www.worldneonatology.com

Review Of One Year Referrals With Prolonged Neonatal Jaundice To A Fast Track Clinic At A DGH In England, UK

Dr Khairy G.Gad[1]

[1] Consultant paediatrician, NHS, England, UK

Introduction

We present the findings of a retrospective audit looking into the management of prolonged neonatal jaundice cases referred to the fast track clinic at a DGH in England, UK.

Prolonged neonatal jaundice is a common cause of referral to paediatric assessment units or fast track clinics. It is defined as jaundice that persists beyond 14 days in term infants or after 21 days in the preterm infant. It is commonly encountered in breastfeeding infants.

Methods

A survey monkey was developed and with the assistance of the audit department, cases were identified in the preceding 12 months. A total of 81 cases were identified, 35 females and 46 males.

Data collection covering the demographics (age, gender and gestation at birth) was undertaken. Weight, type of feeding, stools colour, urine colour, previous requirement for phototherapy, investigations, results and final diagnosis were reviewed.

Data were analysed and practice was compared against national and local guidelines for the management of prolonged jaundice in the newborn infant.

Results

68 cases were term infants and 13 were born prematurely. 88% of cases were breast fed infants (Chart 1). Weight, stools and urine colour were documented in 73 patients (90%).

Weight was the most commonly undocumented measurement in 9% of cases. 3% of cases did not have bilirubin levels measured as baby did not look jaundice on assessment. 92% of cases had conjugated bilirubin levels < 20 micromol/L.

4 out 81 cases (5%) had raised conjugated bilirubin (> 20 micromol/L or greater than 10% of total bilirubin).

(Chart 2).

Urine cultures were only sent in 13 out of 17 high risk infants (symptomatic, poor weight gain etc) as per local guidelines rather than NICE guidelines. The latter testing routine urine test. Urine cultures were only positive in one case (E. Coli > 10^5). 5 out of 13 cases had mixed growth indicating contaminated urine samples (urine pad samples).

2 cases were identified with biliary atresia and subsequently referred to the regional liver unit. One case had a diagnosis of CMV and in another raised conjugated bilirubin was attributed to TPN. One case was referred to the regional liver unit for further investigations. Chart 3 shows final diagnoses in cases referred with prolonged neonatal jaundice.

Discussion

Review of cases referred to the Rapid Access Clinic was undertaken against NICE and the local guidelines for management of prolonged neonatal jaundice.

It is a condition commonly encountered in breast feeding infants[1]. A few disorders must be ruled out in timely fashion as early treatment is vital to improve outcomes e.g. biliary atresia, hypothyroidism, galactosaemia, UTI, sepsis etc [2].

It is vital to exclude severe cholestasis by specifically looking for acholic stools, dark urine and checking that infant is gaining weight. Enquiring about inherited red blood cell disorders in the family e.g. spherocytosis, or atypical antibodies in the mother and family history of specific haematologic disorder or genetic syndromes e.g. Gilberts forms another important part in the history.

Assessing the general condition of the infant, looking for any dysmorphic features, vital signs, hepatosplenomegaly, skin colour, etc is integral in routine assessment of such cases. Neonatal jaundice can be rarely associated with very rare genetic conditions e.g. Alagille syndrome.

