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RESEARCH ARTICLE

THE DETERMINANTS OF SHORTER TIME TAKEN TO REACH FULL FEED AMONG EXTREMELY LOW BIRTH WEIGHT NEWBORNS ADMITTED TO LEVEL III NEONATAL INTENSIVE CARE UNIT OF GOVERNMENT HOSPITAL

Dr. Manesh Uddhav Kale[1], Dr. Isha Deshmukh[2], Dr. Aarti Kinikar[3], Dr. Chhaya Valvi[4] and Dr. Rahul Dawre[5]

1. Junior Resident -3 at Pediatric Department of BJGMC and Sassoon Hospital, Pune, Maharashtra.
2. Lecturer at the Pediatric Department of BJGMC and Sassoon Hospital, Pune, Maharashtra.
3. Professor and Head of Department of Pediatric, BJGMC and Sassoon Hospital, Pune, Maharashtra.
4. Associate Professor, Department of Pediatric, BJGMC and Sassoon Hospital, Pune, Maharashtra.
5. Assistant Professor, Department of Pediatric, BJGMC and Sassoon Hospital, Pune, Maharashtra.

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Key words:-
ELBW, NEC, VS, GA, NICU

Abstract

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Background: Although extremely low gestational age newborns (ELGANs) or extremely low birth weight (ELBW)newborns are born they have their third-trimester intrauterine life pertaining to development. During this time, one of the objectives of the NICU staff is to feed the newborn with enough nourishment to reach a growth velocity (GV) comparable to intrauterine GV. Early parenteral & enteral nutrition to ELBW infants during the first twenty-four hrs of life leads to a quick recovery of weight loss, enhanced overall weight growth, and earlier accomplishment of complete enteral feeding. Early & substantial protein administration has also been linked to increased weight gain & brain growth.

Aims/Objective: To identify determinants of shorter time taken to reach full feeds among ELBW admitted to level III NICU.

Method: It was a retrospective hospital-based study conducted from April 2022 to September 2022 and included 55 ELBW newborns admitted to NICU satisfying the WHO definition of ELBW and categorizedinto group I(<28wks), group II (>28 wks. till 31 wks.). Various determinants like ventilatory support, surfactant therapy, NEC, gestational age (GA), etc. are used for analysis.

Results: 55 ELBW analysed their mean gestational age (27±3.1) weeks, Range (25-31 weeks) Mean Birth weight (884±114 gram) Range (500-<1000 gm). There were 2 groups, Group 1 (< 28 weeks) included 28 ELBW who reached full feeding in 16.8±13.8 days; whereas 27 ELBW were included in Group 2 who reached full feeding in 13.07±8.5 days. Most of the determinates have P VALUE-0.0 except birth weight(P-0.89) and metabolic factor (P-0.14). Overall, all determinates have an impact the on duration to reach full feed in ELBW.

Conclusion: ELBW newborns who require minimal ventilatory support, no surfactant, less association with NEC, IVH, Sepsis, and

Corresponding Author:- Dr. Manesh Uddhav Kale
Address**:-** Junior Resident -3 at Pediatric Department of BJGMC and Sassoon Hospital, Pune, Maharashtra.

average gestation age above 28 weeks attained early full feed regain birth weight also decreases hospital stay.

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Ethics committee clearance submitted
Conflict of interest: None.

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Introduction:-

Time to reach full feeds has a significant effect on long-term neurodevelopmental outcomes in newborns [1]. Physiologic principles favour large-volume and less frequent feeding schedules However, ELBW new-born across the world were fed more frequently with a smaller number of feeds fearing the risk of hypoglycaemia, Apnea, and feed intolerance, as well as necrotizing enterocolitis (NEC) [2,3]

The majority of Extremely low gestation age newborns (ELGANs, babies born before the twenty-eight week of gestation) & ELBW stay in a neonatal intensive care unit (NICU) for at least 9-12 weeks which is equivalent to their 3rd trimester period During this time, one of the NICU team's priorities is to deliver nutrients to the newborns for them to acquire a growth velocity (GV) equivalent to intrauterine (GV). The majority of ELGANS & ELBW newbornsgain lesser weight than 3rd-trimester fetuses in utero. Further, these babies also have extrauterine growth limitations as a consequence of their nutrient deficiency and environmental stress (weight below the Tenth centile for a postmenstrual age) [4-9]. This abnormal development generally continues throughout early infancy [10-11].

