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# Relationship Between Fetal Factors And Exaggerated Physiological Jaundice - A Prospective Study

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***Abstract:***
*Background: Various fetal factors are found to be associated with neonatal jaundice which is a normal benign phenomena that affects 60% of the term and 80% of the preterm(1) . But role of fetal factors in its causation has not been proved completely. Hence this study was done to evaluate the relationship between fetal factors and exaggerated physiological jaundice.(2,3,4)*
***Materials and Methods:*** *Retrospective study done on 50 newborns born in Department of Pediatrics VMMC Karaikal during the period of July to September 2019.Full term singleton babies born with no congenital anomalies and other complications irrespective of their birthweight were included. Babies with risk factors for pathological jaundice were excluded. Serum bilirubin analysis was done, Information regarding the baby 'gender , birth weight mode of delivery and baby ' s blood group were collected.*
***Results:*** *Out of 50 deliveries , 31 were clinically jaundice on day 3 of life ( 62%) . According to our study ,male babies , babies born via elective LSCS with good birth weight and O Positive blood group have more chances of developing neonatal hyperbilirubinemia.*
***Conclusion:*** *Male babies , babies born via elective LSCS , those with O Positive blood group and with appropriate birth weight are at more risk of developing exaggerated physiological jaund*
***Keywords :*** *newborns, jaundice, bilirubin*

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## I. Introduction

Neonatal hyperbilirubinemia is one of the most frequent problems of neonatal period 1 .It involves about 60% of term and 80% of preterm babies, which can be both physiological or pathological 2.Although jaundice is benign phenomenon ,newborns should be assessed in order to prevent further progression into severe hyperbilirubinemia and acute encephalopathy3. Jaundice is the most common cause of readmission to hospital.2, 3 ,4. Most of the studies were done in the purview of pathological jaundice more than physiological jaundice 5.This study was done in an attempt to find out fetal factors associated with exaggerated physiological jaundice in a tertiary care hospital in the coastal region of Karaikal.

## II. Materials And Methods

This was a prospective study done in the department of Pediatrics , Vinayaka missions Medical College , Karaikal UT of Puducherry during the period of July to September 2019
(3 months ).The sample size was taken was 50 newborns during the study period .Written informed consent was obtained from the mothers before the onset of the study .Institutional ethical committee approved the research .

Study Design: Prospective study
Study Location: Department of Pediatrics , Vinayaka missions Medical College , Karaikal, UT of Puducherry
Study Duration: July to September 2019(3 months ).
Sample Size: 50 newborns
Subject and Selection Method : The study population was drawn from the consequtive babies whowere delivered in the Department of Pediatrics ,VMMC with respect to the inclusion and exclusion criteria .
Inclusion criteria:
1 . Singleton pregnancies
2. Willing to consent

Exclusion criteria:
1. Risk of Pathological Jaundice like ABO , Rh Incompatibility
2. Complications at birth
3. Congenital anomalies
4. Failure to consent

