

A PROSPECTIVE OBSERVATIONAL STUDY TO ASSESS FACTORS ASSOCIATED WITH NEONATAL JAUNDICE AND ITS MANAGEMENT IN A TERTIARY CARE TEACHING HOSPITAL

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ABSTRACT

Neonatal jaundice is a condition resulting from immature liver function, preventing the efficient removal of bilirubin. This study assesses factors associated with neonatal jaundice and its management. The study was conducted over six months at a tertiary care hospital. A total of 120 patients were analyzed, with neonatal jaundice prevalence higher in males. Phototherapy and breastfeeding were primary management approaches. Early identification and management play a crucial role in improving neonatal outcomes.

KEYWORDS: Neonatal jaundice, APGAR score, Phototherapy, TSB, NVD.

INTRODUCTION

Neonatal jaundice is a prevalent condition characterized by the yellowish discoloration of the skin and sclera in newborns due to elevated bilirubin levels. It affects approximately 60% of term and 80% of preterm neonates globally.^[1,2] The underlying causes of neonatal jaundice vary, including physiological factors, hemolytic diseases, ABO and Rh incompatibilities, and hepatic immaturity.^[3,4] In most cases, neonatal jaundice is self-limiting; however, severe cases require timely intervention to prevent complications such as kernicterus and neurological damage.^[5,6] The primary treatments include phototherapy and exchange transfusion in extreme cases.^[7,8] This study aims to assess the prevalence, associated risk factors, and management strategies of neonatal jaundice in a tertiary care hospital setting.^[9,10]

MATERIALS AND METHODS

A prospective observational study was conducted over a six-month period at Andhra Pradesh Vaidhya Vidhana Parishad Hospital, District Government Hospital, Proddatur. Data collection was performed using a structured proforma, which included demographic details, clinical parameters, treatment modalities, and outcomes. A total of 120 neonates diagnosed with jaundice were included in the study. The inclusion criteria were newborns with clinical signs of jaundice and laboratory-confirmed hyperbilirubinemia. Exclusion criteria included neonates with congenital liver disorders and those receiving prior phototherapy before hospital admission. Statistical analysis was conducted using SPSS software.

RESULTS

The study analyzed 120 neonates diagnosed with jaundice, revealing a higher prevalence in males (52.5%) and those born at 38 weeks gestation (52.5%). Normal vaginal delivery (58.33%) was the most common mode of birth, with spontaneous labor occurring in 63.33% of cases. Jaundice primarily appeared on the abdomen (55%), and phototherapy was the main treatment, with 87.5% receiving single-surface phototherapy. ABO incompatibility was a significant factor, as 40.83% of neonates had a B+ blood group, while 35% of mothers had O+. The majority (50.83%) had total serum bilirubin levels between 11-13 mg/dL. Early screening and phototherapy remain crucial in managing neonatal jaundice and preventing complications.

1. Gestational age of Child

Table No.1:- Gestational Age of child.

S. NO	GESTATIONAL AGE	NO. OF PATIENTS	PERCENTAGE
1.	<37WEEKS	14	11.66%
2.	37WEEKS	13	10.83%
3.	38WEEKS	63	52.5%
4.	39WEEKS	11	9.16%
5.	>39WEEKS	19	15.83%
	TOTAL	120	100%

