

# Recurrent Cholestatic Jaundice – Think beyond Viral Hepatitis

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**Abstract-** We report a case of recurrent intrahepatic cholestasis in an 4-year-old boy who developed four episodes of purities and jaundice at the ages of 6months, 1yr 2yr and 4 years. Each episodes had lasted 6-8 weeks and the 2<sup>nd</sup> and 3<sup>rd</sup> episodes were associated with fever which had lasted for 4-6 days. The liver functions were minimally deranged and serum bilirubin, returned to normal between attacks. Investigation in previous episodes proved cholestatic hepatitis and excluded other causes of liver disease. First three episodes had been diagnosed as viral hepatitis and managed for the same. On 4<sup>th</sup> recurrence child had been extensively investigated and proved to have features of benign recurrent intrahepatic cholestasis (BRIC). Rarity of the disease and its unpredictable clinical morbidity and resemblance to viral hepatitis prompted us to report this case.

**Index Terms-** cholestasis, jaundice, benign recurrent intrahepatic cholestasis

## I. INTRODUCTION

Benign recurrent intrahepatic cholestasis (BRIC) is a rare hereditary disorder characterized by recurrent and intermittent episodes of cholestasis, episodes of pruritus and jaundice with normal extra hepatic biliary tree. It can be Familial or sporadic, and can be both autosomal recessive or autosomal dominant in inheritance. The disease may start in early infancy or childhood but does not proceed to cirrhosis or chronic liver disease and is associated with normal life expectancy. <sup>(1)</sup> Attacks last from several weeks to months and resolve spontaneously. Between attacks patients remain well for months to years. <sup>(2)</sup>

## Case Report

4 yr boy presenting with with complaints of yellow discoloration of sclera, urine and associated with loss appetite, generalized itching all over body more in night since 06 weeks. Past history of recurrent cholestatic jaundice episode, with similar complaints, at the ages of 6 months, 1 year and 2 years of

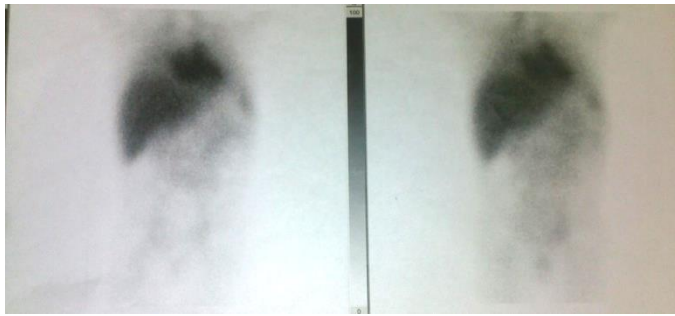
life was present. Each episode had lasted 4-8 weeks. The 2nd and 3rd episodes were associated with 4-6 days of fever at the onset of symptoms. On examination child was stunted and wasted with features suggestive of vitamin A deficiency and multiple scratch markings.

The liver functions in last two episodes ranged as depicted in Table 1.

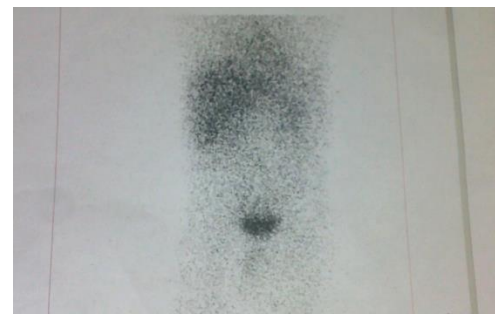
	3 <sup>rd</sup> episode at presentation	3 <sup>rd</sup> episode at last follow up (6weeks later)	4 <sup>rd</sup> episode at presentation	4 <sup>rd</sup> episode at last follow up (8weeks later)
Total Serum Bil (Conjugate)	16.3(11,5)	1.4(1.1)	10.3 (8.3)	3.9
SGOT	124	84	56	60
SGPT	76	54	21	40
ALP	386	384	338	269
Albumin	3.65		3.9	

Table 1- The liver functions

Other Investigation suggested -Hb 12.3, TLC 16400, P 44%, pletlet 3.5 lakhs, Bun/creatinine 12/0.5. PT/PPTK normal, GGT 190 U/L, . HbsAG/ anti HCV /anti HAV/anti HEV-Negative, HbeAg- negative serum ceruloplasmin -0.471 ug/l, ICT MP negative, ANA -negative, TORCH titers & HSV were negative, VDRL and HIV--negativeChest x ray normal, USG abdomen-hepatomegaly 10.5 cm, MRCP-contracted Gall Bladder with normal intrahepatic and extra hepatic billiary radicals. HIDA scan suggested of severe cholastasis with parenchyma normal. (Fig 1) & ( Fig 2)



