 100 VLBW, about 8 patients developed NEC which is about 8.00% with mortality 37.5% in patients having NEC as outcome.

CONCLUSION-THE frequency of NEC in this study was 8.00% which is too high and is associated with 3 deaths. So, timely diagnosis and management of NEC should be done.

INTRODUCTION

Necrotizing enterocolitis is dened as intestinal inammation and injury. It is a multifactorial disease in which the functional immaturity of the intestine plays an important role in its pathogenesis.¹⁻² Its pathogenesis is frequently accompanied by intestinal ischemia, colonization of the intestine by pathogenic bacteria or excess protein substrate in intestinal lumen.³ The risk factor includes Pre term birth (SGA) status, hypoxic –ischemic events, early and rapid advancement of enteral feeds, formula feed and bacterial overgrowth.⁴ It is associated with increasing morbidity and mortality including growth and neuro development impairment. Incidence of NEC declines with increasing gestational age and low gestational age is main single risk factor for NEC.⁵

The main aim and objective of this study was to determine the prevalence and outcome of NEC in VLBW babies in a tertiary care hospital.

MATERIAL AND METHODS

Study Design: Hospital based prospective observational study

Study Place: Dept. of Pediatrics, Jhalawar Medical College and Hospital, Jhalawar.

Study Population:

All neonates <1500 gm admitted in neonatal ICU were included in the study.

Sample Size: Sample size of 100 patients required at 80% study power and alpha error 5%. R. Guillet et al observed that 7% prevalence rate of NEC in very low birth weight (VLBW) infants.

Sampling Method: Simple random sampling

Inclusion Criteria:

All neonates <1500 gm admitted in neonatal ICU were included in the study.

Exclusion Criteria:

Term babies, Major congenital anomaly, Cyanotic CHD.

Data Collection:

A detailed history was obtained from parents. A thorough physical examination as done. Anthropometric measurements such as weight, height, head circumference and mid arm circumference will be taken.

Data Analysis:

All data were analyzed on EPI-info statistical software. Qualitative data were expresse in the form of proportion. Quantitative data were expresse in mean ± SD Qualitative data were compare by Chi square test Unpaired t test were use to infer the difference in means. For significance, following at the level of “p” value was taken-

P > 0.05 = Not significant

P = 0.05 = Just significant

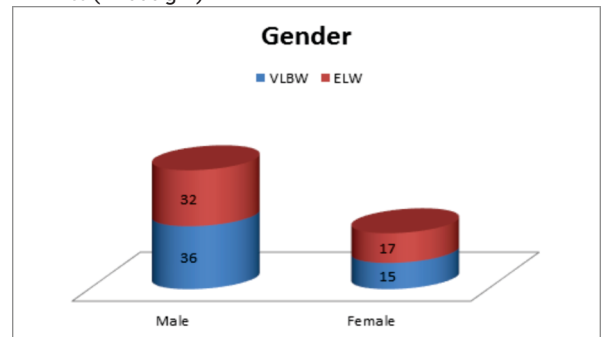
P < 0.05 = Significant

P < 0.001 = Highly significant.

RESULTS

A total number of 100 patients were included in the study that were preterm having gestational age <37 weeks and birth weight having <1500 gm. Patient divided into 2 groups:

1. VLBW (1000-1500gm)
2. ELBW (<1000 gm)



Out of 100 patients, 8 patients suffered from NEC. Out of these, 8 (8.00%) patients suffered from NEC with mortality rate of 37.50%.

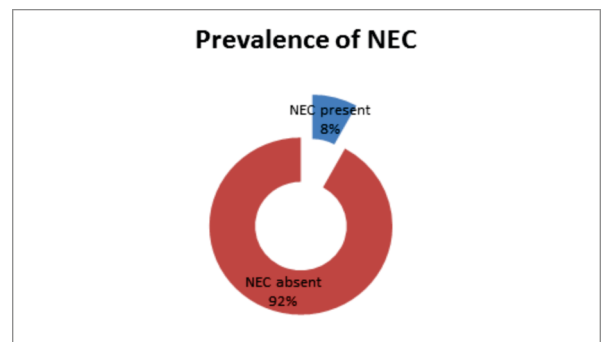


Table 1. Outcome Of NEC

NEC stage	Discharged	Expired	Referred	Total
Stage 1	1	0	0	1
Stage 2	1	2	1	4
Stage 3	1	1	1	3
Total	3	3	2	8

DISCUSSION

NEC continues to be one of the most devastating and unpredictable disease affecting premature infants. It remains a disease of high morbidity and mortality with adverse long term outcomes.

In this study, the frequency of NEC is 8.00% as out of the 1000 patients.

A study done by Martin and Walker et al⁶ showed prevalence of NEC is 7-14% of preterm neonates with birth weight in between 500 and 1500 g.

In one of the selected series by Lin and Coworker⁷ found the incidence of NEC ranging from 1-5% of all NICU admissions.

The incidence of NEC is about 9% in VLBW babies as reported by Fisher JG et al,⁸ which is almost equal to our study. Moreover, the etiology of NEC is not clearly elucidated but several approaches to prevent the initiation of NEC have been attempted.

CONCLUSION

The frequency of NEC in this study was 8.00% which is too high and is associated with 3 deaths. So, timely diagnosis and management of NEC should be done.

REFERENCES

1. Lin HC, Su BH, Chen AC, et al. Oral probiotics reduce the incidence and severity of necrotizing enterocolitis in very low birth weight infants. *Pediatrics* 2005;115:1-4.
2. Kitajima H, Sumida Y, Tanaka R, et al. Early administration of *Bifidobacterium breve* to preterm infants : randomized controlled trial. *Arch Dis Child fetal Neonatal Ed* 1997;76:F101-7.
3. La gamma EF, Browne LE. Feeding practices for infants weighing <1500gm at birth and the pathogenesis of necrotizing enterocolitis. *ClinPeriatol* 1994 ; 21:271 -306.
4. Neu J, Walker WA. Necrotizing enterocolitis. *N Engl J .Med* 2011;364:255-64
5. R. Guillet, B.J. Stoll, C.M. Cotten, M. Gantz, S. McDonald, W.K. Poole. Association of H2-blocker therapy and higher incidence of necrotizing enterocolitis in very low birth weight infants *Pediatrics*, 117 (2006), pp. e137-e142
6. ammatary response in Martin LR, Walker WA. Intestinal immune defences and the in necrotizing enterocolitis. *Semin fetal Neonatal Med.* 2006; 11:369-77.
7. Luigi G, Roberto B, Vivana C, Mario DC. Necrotizing enterocolitis in very low birth weight in Italy: Incidence and Non nutritional risk factors. *J. Pediatric Gastroenteral Nutr.* 2008 ; 47:206-10.
8. Fisher JG, Bairdain S, Sparks EA, Khan FA, Archer JM, Kenny M ,et al. Serious congenital heart disease & Necrotizing enterocolitis in very low birth weight infants. *JACS* 2015 ; 220(6): 1018 -26