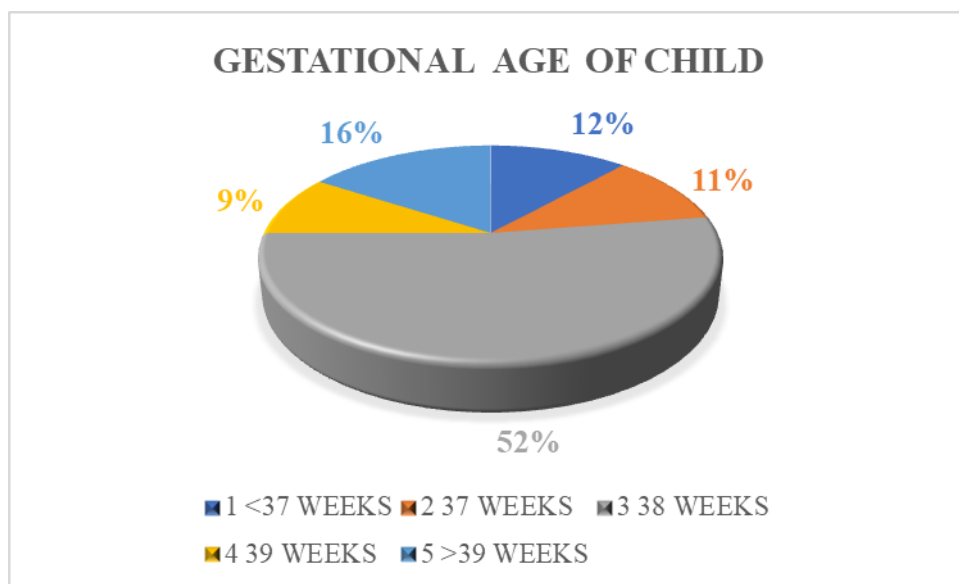


Fig No. 1:- Gestational age of child.

2. Gender

Table No. 2:- Gender.

S. NO	GENDER	NO. OF PATIENTS	PERCENTAGE
1.	MALES	63	52.5%
2.	FEMALES	57	47.5%
	TOTAL	120	100%

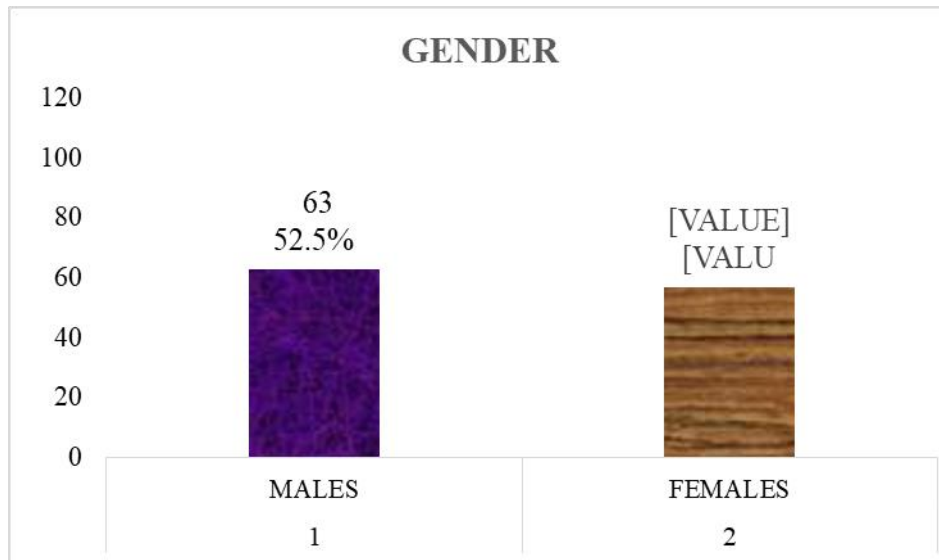


Fig No. 2:- Gender.

3. Mode of Delivery

Table No. 3:- Mode of Delivery.