Early parenteral & enteral nutrition administered to ELBW newborns during the first twenty-four hoursof birth leads to quick weight restoration, increased overall weight growth, & earlier attainment of complete enteral feedings [12]. early and protein-rich supply has also been linked to increased weight gain & brain growth.[13].

In this study, we examine the impact of various determinants like gestational age (GA), birth weight, a requirement of surfactant therapy, ventilation support, NEC, Metabolic factors like hyper and hypoglycaemia, sepsis, intraventricular hemorrhage (IVH), starting of human donor milk and expressed breast milk on early achievements of full feed in ELBW admitted in level 3 NICU.

Aim/Objective:-

To identify determinants of shorter time taken to reach full feeds among ELBW newbornsadmitted to level III NICU.

Method/Material:-

This retro-respective hospital-based study is designed to identify the various determinants or factor which has an important role in the early achievements of full feed in ELBW newborns. From April 2022 to September 2022 at a level III NICU in a Government hospital. The institute's ethical committee authorized the research.

Inclusion criteria:

(I) weighing less than 1000 gm or ELBW who have been admitted to the Neonatal intensive care unit within 24 hours after birth, and whofully fill the definition of ELBW by WHO.
(ii) Complete oral feeding and stable vital sign upon discharge.

Exclusion Criteria:

Were the presence of
(I)Congenital anomalies/malformations that are fatal,
(II) Gastrointestinal or other congenital abnormalities that impair gastrointestinal motility or functions (intestinal atresia, meconium plugs syndromes & Hirschsprung disease and neuronal intestinal dysplasia, & congenital diaphragmatic hernia).
Based on gestational age, the newborns were separated into 2 groups:
I) <28 weeks ELBW newborns.
II) >28 weeks ELBW newborns.

Here 55 newborns are enrolled in a study out of which only 40 neonates reached full feed and the remaining 15 of which 11 are death and 4 DAMA.

During the study period, various determinants or factors like GA, birth weight, IVH, NEC, surfactant therapy, ventilatory requirement, metabolic factor-hypo, and hyperglycaemia), starting of human donor milk and expressed breast milk. This determinate identified and its role in early or a shortening time required to get full feed in ELBW are studied.

Outcome Measures:-

The key outcome was the shorter duration (in days) taken to reach full feed.
Secondary outcomes had been time (in days) to achieve birth weight and time (in a day) to discharge or hospital stay. The outcome measures are studied and affected by various determinates which are already mentioned above.

Feeding Protocol:
Feeding was started when newborns were hemodynamically stable and no other contraindication for feeding was present. Each newborn was given a precise consistent feeding regimen that specified the quantity and time of meals. The beginning feed volume was 10 mL/kg/day, & it was subsequently increased by 20 mL to 30 mL/kg/day until 150 mL/kg/day (full feeds) were attained. The total recommended feeds for a day are split into eight 3 hourly portions. The feeds were delivered via an orogastric tube. For first feed milk of choice was expressed breast milk (EBM) if not available, donor human milk will be used (DHM)is preferred, which is available from hospital human milk bank. Time taken by a neonate (in days) to tolerate a feeding volume of 150 mL for at least 48 hours was recorded as a time to reach full feeds.

The mother's stated gestational age (GA), If the discrepancy between self-reported GA & GA computed using the new Ballard scoring method is significant. When there was considerable feed intolerance, feeding was discontinued and the newborns was evaluated for NEC. clinically and radiographically. Weight of the newborns was recorded using an electronic weighing machine, with an accuracy of ± 1 g. Hypoglycaemia has been described as blood glucose level of less than 40 mg/dL. Blood sugar level was monitored as per the protocol. Blood glucose level was monitored from the time of introduction of feeds, as follows: just before the introduction of the first feed, 6 hourly for 48 hours, and then 24 hourly till full feeds were reached. Screening for intracranial bleed was performed using ultrasonography within 1-2 days of admission, weekly if any significant, and day 28 of postnatal age, but earlier when clinically indicated.

