

Quantitative analysis of gallstones in Libyan patients

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3066788>

Published online 2010 Jan 7. doi: 10.4176/091020

PMCID: PMC3066788

PMID: 21483549

Cited in:

Libyan J Med. 2010; 5: 1-6

Quantitative analysis of gallstones in Libyan patients

Abdalla M. Jaraari,¹ Peela Jagannadharao,^{1,*} Trushakant N. Patil,¹ Abdul Hai,¹ Hayam A. Awamy,¹ Saeid O. El Saeity,² Ezedin B. Abdel Kafi,² Maisoon N. El-Hemri,² and Mahmood F. Tayesh²

¹Department of Biochemistry, Faculty of Medicine, Al-Arab Medical University, Benghazi, Libya, ²Department of Surgery, Faculty of Medicine, Al-Arab Medical University, Benghazi, Libya *Peela Jagannadharao, Department of Biochemistry, Faculty of Medicine, Al-Arab Medical University, Benghazi, Libya. Email: moc.liamtah@oarahdannagajp

Abstract

Gallstone disease is one of the major surgical problems in the Libyan population; it is probably related to diet, especially excessive consumption of meat. The study was conducted to determine the composition of gallstones and their possible etiology in a Libyan population. The chemical composition of gallstones from 41 patients (six males and 35 females) was analyzed. The stones were classified into cholesterol, pigment, and mixed stones (MS). Cholesterol stones (CS) showed a significantly higher cholesterol content than pigment stones (PS) ($p=0.0085$) though not significantly higher than MS. Their phospholipid content and inorganic phosphates were higher than in the other types of stones and oxalate content was significantly elevated in comparison with MS ($p=0.0471$). In MS, the cholesterol, bile acids, and bilirubin were intermediate between cholesterol and PS, whereas triglycerides were significantly more than PS ($p=0.0004$). Bilirubin (0.0001) and bile acids ($p=0.0009$) were significantly higher than CS ($p=0.0001$). However, they contained the lowest amounts of sodium, potassium, magnesium, and oxalate. In PS, bilirubin ($p=0.0001$) was significantly higher than both groups. Bile acid content was significantly higher than CS ($p=0.0001$) but not significantly more than MS. They showed the highest values of calcium, sodium, potassium, magnesium, and chlorides compared to the other types of stones. High levels of cholesterol in stones and dyslipidemia associated with mixed as well as cholesterol gallstones suggest an etiological association and efforts to reduce dietary fat among the Libyan population may lead to decreased cholesterol and mixed gallstones.

Keywords: gallstones, chemical composition, Libya, cholesterol

References

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