S. NO	MODE OF DELIVERY	NO. OF PATIENTS	PERCENTAGE
1.	NVD	70	58.33%
2.	LSCS	50	41.66%
	TOTAL	120	100%

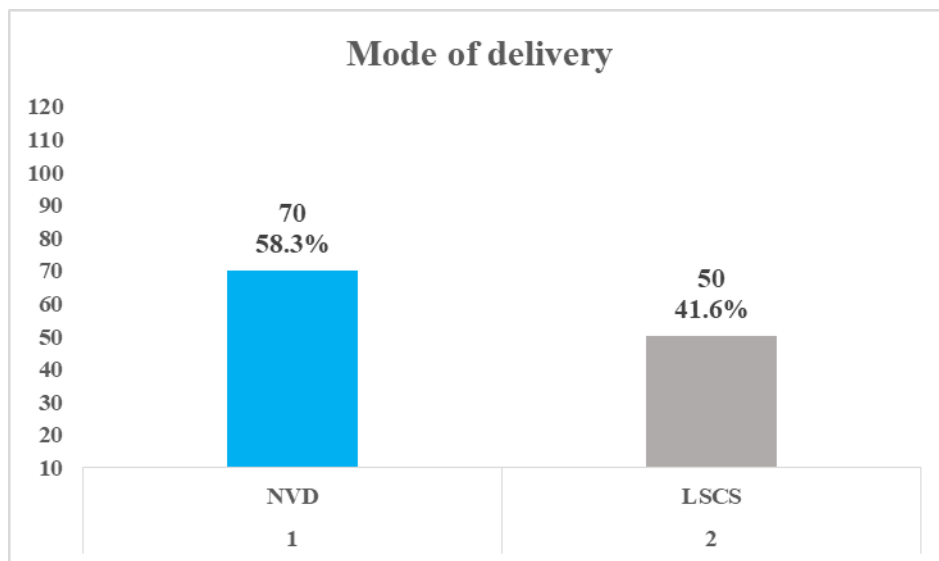


Fig No. 3:- Mode of Delivery.

4. Presentation of Delivery

Table No. 4:- Presentation of Delivery.

S. NO	PRESENTATION OF DELIVERY	NO. OF PATIENTS	PERCENTAGE
1.	VERTEX	118	98.33%
2.	BREECH	2	1.66%
	Total	120	100%

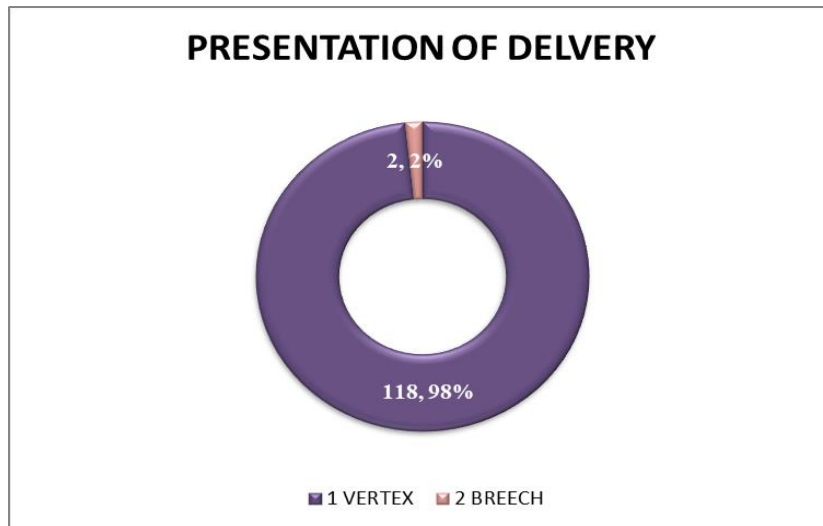


Fig No. 4:- Presentation of Delivery.

5. Labour

Table No. 5: - Labour.