Sample Size And Analysis:
Study duration start from April 2022 to September 2022 for 6-month researcher collected the data from hospital. In this case our sample size is 55. Categorical variables were compared using the Chi-square test. Data was analysed using IBM SPSS version 23 software. P value < 0.05 was considered significant**.**

Table 1:- Different Variables /Determinates And Their Subgroup Values Are Expressed In Number, Range And Percentage:

Variables	Sub-Variables	<28 WKS/ GROUP1 N=27	>28 WKS/ GROUP2 N=28	Total N=55
SURFACTANT	Yes	25(89.29%)	10(37.04%)	35(63.64%)
	No	3(10.71%)	17(62.96%)	20(36.36%)
ASSOCIATED WITH NEC	Yes	17(60.71%)	5(18.52%)	22(40%)
	No	11(39.29%)	22(81.48%)	33(60%)
ASSOCITED WITH NORMAL/ HYPER /HYPOGLYCEMIA	NORMAL	12(42.86%)	21(77.78%)	33(60%)
	HYPER	8(28.57%)	3(11.11%)	11(20%)
	HYPOGLYCEMIA	8(28.57%)	3(11.11%)	11(20%)
ASSOCITAION WITH IVH GMH	0	2(7.14%)	17(62.96%)	19(34.55%)
	1	9(32.14%)	3(11.11%)	12(21.82%)

	2	10(35.71%)	2(7.41%)	12(21.82%)
	3	4(14.29%)	4(14.81%)	8(14.55%)
	4	3(10.71%)	1(3.7%)	4(7.27%)
VOLUME STARTED FIRST FEED IN ML	0	2(7.14%)	0(0%)	2(3.64%)
	1ML	19(67.86%)	8(29.63%)	27(49.09%)
	2ML	7(25%)	14(51.85%)	21(38.18%)
	3ML	0(0%)	5(18.52%)	5(9.09%)
ON DAY OF LIFE SATRTED DONAR HUMANMILK	0	3(10.71%)	13(48.15%)	16(29.09%)
	1	1(3.57%)	2(7.41%)	3(5.45%)
	2	9(32.14%)	6(22.22%)	15(27.27%)
	3	9(32.14%)	3(11.11%)	12(21.82%)
	4	3(10.71%)	2(7.41%)	5(9.09%)
	5	3(10.71%)	1(3.7%)	4(7.27%)
EBM STARTED ON DAY OF LIFE	0	7(25%)	5(18.5%)	12(21.8%)
	1 to 3	5(17.9%)	21(77.8%)	26(47.3%)
	5 to 7	11(39.3%)	1(3.7%)	12(21.8%)
	8 to 10	4(14.3%)	27(100%)	4(7.3%)
	11 to 13	1(3.6%)	0	1(1.8%)
WEIGHT ON DISCHARGE IN GRAM	0	10(35.71%)	3(11.11%)	13(23.64%)
	800 to 1000	0(0%)	3(11.11%)	3(5.45%)
	1001 to 1200	0(0%)	0(0%)	0(0%)
	1201 to 1500	15(53.57%)	19(70.37%)	34(61.82%)
	1501 to 1700	2(7.14%)	0(0%)	2(3.64%)
	1701 to 1900	0(0%)	2(7.41%)	2(3.64%)
	1901 to 2100	0(0%)	0(0%)	0(0%)
	More than 2100	1(3.57%)	0(0%)	1(1.82%)

Table 2:- Different Variables /Determinates And Their Subgroup Values Are Expressed In Number, Range And Percentage.

