

Mini Review**Perspectives of Jaundice and Implications****Nnodim Johnkennedy · Edward Ukamaka · Ikem Amarachi Promise and Nwabuba Tochukwu**

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Introduction

Jaundice involves yellowing of the skin, whites of the eyes, and body fluids. It is as a result of high level of bilirubin in the blood [1]. The bilirubin simply is a yellow pigment that is generated from haem metabolism, mainly from haemoglobin in red blood cells (RBCs). This bilirubin is moved by the blood to the liver, where it is linked with a sugar by an enzyme through conjugation so that it can be excreted in bile, which later reach the small intestine. It has been reported that jaundice may result from a problem at any point in the pathway especially increased breakdown of RBC, liver dysfunction or problems with excretion of bile [2].

The common conditions that may result to jaundice include

Acute hepatitis: This is liver inflammation due to a various causes like hepatitis A, B, C, D, and E viral infections, alcohol abuse, and some drugs and toxins [3]

Haemolytic anaemia: This may be due to an abnormal haemoglobin variant in the RBCs, malaria, an autoimmune process or any other conditions that result to a significant elevation in the destruction of red blood cells and to an increase in the generation of bilirubin. The jaundice is mild and due to unconjugated bilirubin [4]

Gilbert's syndrome: This is linked with reduced bilirubin conjugation in the liver as a result of an inherited decrease in enzyme activity. Hence, decreased excretion in the bile. The person affected may have temporary mild jaundice during period of illness or stress caused by elevation in their unconjugated bilirubin concentration [5].

Physiological jaundice: This is mild jaundice and appears in more than 50% of newborns as a result of immaturity of the baby's liver enzyme required to conjugate bilirubin. This mainly appears at 2 to 4 days and disappears by 7 to 10 days. If the jaundice appears early, persists or is severe the infant will be diagnosed for other causes and is likely to need treatment [6].

Obstruction of the bile ducts inside and/or outside the liver: This may result from a stone blockage, harm and scarring in the late stages of cirrhosis, cancer in the liver, or biliary atresia, a congenital condition associated with abnormal development or the bile ducts. It is reported that this leads to the back-up and pooling of the bile behind the obstruction and to the elevation of conjugated bilirubin in the blood. Gallstones can block bile ducts and pancreatic cancer may lead to a

blockage in the bile ducts outside the liver [7]

Furthermore, other rare conditions that may result to jaundice

Crigler-Najjar syndrome: This is an inherited condition that may lead to elevated bilirubin level; a gene mutation leads to a lack of the enzyme important for bilirubin conjugation [8]

Dubin-Johnson syndrome: This is an inherited disorder that impairs the secretion of bilirubin from liver cells after it has been conjugated. Indeed, the patients may have intermittent jaundice [9]

Rotor's syndrome: This is an inherited cause of mild intermittent jaundice; and is similar to Dubin-Johnson without the retention of bilirubin in the liver cells [10]

Pseudojaundice: In this condition, the skin of the person could turn yellowish when large quantities of carrots, pumpkin or melon are consumed due to the presence of beta-carotene; a temporary and benign condition not related to bilirubin or bile [11].

Medical Laboratory Tests

The aim of laboratory testing is to determine the cause of the jaundice and to evaluate the severity of the underlying condition. Initial testing is usually focused on the liver. Specific additional tests, such as viral hepatitis testing or testing to evaluate increased RBC destruction, may be requested along with or following the initial tests based on the patient's clinical findings and the physician's suspicions of the cause of the jaundice [12].

The Laboratory Tests include: Total bilirubin, ALT (alanine aminotransferase), ALP (alkaline phosphatase), total protein and albumin, Conjugated and unconjugated bilirubin, AST (aspartate aminotransferase), GGT (gamma-glutamyl transferase), Hepatitis A, B and C, Cytomegalovirus (CMV), Full blood count, Reticulocyte count (if FBC is abnormal) and prothrombin time [13].

Jaundice in newborns must be treated if it becomes severe, usually by exposure of the skin to blue light, because high unconjugated bilirubin levels can cause permanent brain damage [14]. In all other cases it is not the jaundice that needs to be treated but the underlying condition. In case the condition resolve, then the jaundice will resolve as well [15]. If an obstruction is present surgery may be necessary.

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