Background Preterm infants may be more vulnerable to fractures due to physiological, metabolic and environmental factors, but an increased risk of fractures up to the age of 2 is unproven. The diagnosis of child abuse is one of exclusion and otherwise unexplained fractures in infants and young children may be erroneously attributed to premature birth despite the lack of evidence. The dilemma is complicated by reports that preterm children are more likely to be subjected to abuse as compared to term children. Epidemiological and clinical data comparing fractures in both preterm and term children could help experts form an opinion on the possibility of child abuse.

Objectives To ascertain the rate of fractures, any differences in clinical presentation between preterm and term populations in the first 3 years of life and describe any differences in fracture patterns with an emphasis on fractures specific for abuse (rib and metaphyseal).

Methods A retrospective study was conducted of children (term or preterm) born in the neonatal department of [screened] and subsequently attending the Emergency Department at [screened] with a suspected fracture within a 10-year period. We excluded any child who returned with the same injury, with known metabolic bone disease, with any disease or condition known to reduce bone density, who received any medication known to affect Vitamin D metabolism within 3 months of enrolment or who had fractures post-surgery/resuscitation. Variables such as the number of fractures sustained each year, age of presentation to the Emergency Department and mechanism of injury were compared between the preterm and term groups using statistical analysis (χ^2 and Fisher exact test for categorical variables and Student's t-test for continuous variables). Simple linear regression was performed on the total number of fractures sustained by age 3.

Results 3,737 children were born and 2,533 attended ED during the study period, of which 79 attended with fractures. 44 children were included. Of these, none were born extremely preterm, 24 (55%) were preterm, and 20 (45%) were born at term. Mean gestational ages of the preterm and term groups were 32 weeks 3 days and 39 weeks 6 days, respectively. There were no extremely low birth weight or very low birth weight children. There was no significant difference in the number of fractures sustained yearly, the age of presentation to the Emergency Department or the site of fracture between preterm and term groups. Linear regression showed that the total number of fractures sustained by age 3 years was unrelated to prematurity status, gender or birth weight category.

Conclusions Our data failed to show any association between prematurity and risk of childhood fractures up to the age of 3 years. Clinical presentation, site and types of fractures sustained by premature infants were not different from the term cohort. There were no fractures typical of abuse presenting over the 10-year study period, which suggests they are an uncommon finding in preterm children up to the age of 3 years. Caution is required when ascribing fractures typical of abuse to prematurity, particularly in preterm (compared to extremely preterm) births.

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COMPARISON OF EFFECTIVENESS OF DOUBLE LED PHOTOTHERAPY VERSUS COMBINATION OF FIBEROPTIC WITH SINGLE LED PHOTOTHERAPY FOR NEONATAL HYPERBILIRUBINEMIA

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Background Neonatal hyperbilirubinemia is one of the most common presentations requiring medical attention in the 1st week of life. It is also a common indication for re-admission to hospital after early discharge of newborn babies. Currently, there are multiple forms of phototherapy devices available: conventional (halogen white light & fluorescent special blue light), blue light-emitting diodes (LEDs), and fiberoptic blankets/pads, with the latter two being increasingly used in the majority of the neonatal units nowadays. But, there is no 'standard' accepted modality for providing phototherapy and a variety of strategies have been followed by different researchers.

Objectives To compare the effectiveness and side effects of combination of fiberoptic phototherapy and single Light Emitting Diode (LED) phototherapy over double LED phototherapy.

Methods This open-label randomized trial comprised 100 newborn babies, both term and preterm who develop unconjugated jaundice requiring phototherapy as per NICE clinical guidelines and were admitted to the neonatal intensive care unit of our hospital, between 1st August 2020 to February 28th, 2021 were included in the study. 50 babies were randomized each to Group-A (Double surface LED phototherapy) and Group-B (Combination of fiberoptic biliblanket and single surface LED phototherapy). Mean rate of total serum bilirubin reduction, mean duration of phototherapy required, mean rebound total serum bilirubin after stopping intensive phototherapy, and side effect profile were compared in both the groups.

Results The mean rate of total serum bilirubin reduction, mean duration of phototherapy required, and mean rebound total serum bilirubin after stopping intensive phototherapy had no statistically significant difference between both the groups. Only one baby developed loose stools in group-A. No major or minor side effects were noted among babies in group-B.

Conclusions We found out that the effectiveness of double LED phototherapy and the combination of fiberoptic phototherapy with a single LED phototherapy were similar for the treatment of unconjugated neonatal hyperbilirubinemia, for both preterm (early and late) and term babies. Side effect profile was not significant in both double LED phototherapy and combination of fiberoptic phototherapy with a single LED phototherapy.