Variables	**Sub-Variables**	**<28 WKS/ GROUP1 N=27**	**>28 WKS N=28**	**Total N=55**
GENDER	Male	19(67.86%)	16(59.26%)	35(63.64%)
	Female	9(32.14%)	10(37.04%)	19(34.55%)
	Other	0(0%)	1(3.7%)	1(1.82%)
BIRTH WEIGHT GRAM	501-600	1(3.57%)	0(0%)	1(1.82%)
	601-700	6(21.43%)	0(0%)	6(10.91%)
	701-800	5(17.86%)	1(3.7%)	6(10.91%)
	801-900	10(35.71%)	6(22.22%)	16(29.09%)
	901-1000	6(21.43%)	20(74.07%)	26(47.27%)
INAVNSIVE VENTILATORY SUPPORT IN DAYS	0 to 10 Days	9(32.14%)	24(88.89%)	33(60%)
	11 to 20 Days	16(57.14%)	3(11.11%)	19(34.55%)
	21 to 30 Days	3(10.71%)	0(0%)	3(5.45%)
NON-INVASIVE VENTILATION SUPPORT IN DAYS	0 to 10 Days	13(46.43%)	16(59.26%)	29(52.73%)
	11 to 20 Days	13(46.43%)	11(40.74%)	24(43.64%)

	21 to 30 Days	2(7.14%)	0(0%)	2(3.64%)
ACHIVEMENTS OF FULL FFED ON DAY OF LIFE	0	10(35.71%)	6(22.22%)	16(29.09%)
	10 to 20	0(0%)	2(7.41%)	2(3.64%)
	21 to 30	4(14.29%)	15(55.56%)	19(34.55%)
	31 to 40	9(32.14%)	4(14.81%)	13(23.64%)
	More than 40	5(17.86%)	0(0%)	5(9.09%)
SEPSIS	Yes	9(32.14%)	4(14.81%)	13(23.64%)
	No	19(67.86%)	23(85.19%)	42(76.36%)
ACHIVEMENTS OF BIRTH WEIGHT ON DOL	not achieved	9(32.14%)	6(22.22%)	15(27.27%)
	10 to 20	2(7.14%)	16(59.26%)	18(32.73%)
	21 to 30	11(39.29%)	5(18.52%)	16(29.09%)
	31 to 40	5(17.86%)	0(0%)	5(9.09%)
	More than 40	1(3.57%)	0(0%)	1(1.82%)
DURATION OF HOSPITAL STAY IN DAY	1 to 20	6(21.43%)	4(14.81%)	10(18.18%)
	21 to 40	4(14.29%)	17(62.96%)	21(38.18%)
	41 to 60	11(39.29%)	6(22.22%)	17(30.91%)
	61 to 80	4(14.29%)	0(0%)	4(7.27%)
	More than 80	3(10.71%)	0(0%)	3(5.45%)
OUTCOME	DISCHARGE	18(64.29%)	22(81.48%)	40(72.73%)
	DAMA	1(3.57%)	3(11.11%)	4(7.27%)
	DEATH	9(32.14%)	2(7.41%)	11(20%)

Table 3:- Mean, Standard Deviation And P Values Of Different Variables Of Group 1 And Group 2. (Values are expressed as mean ± SD).

VARIABLES/DETERMINANTS	Group 1 N=28	Group 2 N=27	Total Group N=55	Chi-Square	
	Mean (Std. Deviation)	**Mean (Std. Deviation)**	**Mean (Std. Deviation)**	**Chi-Square**	**p value**
GENDER	1.32 ± 0.476	1.44 ± 0.577	1.38 ± 0.53	31.56	0.00
BIRTH WEIGHT GRAM	820.21 ± 121.916	950.74 ± 51.882	884.29 ± 114.3	0.02	0.89
SURFACTANT	1.11 ± 0.315	1.63 ± 0.492	1.36 ± 0.49	36.36	0.00
ON VENTILATORY SUPPORT DAYS	12.57 ± 7.015	3.67 ± 5.54	8.2 ± 7.72	4.09	0.04
ON BCPAP SUPPORT DAYS	11.43 ± 7	9.15 ± 4.753	10.31 ± 6.06	24.58	0.00
ASSOCIATED WITH NEC	1.39 ± 0.497	1.81 ± 0.396	1.6 ± 0.49	22.51	0.00
ASSOCIATED WITH NORMAL HYPER HYPOGLYCEMIA	0.86 ± 0.848	0.33 ± 0.679	0.6 ± 0.81	2.20	0.14
ASSOCIATION WITH IVH GMH	1.89 ± 1.1	0.85 ± 1.292	1.38 ± 1.3	17.60	0.00
VOLUME STARTED FIRST FEED	1.18 ± 0.548	1.89 ± 0.698	1.53 ± 0.72	23.38	0.00
ON DAY OF LIFE SATRTED DONAR HUMANMILK	2.61 ± 1.37	1.33 ± 1.544	1.98 ± 1.58	32.20	0.00
EBM STARTED ON DAY OF LIFE	1.53 ± 1.13	0.85 ± 0.456	1.2 ± 0.930	34.64	0.00
ACHIVEMENTS OF FULL FFED ON DAY OF LIFE	16.82 ± 13.889	13.07 ± 8.508	14.98 ± 11.61	19.09	0.00

