

## **Lipid Profile of Blood and Bile in Patients with Gall Stone Disease**

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### **Lipid Profile of Blood and Bile in Patients with Gall Stone Disease**

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**Introduction:** Cholelithiasis is the commonest disease affecting the gall bladder, which is a major cause of upper abdominal emergencies<sup>1,2</sup>. Various constituents of gall stones include cholesterol, bilirubin, calcium, triglycerides, fatty acids, phospholipids and proteins<sup>3,4</sup>. These stones may be classified as cholesterol, pigment and mixed stones<sup>5</sup> of which mixed stones constitute the majority and pure cholesterol stones being a rarity<sup>6</sup>. Researchers have tried to understand the pathogenesis of stone formation. Super saturation and concentration of bile, crystal nucleation and gall bladder dysmotility have been implicated as aetiological factors<sup>7</sup>. Super saturation of bile with cholesterol is found to be the most significant factor for formation of cholesterol stones<sup>8,9</sup>.

Hyperlipidemia may lead to cholesterol hypersecretion in biliary canaliculi. Relatively higher levels of cholesterol and reduced phospholipids as well as bile acids leads to nucleation of cholesterol crystals causing cholesterol stone formation<sup>10</sup>. However, high unconjugated bilirubin levels in bile is a prerequisite for pigment stone formation<sup>11</sup>. Altered lipid metabolism with more secretion of cholesterol into bile by liver generally is considered as the pathological cause for cholesterol stones<sup>12</sup>. Various situations like female gender, oestrogen therapy, hypertriglyceridemia, obesity, diabetes, excess fat diet and genetic causes have found to be having close relation with cholesterol stone formation<sup>12,13,14</sup>. Moreover, high levels of triglycerides (TGs) and low levels of high density lipoproteins (HDL) have been found to be consistently associated with gall stones<sup>15</sup>. Thus, the aim of our study is to determine the levels of various lipids in serum and bile viz. cholesterol, triglycerides, HDL-cholesterol, Low Density Lipoprotein (LDL)-cholesterol, and phospholipids in patients of cholelithiasis and in control subjects and to critically analyze these estimations and to make observations as to their role in the etiopathogenesis of gallstones.

**Reference:** Saraya A, Irshad M, Gandhi BM, Tandon RK: Plasma lipid profile in gallstone patients from North India. Trop Gastroenterol 1995, 16:16–21