## III. Methodology:

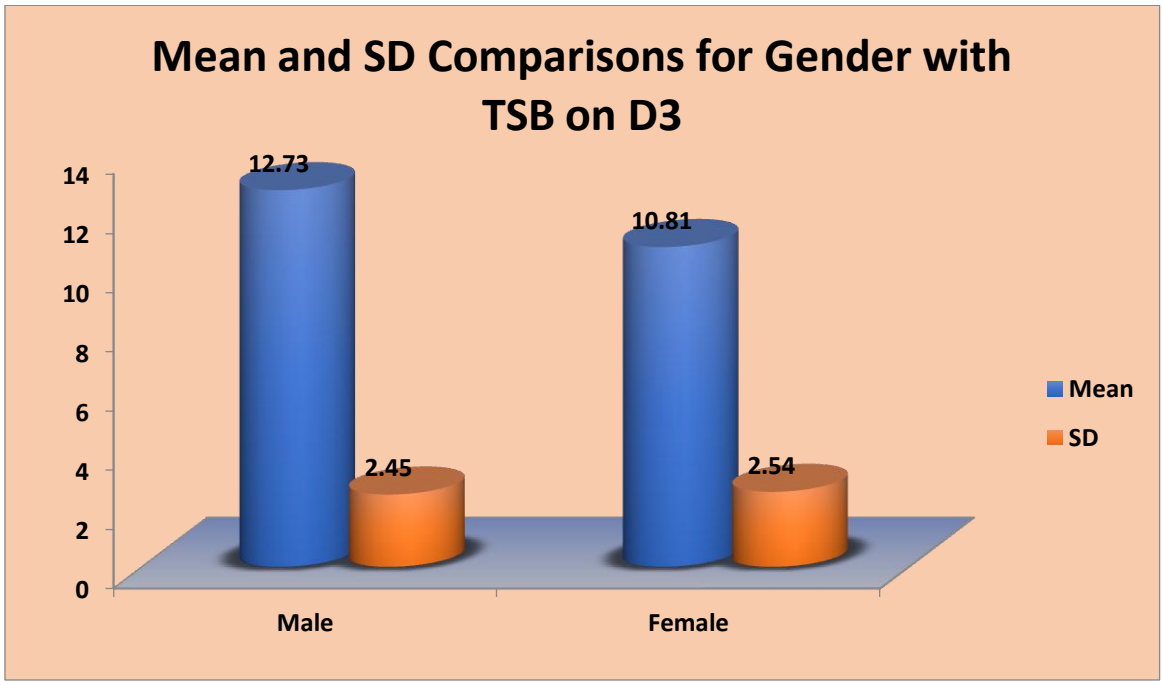
Data regarding baby ' s blood group ,birth weight mode of delivery were collectedThe babies after birth are assessed using New Ballards scoring system .TSB ( Total Serum Bilirubin) values are assessed in those babies who are clinically jaundiced ( Physiological Jaundice ) from the dorsum of hand or foot) Serum bilirubin is estimated using Diazo reagent method and quantitative analysis was done by spectrophotometry. Statistical Analysis was done by SPSS version 16 . Chi square test was applied to study the association between the various factors. p value of < 0.05 was taken as significant

## IV. Results

Out of the 50 deliveries 31 babies were jaundiced at day 3 of life(62%).

**Table 1 : Gender with TSB on D3**

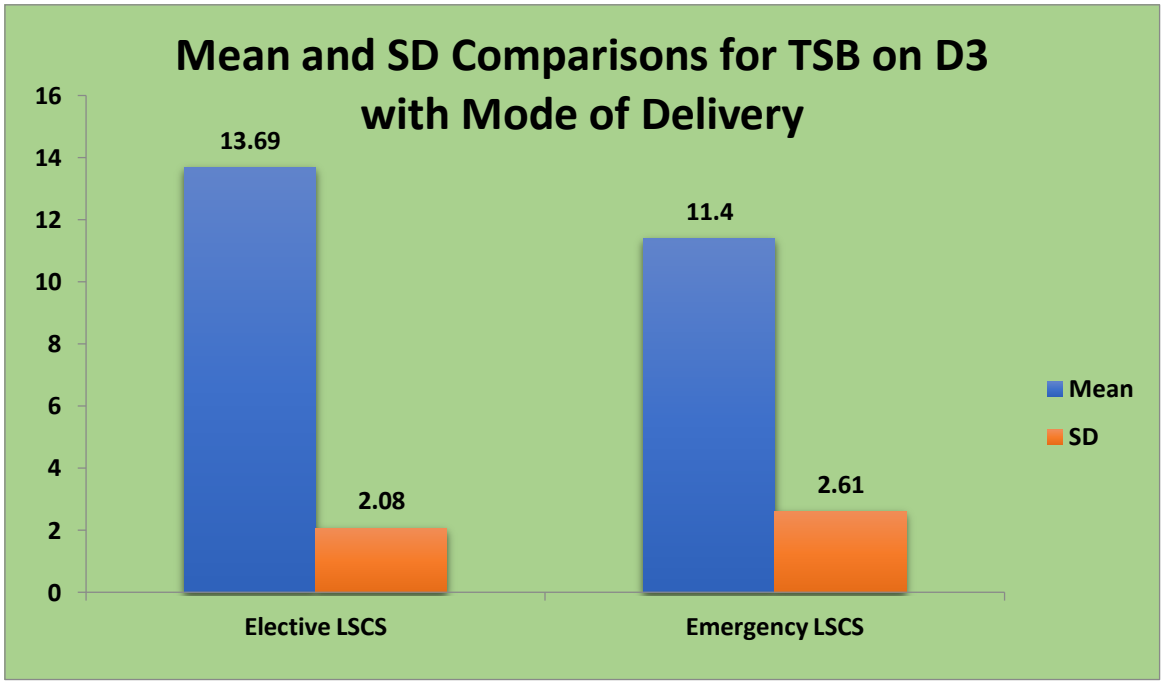
| | | | | | |
|---|---|---|---|---|---|
| **Gender with TSB on D3** | **Gender** | **N** | **Mean ± SD** | **Independent t value** | **P value** |
| | **Male** | **25** | **12.73 ± 2.45** | **2.718** | **0.009 Significant (P<0.05)** |
| | **Female** | **25** | **10.81 2.54** | | |