Sepsis	1.68 ± 0.476	1.85 ± 0.362	1.76 ± 0.43	15.29	0.00
ACHIVEMENTS OF BIRTH WEIGHT ON DOL	27.89 ± 6.091	17.86 ± 3.468	22.63 ± 7	20.55	0.00
DURATION OF HOSPITAL STAY	45.43 ± 25.134	31.96 ± 12.605	38.82 ± 20.94	22.73	0.00
WEIGHT ON DISCHARGE IN GRAM	1502.22 ± 200.926	1376.25 ± 209.779	1430.24 ± 213.09	91.51	0.00
OUTCOME	1.68 ± 0.945	1.26 ± 0.594	1.47 ± 0.81	39.75	0.00

Results:-

1. 55 ELBW analysed their mean gestational age (27±3.1) weeks, Range (25-31 weeks) Mean Birth weight (884±114 gram) Range (500-<1000 gm). There were 2 groups, Group 1 (<28weeks) including 28 ELBW who reached full feeding in 16.8±13.8 days; whereas 27 ELBW were included in Group 2(>28 wks) who reached full feed in 13.07±8.5 days.
2. The ratio of Male: Female for group 1(67.8% vs 32.1%) & group 2 (59.2% vs37.04%) and other (Ambigious-3.2%). For total male; female: other (63.64% vs 34.55% vs 3.2%) P -0.0
3. Surfactant therapy required ratio (89.29%vs 37.04%), P-0.0
4. Group -1 required invasive ventilation for 12.5±7 days and group 2 -3.6±5.5 days its P -0.4; non-invasive ventilation for group -1 is 11.4±7 days, group-2 is 9.15±4.1 days, its P -0.0.
5. Ratio of NEC association is (60.71%vs 18.52% P-0.0).
6. Ratio of Metabolic parameters association (normoglycemia-42.86%vs77.18%, Hypoglycemia-28.5%vs11.11%, Hyperglycemia-28.5%vs11.11%) P-0.14 which is not significant.
7. Association with IVH (grade1-32.14%vs 11.11%; grade2-35.7%vs7.41%; grade 3- 14.29%vs14.8%; grade 4-10.71%vs7.42%) Normal-7.19% vs62.69%. P-0.0
8. First feed volume started Ratio-(1cc-67.8vs29.6%) ;(2cc-25-51.85%) ;(3cc-started only for 18.5% in group 2, P-0.0
9. Ratio of DOL (Day of Life) DHM started on DOL 1-3.57%Vs 7.4%) DOL2(32.1vs22.22%) DOL3(32.14vs11.11%) DOL4-(10.7vs7.41%) DOL5-(10.7vs3.7%) for group 1DOL Human Milk started is 2.61±1.3 &for group2-1.33±1.5 days.
10. The EBM started on Day of Life in Group 1 is 1.53±1.3 days, Group-2 is 0.85±0.456 days P-0.0
11. Achievement of Birthweight on Day of Life in group 1-27.8±6 days & group 2 is 17.8±3.4; P-0.0
12. Ratio of sepsis Culture Positive: Negative (32.1vs14.8%) P-0.0
13. Duration of Hospital stay for group 1-45.43±25.1 days; group 2-17.8±3.4 days. P-0.0.
14. Weight on Discharge for group 1 is 1502±200 grams & Group 2is 1376.2±209, P-0.0.
15. Ratio of outcome in case of Discharge to group 1: group 2 (64.2vs81.48 %) DAMA (3.57vs11.11%) & Death(32.14vs7.41%), P-0.0.
16. Overall analysis of 55 ELBW out of which 40 (72.2%) reaches to full feed within 14.98±11.61 days (means), 4 (7.27%) neonates took DAMA and 11(20%) died before reaching full feed. The male: female: other ratio is 35:19:1(63.4%vs34.55%vs1.82%).The mean birth weight is 884±114.3 grams. The required days of invasive and non-invasive ventilation is means is 8.27±7.72 days and 10.31±6.06 days.Surfactant required for 35(63.63%) neonates, sepsis association is 13 (23.64%), NEC non-surgical is 22 (40%) neonates. Metabolic predictors are 11(20%) with hyperglycaemia and hypoglycaemia. Association with IVH 55 ELBW out of which 19 had normal (34.55%), grade I is 12 (21.8%), grade II IS 12 (21.8%), grade III is 8 (14.5%), grade IV is 4 (7,27%). first feed volume started mean is 1.53±0.72 cc. On DOL DHM started mean day is 1.98±1.58 days and for EBM is 1.2±0.93 days. Mean hospital stay days overall is 38.8±20.94 days. Mean discharge weight is 1430±213 gram.There was significant difference in time (in days) to reach full feeds in the <28 weeks versus >28weeks groups (16.8±13.8 days vs 13.07±8.5 days; P = 0.0) due to <28 weeks required prolong ventilation, more surfactant therapy and more association with IVH, sepsis, NEC and low volume of feed started as compare to >28 weeks group so its directly impact on day to achievements of birth weight and hospital stay increase in<28 weeks than >28 weeks group ELBW.