S. NO	LABOUR	NO. OF PATIENTS	PERCENTAGE
1.	Spontaneous	76	63.33%
2.	Induced	44	36.66%
	Total	120	100%

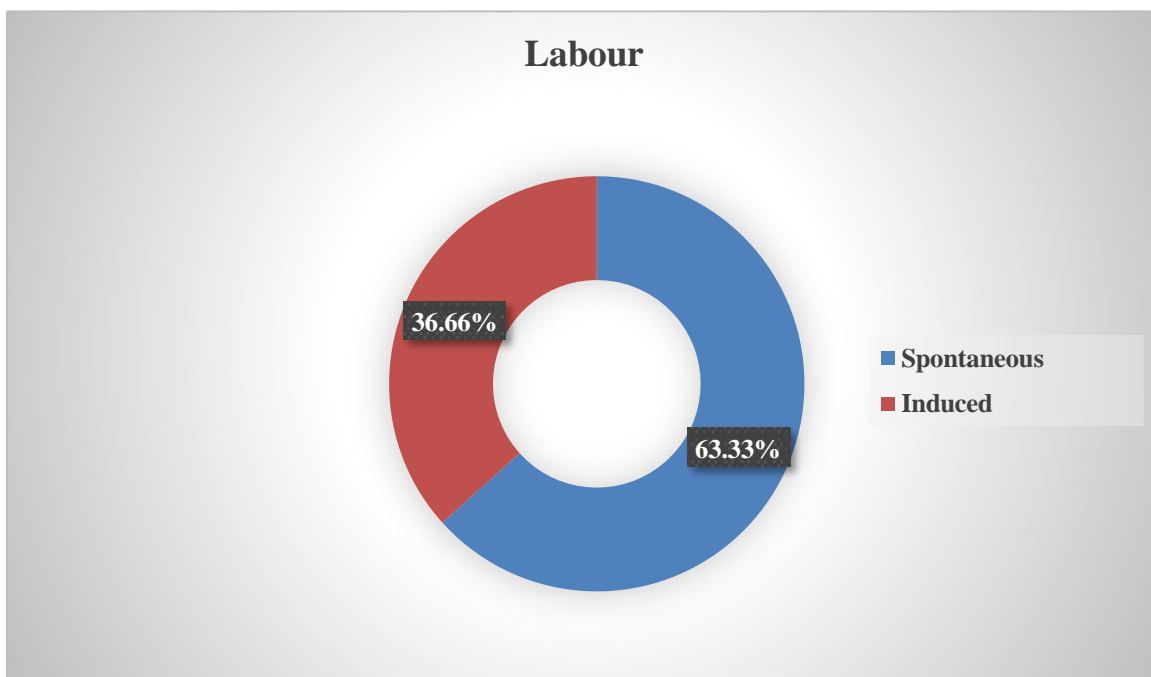


Fig No. 5: - Labour.

6. Course of Labour

Table No. 6: - Course of Labour.

S. NO	COURSE OF LABOUR	NO. OF PATIENTS	PERCENTAGE
1.	NORMAL	103	85.83%
2.	PROLONGED1 ST STAGE	9	7.5%
3.	OBSTRUCTED	8	6.66%
	TOTAL	120	100%

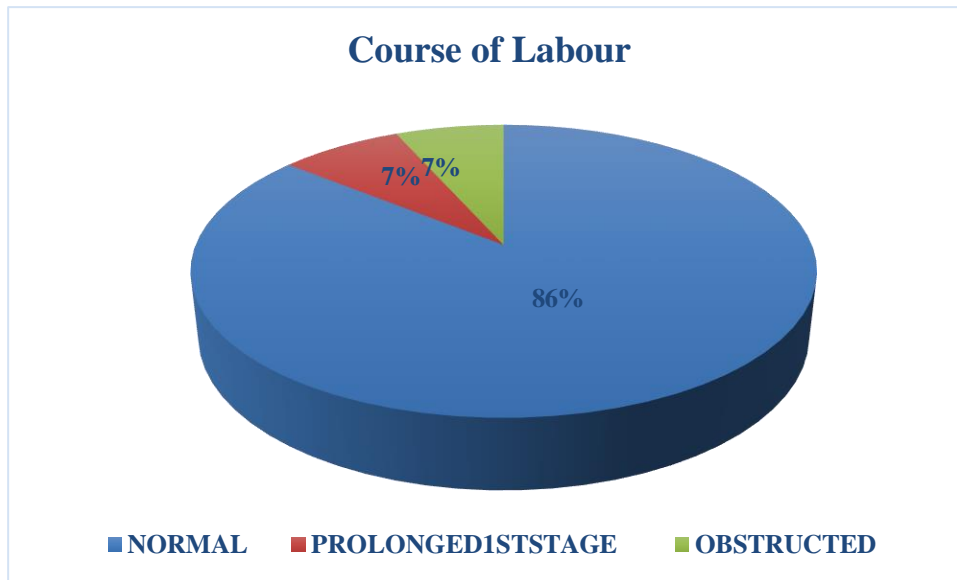


Fig No. 6:- Course of Labour.

7. Apgar Score at 1 Minute

Table No.7:- APGAR score at 1 min.