Post phenobarbitone HIDA (Fig 1) Normal up take



(Fig 2)24 hrs - no transit of tracer into gut

Liver biopsy showed- increased lymphocytic infiltrate with piecemeal necrosis in the portal tracts with evidence of portal

fibrosis. Intrahepato cellular Cholestasis was seen with paucity of bile ducts in portal triad. (fig 3 & 4)



Fig 3-Liver biopsy –gross specimen

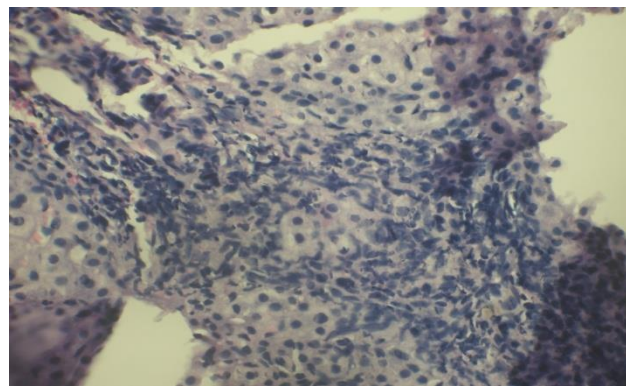


Fig 4- Liver biopsy -Histopathology

The 2<sup>nd</sup> and 3<sup>rd</sup> episodes were associated with fever which had lasted for 4-6 days and had been diagnosed as viral hepatitis and managed for the same. But a prolonged hyperbilirubinemia was noted on followup of 3<sup>rd</sup> episode. The child was given symptomatic treatment in the 4<sup>th</sup> episode and he improved by 8 weeks with near normalization of serum bilirubin. As the child had no evidence of chronic or progressive liver disease and other possible causes of jaundice were excluded, a diagnosis of benign recurrent intrahepatic cholestasis was made.

Shiffman (1999) gave diagnostic criteria for BRIC, <sup>(2)</sup> Which includes the following five criterias

1. episodes of jaundice separated by a symptom free interval lasting several months to years
2. Laboratory values ~ intrahepatic cholestasis
3. Severe pruritus secondary to cholestasis
4. Normal intra and extrahepatic bile ducts confirmed by cholangiography
5. Absence of factors known to be associated with cholestasis

## II. DISCUSSION

Summerskill and Walshe first described benign recurrent intrahepatic cholestasis in 1959<sup>(3,4)</sup> as recurrent episodes of jaundice and pruritus. Hence its also called Summerskill-Tygstrup-De Groote disease. Its Heterogeneous, benign disease which typically the manifests early in life but later presentations have been reported. BRIC is now recognized, as a syndrome due to a mutation in ATP8B1, an aminophospholipid transporter, while BRIC2 is caused by a mutation in ABCB11. There are at least three forms of BRIC all with a similar phenotype. BRIC types 1 and 2 are inherited as autosomal recessive and are related to mutations on chromosomes 18 and 2 respectively. BRIC type 3 is transmitted as an autosomal dominant disease and is not linked to mutations on chromosomes 18 or 2.<sup>(5)</sup> Its is characterized by self limiting cholestasis episodes and seen to exacerbate with intercurrent infections. Many a times this presentation is misdiagnosed as viral hepatitis. Luketic &

Biochemical findings consist of elevated total and direct bilirubin, raised alkaline phosphatase levels and elevated bile salts but normal gamma glutamyl transferase levels. Often the diagnosis in BRIC patients is made very late and patients are subjected to invasive investigations. Elevation in gamma glutamyl transferase levels or rising levels of ALT and AST should suggest an alternative diagnosis of progressive familial intrahepatic cholestasis (PFIC). Treatment of the condition is purely symptomatic and aimed mainly at the relief of pruritus.

## III. CONCLUSION

Our patient was initially managed as viral fever due to exacerbation with some intercurrent illness. All 5 diagnostic criteria for BRIC given by Luketic & Shiffman (1999) were met by our patient. He was treated symptomatically and needs long term follow up for early identification of Possible Progressive

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inherited syndromes of intrahepatic cholestasis.. Gastroenterology. 2007;132:119-26

#### REFERENCES

- [1] Balsells F, Wyllie R, Steffen R, Kay M. Benign recurrent intrahepatic cholestasis: improvement of pruritus and shortening of the symptomatic phase with rifampicin therapy: a case report. Clin Pediatr Phila 1997; 36:483± 5
- [2] Luketic VA, Shiffman ML. Benign recurrent intrahepatic cholestasis. Clin Liver Dis. 2004;8:133-49.
- [3] Summerskill WH. The syndrome of benign recurrent cholestasis. Am J Med. 1965; 38:298-305.
- [4] Summerskill WHJ, Walshe JM. Benign recurrent intrahepatic obstructive jaundice. Lancet. 1959;43:569-70
- [5] Liu C, Aronow BJ, Jegga AG, Wang N, Miethke A, Mourya R, Bezerra JA. Novel resequencing chip customized to diagnose mutations in patients with

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