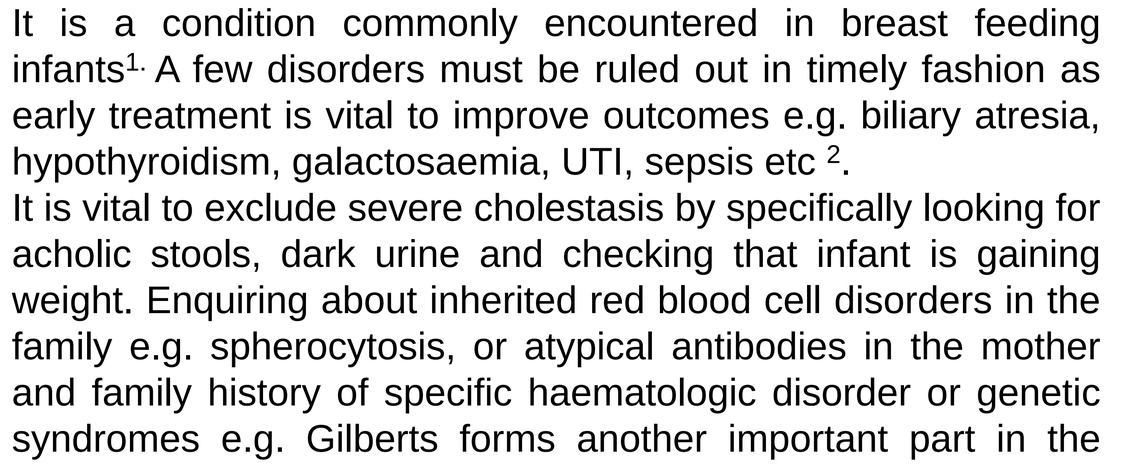


Chart. (1): Type of feeding in the study cohort: 88% were breast fed

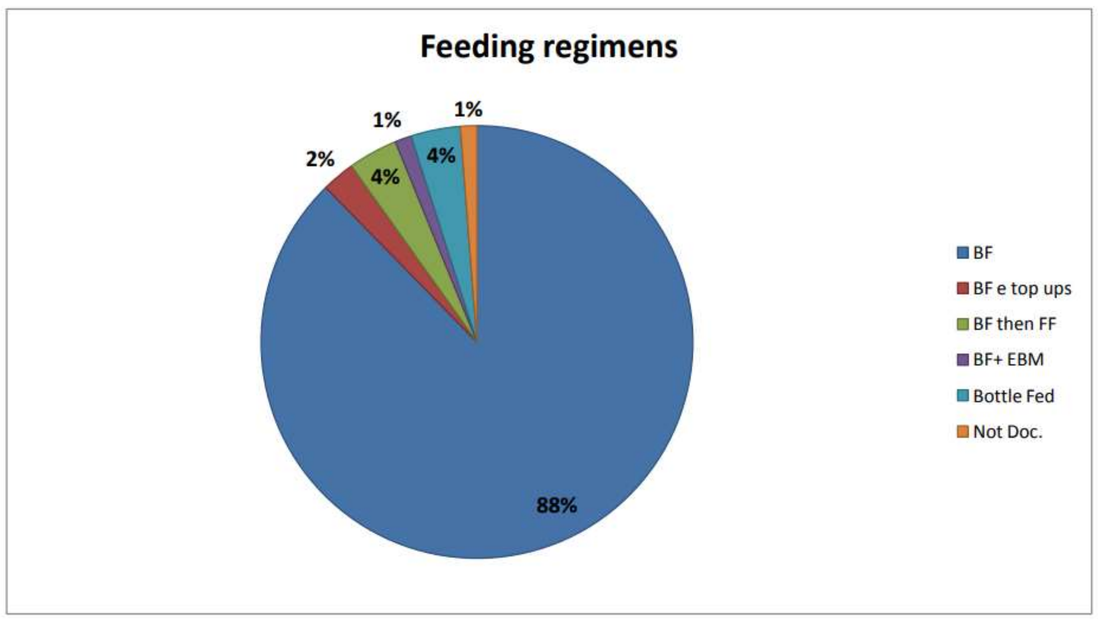


Chart (2): Conjugated bilirubin results, 5% had raised levels.

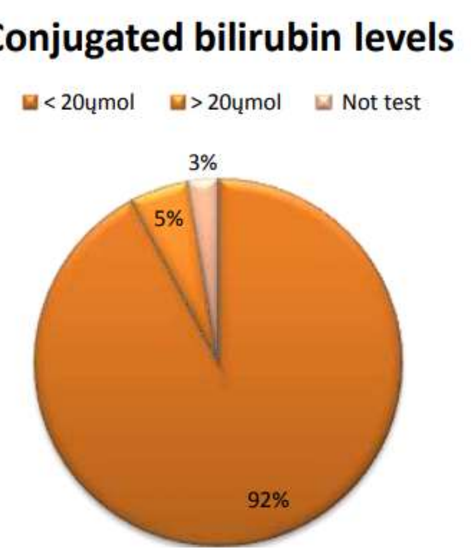
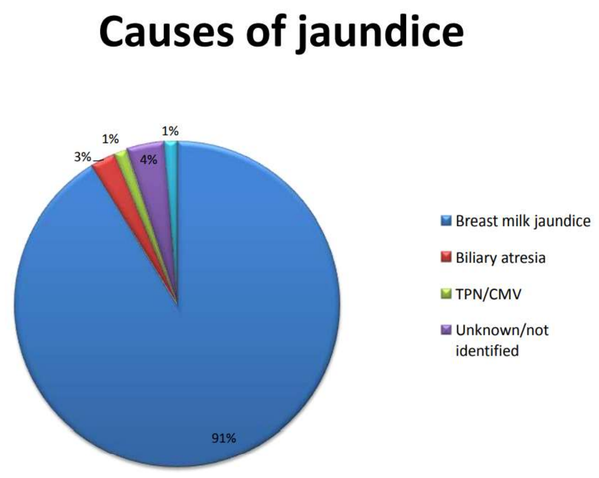


Chart (3): Final diagnosis for prolonged jaundice cases



Conclusion

NICE guidelines recommend the following in the assessment for prolonged neonatal jaundice: Look for pale stools and dark urine. Measure conjugated bilirubin and check full blood count, blood group, Direct Coomb's test, thyroid function tests and urine cultures. NICE also advises seeking expert opinion when conjugated bilirubin is greater than 25 micromol/L.

In our study, 88% of the cases were breast fed and breast milk jaundice was the final diagnosis. Biliary atresia was identified in 2 cases. CMV infection and TPN were cause in 2 cases and one case was still under investigations to identify the underlying cause. A proforma was developed for use to improve documentation of essential elements in history, examination, investigations and plan for infants referred with prolonged neonatal jaundice. It also included confirmation that parents were informed of results and whether discussion with a senior clinician was required and undertaken.

Awareness of national, regional and local guidelines for management of prolonged neonatal jaundice is crucial to avoid delay in diagnosing treatable causes e.g. hypothyroidism, galactosaemia, haemolysis etc. Early diagnosis and timely appropriate referrals are crucial in cases with biliary atresia to avoid bad outcomes.

References and further reading

1. Gilmour SM. Prolonged neonatal jaundice: When to worry and what to do. Paediatr Child Health. 2004 Dec;9(10):700-704. doi: 10.1093/pch/9.10.700. PMID: 19688078; PMCID: PMC2724143.

2. Green, B., Burland, L. and Smith, C., 2014. A guide to neonatal jaundice. *BMJ*, p.g2836.

3. *Overview | Jaundice in newborn babies under 28 days | Guidance.* https://www.nice.org.uk/Guidance/CG98.