S. NO	APGAR SCORE AT 1MINUTE	NO.OF PATIENTS	PERCENTAGE
1.	>6	49	40.83%
2.	8-10	71	59.16%
	Total	120	100%

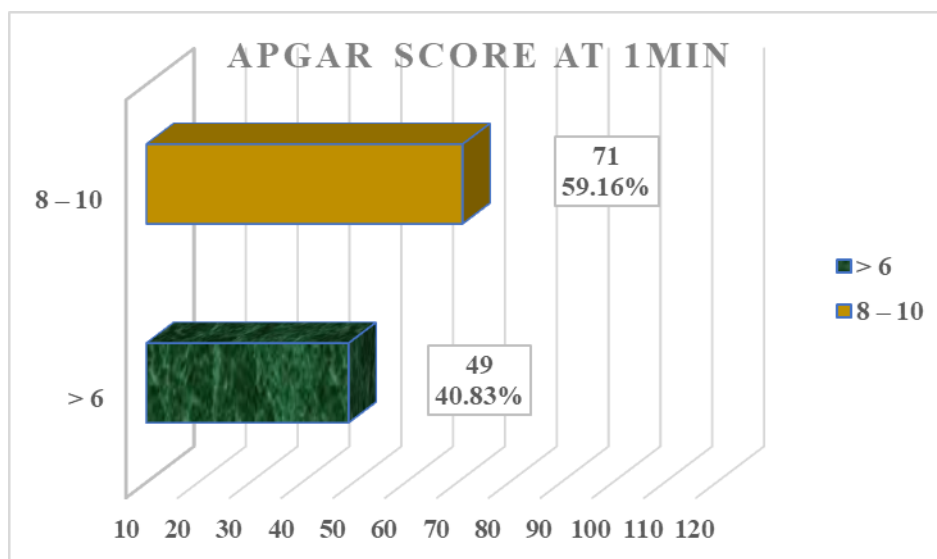


Fig No.7:- APGAR score at 1 minute.

8. APGAR SCORE AT 5 MINUTES

Table No. 8:- APGAR score at 5 minutes.

S. NO	APGAR SCORE AT 5 MINUTES	NO.OF PATIENTS	PERCENTAGE
1.	>6	2	1.66%
2.	8-10	118	98.33%
	Total	120	100%

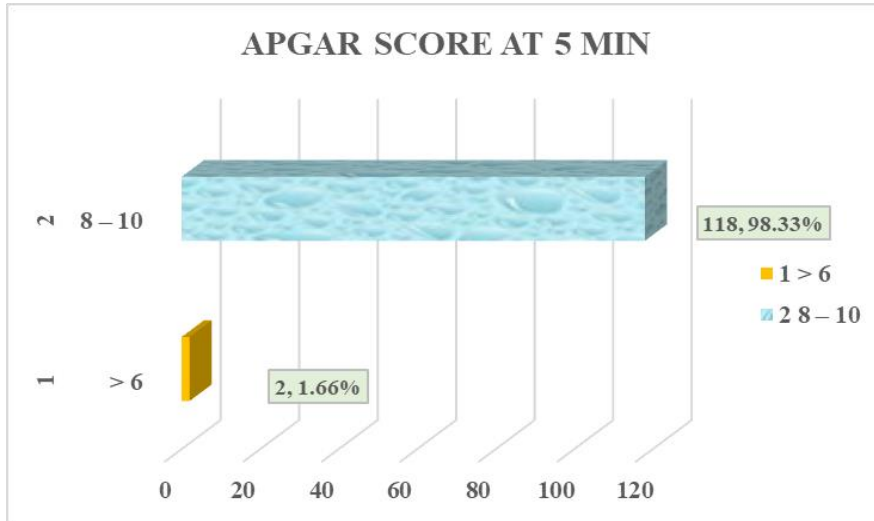


Fig No. 8:- APGAR score at 5 minutes.

9. Appearance of Jaundice

Table No. 9:- Appearance of Jaundice.