Male babies are at risk as per the above table

**Table2: TSB on D3 with Mode of Delivery**

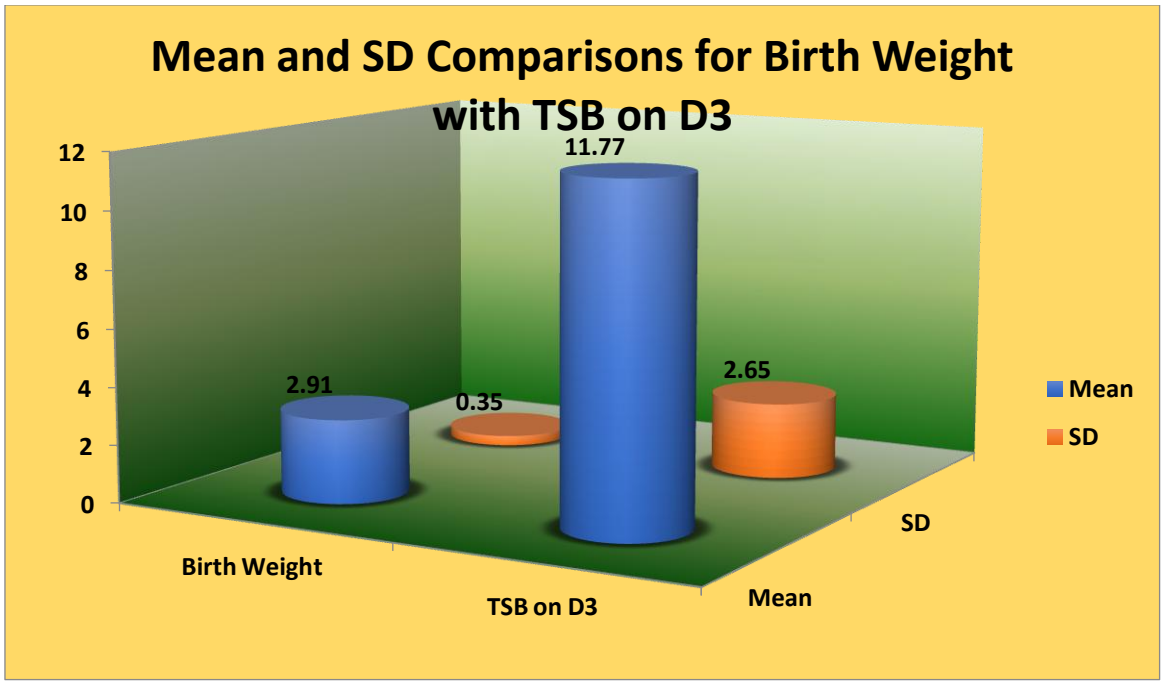
| | | | | | |
|---|---|---|---|---|---|
| **TSB on D3 with Mode of Delivery** | **Mode of delivery** | **N** | **Mean ± SD** | **Independent t value** | **P value** |
| | Elective LSCS | **8** | **13.69 ± 2.08** | **2.329** | **0.024 Significant (P<0.05)** |
| | Emergency LSCS | **42** | **11.40 ± 2.61** | | |