Discussion:-

This was a randomized, well-designed study with an adequate sample size for the main outcome. The research included a total of 55 infants throughout the course of its duration. Comparatively, 49.1% of the cases in our research population are in the age range of less than 28 weeks' babies (n = 27), whereas 50.9% of the cases in our study population are in the age group of greater than 28 weeks' babies (n = 28). Babies that are born very prematurely or with extremely low birth weight are delivered in the late stages of the second and third trimesters of pregnancy, which is a crucial period for the development of the brain by Barbara E Cormack et al study[14]. There is a broad range of diversity in the feeding methods of ELBW preterm, with tradition and available resources often serving as guiding factors by Moses Oringo Lango et al [15]. Within the scope of our research, we did not have any participant withdrawals. In our investigation, the incidence of hypoglycaemia was modest, with three cases found in each group. This might be due to the fact that the neonates who were randomly assigned in our research were generally stable, and they were merely monitored for the occurrence of hypoglycaemia. Furthermore, group 2 had a smaller mean standard deviation. The incidence of ventilatory support days was similarly low, coming in at 3.67 + 5.54 for those aged greater than 28 weeks and 12.57 + 7.015 for those aged lesser than 28 weeks old. The most prevalent consequence among ELBW and VLBW infants was Neonatal Sepsis (23.64%), followed by Hypoglycaemia (20%).

Our findings are consistent with those of previous randomized clinical investigations by Morgan, Jessie, et al. that examined early progressive vs delayed feeding in moderately preterm new-borns [16]. In addition, an recently updated meta-analysis conducted by Oddie SJ et al on >500 very preterm babies randomly allocated to fast (30 and 35 mL kg1 d1) or slow progressive (15–20 mL kg1 d1) feeding did not indicate that slow progressive feeding reduced the incidence of NEC [17]. In a meta-analysis which include over 1,000 moderately preterm infants randomly assigned to early progressive feeding, Morgan J. et [18] al. found that early progressive feeding reduces the time required to attain full enteral feeding. Its severity of a critical illness was recognized as the cause of all but one case of NEC, and the overall risk of NEC reported in this research was comparable to the baseline risk of NEC discovered in extremely preterm neonates admitted to our unit who were in group 2.

Study by Cuestas, Eduardo et al The findings of the research did not corroborate one another since there was a much higher incidence of IVH in men, despite the fact that they were given a significantly greater quantity of indomethacin than females 19].