S. NO	APPEARANCE OF JAUNDICE	NO.OF PATIENTS	PERCENTAGE
1.	FACE	2	1.66%
2.	ABDOMEN	66	55%
3.	LEGS	43	35.83%
4.	FEET&HEAD	9	7.5%
	TOTAL	120	100%

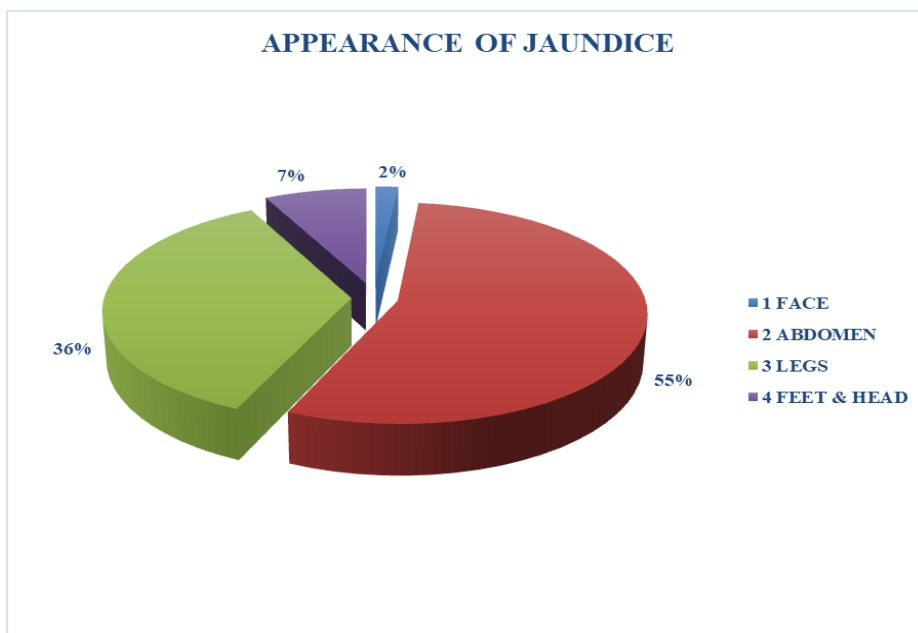


Fig No. 9:- Appearance of Jaundice.

10. Grades of phototherapy

Table No. 10:- Grades of Phototherapy.

S.NO	GRADES OF PHOTOTHERAPY	NO.OF PATIENTS	PERCENTAGE
1.	SSPT	105	87.5%
2.	DSPT	15	12.5%
	TOTAL	120	100%

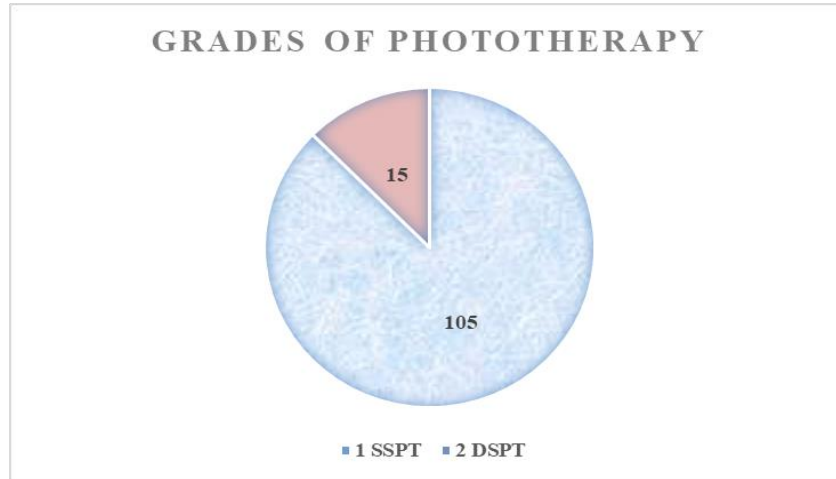


Fig No. 10:- Grades of Phototherapy.

11. Blood Group:- (Baby)

Table No. 11:-Blood Groups(baby).

