

## **Benign Recurrent Intrahepatic Cholestasis (BRIC): A Rare Diagnostic Challenge.**

*Gnanathayalan S W<sup>1</sup>, Peranantharajah T<sup>1</sup>*

*<sup>1</sup>Teaching Hospital Jaffna*

### **Abstract**

Benign recurrent intrahepatic cholestasis is a rare familial cholestatic disorders with occasional sporadic incidence. It presents as recurrent episodes of obstructive jaundice and pruritis without any obstruction in the biliary system with perfectly symptom free period in between. Here we present a 35-year-old male with recurrent episodes of jaundice from the age of 20, eventually being diagnosed as BRIC after extensive evaluation.

### **Keywords**

Benign Recurrent Intrahepatic Cholestasis, Jaundice, Pruritis

### **Introduction**

Benign Recurrent Intrahepatic Cholestasis (BRIC) is a rare autosomal recessive disease with recurrent episodes of jaundice. These episodes resolve spontaneously with symptomatic management without causing damage to the liver (1). In between the episodes patients are completely free of symptoms. The diagnosis is challenging and usually by exclusion of other causes of cholestasis. Only supportive management is required (2). The first episode occurs usually before the age of 20 and can last weeks to months.

According to the available literature, few cases on BRIC have been reported worldwide.

### **Case Report**

A 35-year-old male presented with progressive jaundice, dark urine, pale stools generalized pruritis for three weeks duration. He had several similar episodes in the past and this was the ninth episode.

The first episode of jaundice occurred at the age of eighteen years with spontaneous resolution, followed by the second episode after symptom free interval of four years. That also resolved completely. Since then, he had similar episodes repeatedly 1-2 years, each lasting nearly one to three months with perfectly symptom free periods. He never had associated abdominal pain, distension, fever, rash, bleeding tendencies or episodes of confusion or altered behaviour. He denied any history of drug exposure or blood transfusion. He occasionally consumes alcohol, but he did not notice any correlation between alcohol intake and the onset of jaundice. He never travelled out of Sri Lanka. He is not a consanguineous product and no one in his family had similar illness.

On examination he was well looking with deep icterus and scratch marks on his body but without features of chronic liver cell disease. Abdomen was non tender with normal liver span without palpable spleen and no ascites. The rest of the examination was unremarkable.

During these cycles of symptoms, he had been extensively evaluated since 2003. Investigations revealed cholestatic picture with elevated direct bilirubin and alkaline phosphatase and normal transaminases. But interestingly gamma GT levels were normal. The screening for hepatitis viruses, anti-nuclear antibody, anti-smooth muscle antibody, anti-mitochondrial antibody and ANCA studies were all negative. He had normal ferritin and ceruloplasmin levels. Repeatedly USS abdomen was normal without duct dilatation. Only in 2013, USS abdomen showed few gall stones, and he underwent cholecystectomy, in spite of this he had repeated episodes of jaundice.

**Corresponding author:** Shahini Winson Gnanathayalan, email-winsgshahini@gmail.com, ORCID 0000-0001-6348-6229,

Submitted June 2020 Accepted November 2020



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MRCP study twice was normal with normal intra and extra hepatic biliary tree and pancreatic ductal system. He underwent USS guided liver biopsy in 2017 and it showed pigmented granules compatible with bilirubin, present within parenchymal hepatocytes and Kupffer's cells in a centrilobular distribution without inflammatory, fatty and fibrotic changes in hepatocytes.

Based on the clinical findings and investigations, a diagnosis of BRIC was made in 2020, according to the diagnostic criteria established by Luketic and Shiffman. We explained the condition to the patient and family and reassured about the benign nature of the disease. He was treated with Ursodeoxycholic acid and antihistamines with symptomatic recovery.

### Discussion

BRIC is a rare inherited condition with more sporadic cases. The cardinal feature is recurrent jaundice with pruritis with symptom free intervals in between. It has a benign course without progressing to Chronic Liver Cell Disease.

It is diagnosed using the criteria established by Luketic and shiffman (3). The criteria include: A history of at least two episodes of jaundice with asymptomatic periods of months to years in between, paraclinical test results consistent with intrahepatic cholestasis with GGT either normal or minimally elevated, severe pruritis secondary to cholestasis, liver histology demonstrating centrilobular cholestasis, Normal intra and extrahepatic bile ducts by cholangiography and absence of factors known to be associated with cholestasis (i.e. drugs and pregnancy)

The hallmark of familial intrahepatic cholestasis including BRIC is normal or minimally raised GGT in compared to other causes of intrahepatic cholestasis (4). GGT is released by cholangiocytes, damaged by elevated bile salts in bile. Reduced function of bile salt export pump (BSEP) significantly reduces bile salts level in bile. This mechanism has been explained for the low levels of GGT in these familial conditions (5).

Treatment is mainly supportive for symptomatic relief and shortening the duration of episodes, using bile acid binding resins, antihistamines, centrally acting opiod antagonists and enzyme inducers (2). Plasmapheresis, endoscopic nasobiliary drainage and ultraviolet therapy have place in refractory cases for symptomatic management (6).

### Conclusion

This case highlights the challenges in diagnosing this rare benign entity. Patients should be reassured regarding the benign nature of the disease. It should be considered in the list of possibilities during the evaluation of patients with recurrent jaundice to minimize repeated extensive and expensive investigations.

### References

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