Study analysis by Whitfield, M et al In this particular instance, we are more likely to come across male instances than female ones. In addition, there are not many data that compare the differences in outcome based on gender. Despite the fact that it is known that boys have Neurodevelopmental issues are more prevalent in boys across all birthweight levels. this is true Neurodevelopmental disorders is more frequent in males regardless of their birthweight. Within the ELBW group, a comparison of functional outcomes categories by gender males had lower results than girls [20]. Barbara E Cormack et al study The most at risk seem to be infants who having intrauterine growth restriction, were born with a low birth weight, & are small for its gestational age and who are male [14].

Tewoldie MT, et al study includes Necrotizing enterocolitis, often known as NEC, is a condition that is taken into consideration if feeding intolerance deteriorates in severity. This can be backed by shaky vital signs in addition to or in place of abnormal abdominal radiography [21]. Khasawneh W et al study include Postnatal morbidities such as extended ventilatory support, chronic lung disease, sepsis, & necrotizing enterocolitis (NEC) correspond with increased incidence of EUGR in preterm newborns, especially ELBW infants [22].

Mean ± SD birth weight was 820.21 ± 121.916 gram in group 1 and 950.74 ± 51.882 gram found in group 2. Moses Oringo Lango et al [15] the mean (SD) gestation of the cohort was 28.5 (1.6) weeks, and the median (range) birth weight was 875 (640–995) g. The overall and in research that was quite comparable to this one, the median gestational age was determined to be 26 weeks. Salas AA et al study demonstrates that early progressive feeding is not only feasible in critically ill, extremely preterm infants, but that it is also effective in increasing the number of days that the infant receives full enteral nutrition, reducing the number of days that the infant receives PN, and reducing the number of days that the infant receives central venous access. It is still unknown Whether early progressive feeding rises a risk of necrotizing enterocolitis through extremely premature infants born at a limits of viability is unknown; moreover, bigger studies of feeding practices designed to promote early progression of feeding might reduce a risk of postnatal growth restriction & culture-proven sepsis in all extremely premature infants [23].

Study by Moses Oringo Lango et al [15] Early enteral feeding of extremely low birth weight preterm infants with breast milk and concurrent administration of intravenous dextrose enriched to electrolytes until an establishment of full enteral feed was associated with a mean growth velocity comparable to that of neonates who receive aggressive early parenteral nutrition with an early establishment of enteral feeds. This is discovered in an environment with little resources. Early enteral feeding of very low birth weight preterm infants using breast milk & concurrent intravenous injection. There is a need for research to assess the viability and advantages of more fast progression of enteral feeding in ELBW preterm. These studies need to be done as soon as possible. It is possible that this may reduce the early nutritional deficit even more and increase the rate of growth in this particular group of newborns.

Conclusion:-

We conclude that the gestational age and ventilatory support is important determinates to take shorter time to reach full feed in ELBW neonates. Also prolonged ventilation, Surfactant therapy, neonates which prone to NEC, IVH, any infection or sepsis take more time to reach full feed so directly its increases hospital stay of that neonate and took more time to gain birth weight. The ELBW whose started early feed with EBM had taken shorter time period to reach the full feed.

Limitations:

It is possible to accept that the current research has a number of limitations. To begin, the findings need to be validated over a larger sample size, and the research approach is randomized. There is the limited size of the sample, we were unable to concentrate on newborns, who are considered to be a group at high risk. Therefore, more research that takes into consideration all of these aspects is strongly encouraged. Only in the research, new-borns with extremely low birth weight (ELBW) weighing less than 1000 gram were enrolled. The research did not include very low birth weight or normal weight infants. Across investigations, the relationship among birth weight & growth was seen. shown to be rather stable.

Key Messages:

What Is Already Known:

ELBW neonates takes more time to reach full feed due to various factor during the NICU course.

What This Study Adds:

ELBW required minimal days ventilation, not required surfactant therapy, not associated with NEC, GA is >28 weeks, not associated with any IVH, as early starting of feeding with EBM and doesn’t have any infection took a shorter time to reach full feed so directly whose achieve birth weight earlier and decreases hospital stay so mortality and morbidity rate also decreases.

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Competing interests:

None.

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