S.NO	BLOOD GROUPS	NO.OF PATIENTS	PERCENTAGE
1	A+VE	38	31.67%
2	B+VE	49	40.83%
3	B-VE	1	0.83%
4	AB+VE	6	5.00%
5	AB-VE	1	0.83%
6	O+VE	25	20.83%
	TOTAL	120	100.00%

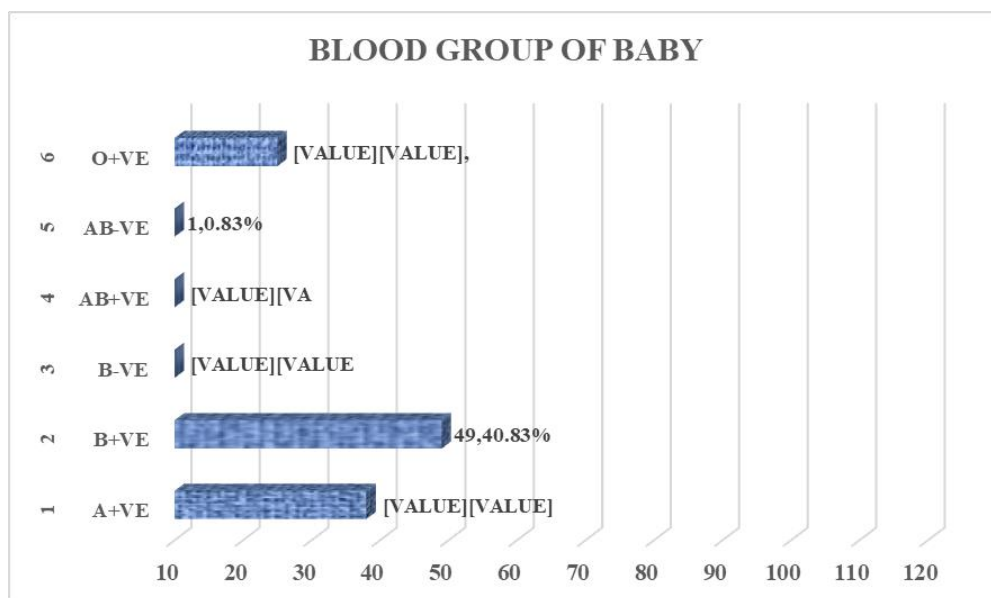


Fig No. 11:- Blood Group (baby).

12. BLOOD GROUP (MOTHER)

Table No.12:- Blood Group (mother).

S. NO	BLOODGROUPS(MOTHER)	NO.OFPATIENTS	PERCENTAGE
1.	A+VE	29	24.16%
2.	B+VE	36	30%
3.	AB+VE	12	10%
4.	O+VE	42	35%
5.	O-VE	1	0.83%
	TOTAL	120	100%

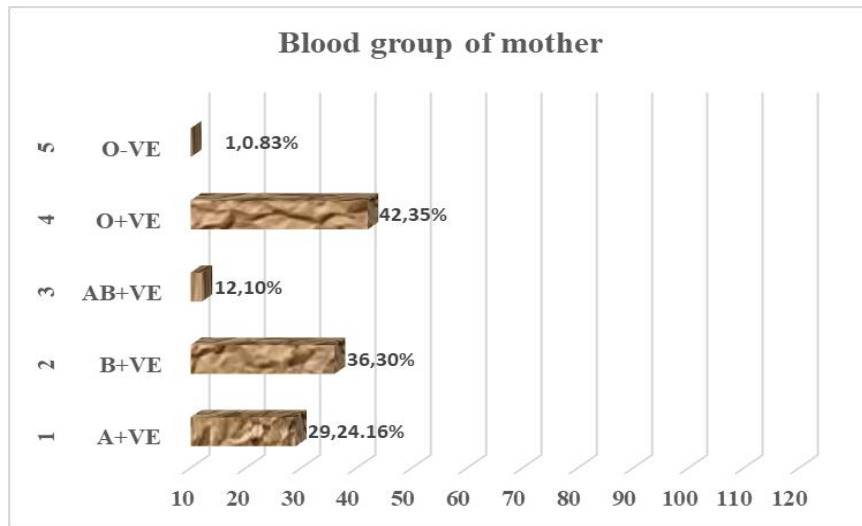


Fig No.12:- Blood Group (mother).

13. Total Serum Bilirubin

Table No. 13:- Total serum bilirubin.