**Babies born via Elective LSCS are at more risk.**

**Table3: Birth Weight with TSB on D3**

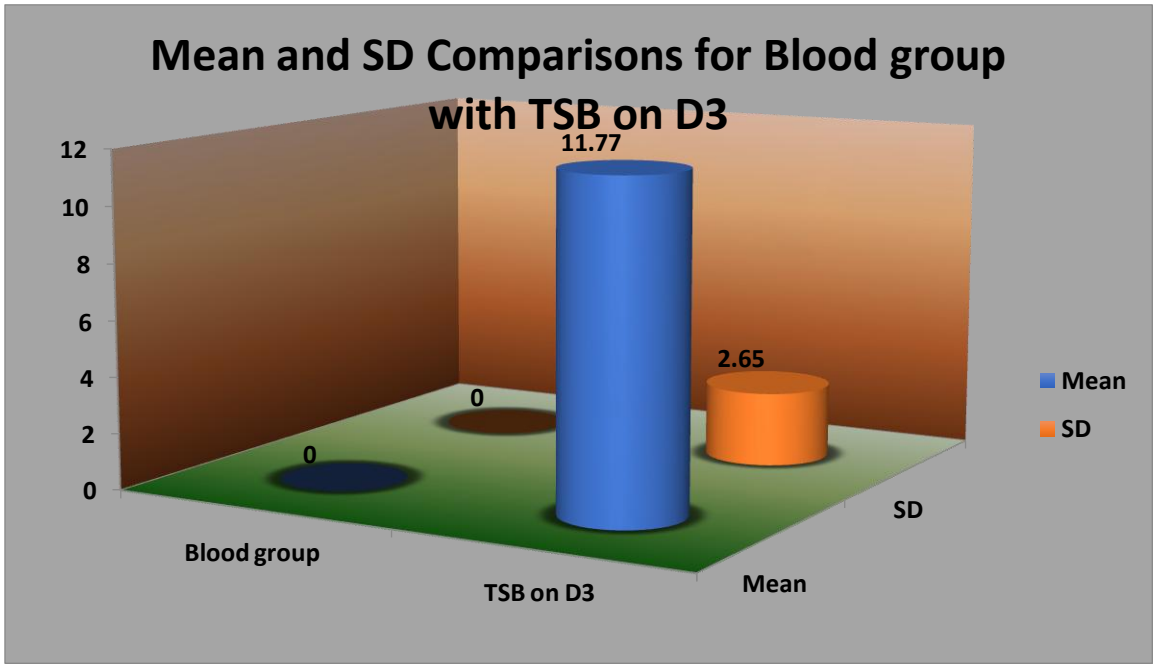
| | Variables | N | Mean ± SD | Regression t value | P value |
|---|---|---|---|---|---|
| Birth Weight with TSB on D3 | Birth Weight | 50 | 2.91 ± 0.35 | -2.146 | 0.037 Significant (P<0.05) |
| | TSB on D3 | 50 | 11.77 ± 2.65 | | |




Babies born with a birth weight of 2.9 kg and above are at Significant risk

**Table4: Blood group with TSB on D3**

| | Variables | N | Mean ± SD | F | P value |
|---|---|---|---|---|---|
| Blood group with TSB on D3 | Blood group | 50 | NA | 2.614 | 0.048 Significant (P<0.05) |
| | TSB on D3 | 50 | 11.77 ± 2.65 | | |




Babies with Blood group of O Positive are at more risk .

## V. Discussion

This study shows that Male babies are at more risk of developing exaggerated physiological jaundice. This finding was consistent with the findings of Boskabadi etal ( 2011 )(11) . However Garosi etal ( 2016 ) reports more incidence in Female infants (2) while Zarrinkoub etal (10) doesn't report any significant relationship between Gender and exaggerated physiological jaundice.

According to this study babies born via elective LSCS are at more risk of developing exaggerated physiological jaundice. Boksbadi etal (2011 ) (11)found no significant relationship between the same . However Garomi etal (2016) (2)says that Normal Vaginal Delivery is a risk factor. These conflicting results maybe due to differences in the patient characteristics study conditions and the sample Size.

Our study says that babies with birthweight of >_ 2.9 kg are at high risk of developing exaggerated physiological jaundice. Strafford etal ( 2013) also supports this . (9)

This study proves that babies with O Positive blood group are at high risk of developing exaggerated physiological jaundice. Unfortunately there are very less literature regarding the influence of baby blood group and exaggerated physiological jaundice. (6,7)

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