S. NO.	TOTAL SERUM BILIRUBIN	NO. OF PATIENTS	PERCENTAGE
1.	9–11	16	13.33%
2.	11–13	61	50.83%
3.	13–15	29	24.16%
4.	15–17	12	10%
5.	17–19	2	1.66%
	TOTAL	120	100%

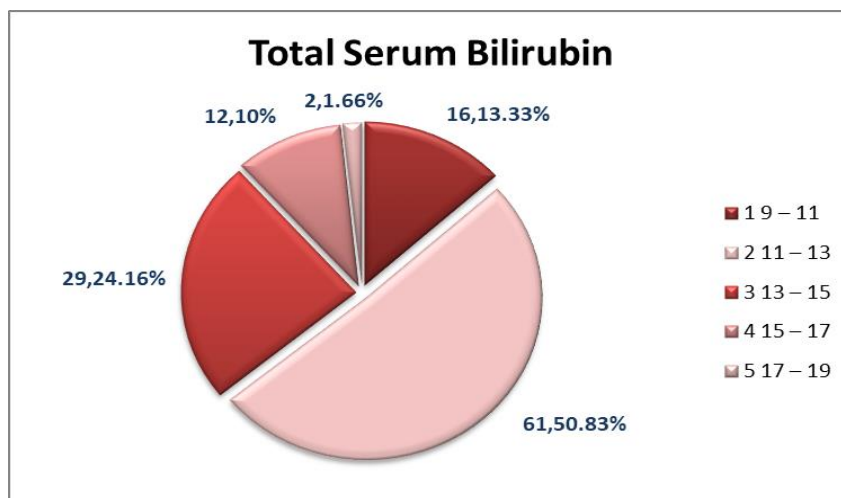


Fig No.13:-Total serum bilirubin.

DISCUSSION

Out of 120 neonates, the prevalence of neonatal jaundice was found to be higher in males (52.5%) compared to females. The majority of the neonates had a gestational age of 38 weeks (52.5%) and were delivered through normal vaginal delivery (58.33%). The most common management approach was phototherapy (87.5%), followed by breastfeeding support and hydration therapy. Blood group incompatibility was noted as a significant contributing factor, with 40.83% of neonates having a B+ blood group and 35% of mothers having an O+ blood group. The total serum bilirubin levels ranged between 11-13 mg/dL in 50.83% of cases. The findings suggest that early diagnosis and timely intervention can prevent complications associated with neonatal jaundice.

When compared with previous studies, our findings align with global data indicating that neonatal jaundice is more prevalent among male infants and those born at term. Studies have also highlighted the role of blood group incompatibilities, with ABO incompatibility being one of the leading causes. Our study reinforces the importance of monitoring bilirubin levels, encouraging breastfeeding, and using phototherapy as a primary treatment modality. Further research should focus on genetic predisposition and alternative therapeutic approaches to enhance neonatal care.

CONCLUSION

Neonatal jaundice remains a significant concern in neonatal healthcare, with factors such as gestational age, mode of delivery, and blood group incompatibilities contributing to its occurrence. Our study emphasizes the need for early screening, effective management using phototherapy, and supportive care through breastfeeding and hydration therapy. Timely intervention can prevent severe complications and improve neonatal outcomes. Future research should explore the genetic and environmental determinants of neonatal jaundice to develop targeted preventive strategies.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

REFERENCES

1. Christian Kebede et al. Treatment outcome of jaundice and associated factors in neonates, Ethiopia, 2022.
2. Hanneke Brits et al. Prevalence and risk factors of neonatal jaundice, Bloemfontein, 2016.
3. Bashir U. Zaman et al. Clinical profile of neonatal jaundice in Northern India, 2023.
4. Tsedale Ayalew et al. Factors associated with neonatal jaundice in Ethiopia, 2022.
5. Dr. Manas Ranjan Sahoo et al. Neonatal jaundice in a tertiary care center in South India, 2014.
6. Carolyn G. Scrafford et al. Incidence and risk factors for neonatal jaundice in Nepal, 2006.
7. Mohammed Tessema et al. Magnitude and determinants of neonatal jaundice in Ethiopia, 2020.
8. Yanli Liu et al. Evaluation of markers of neonatal pathological jaundice due to bacterial infection, 2018.
9. Nima Dorji et al. Epidemiology of neonatal jaundice in Bhutan, 2019-2020.
10. Pei-Chen Tsao et al. Outcomes of neonatal jaundice in Taiwan, 2000-2010.