**Abstract poster Endo 2014 Chicago**

**Cholecystectomy Patients Are Likely to be Insulin Resistant**

In recent years, a number of studies have investigated the association between cholesterol gallstone disease (GSD) and the metabolic syndrome (MetS). The main risk factors for GSD such as obesity, type 2 diabetes, dyslipidemia, and hyperinsulinemia are also well-known components of MetS (1). Thus suggesting that MetS is a risk factor for GSD (2) and that GSD might also be just another component of MetS (1). The current hypothesis is that the phenotype of GSD may result from the interaction between insulin resistance, genetic factors, and a number of environmental factors (1, 3).

The aim of this retrospective study was to investigate whether the relationship between GSD and MetS is present in the Lebanese population, particularly the predictors of insulin resistance (IR) among patients who reported a past history of cholecystectomy.

The medical charts of 1726 new non-diabetic patients who attended our weight-loss clinic in the years 2011-2013 were reviewed; 138 (8%) of whom reported having had a cholecystectomy.  IR was determined by the routinely calculated HOMA-IR index (value > 2.5 indicative of IR) (4). Age, height, weight, BMI, and plasma glucose and insulin levels at fasting and post oral glucose tolerance test (OGTT) were also collected. Multivariate logistic regression analysis was used to explore for predictors of IR.

Of the 138 subjects - mean age of 43.4±11.8 years - IR was present in 57% of the patients. Patients with IR had a mean BMI of 35.8±6.2 kg/m2, fasting glucose of 110.4±94.0 mg/dl, fasting insulin of 19.8±9.8 µIU/ml, 1-hour post OGTT glucose of 156±49.4 mg/dl, and 1-hour post OGTT insulin of 142.5±87.0 µIU/ml. There was a significant association between IR and having an elevated BMI (OR 1.196, 95% CI: 1.062-1.347, p<0.003), elevated fasting blood sugar (OR 1.109, 95% CI: 1.030-1.194, p<0.006), and elevated 1-hour post OGTT insulin (OR 1.022, 95% CI: 1.009-1.035, p<0.001) among patients with a cholecystectomy.

This is further proof that there is a very intricate relationship between GSD and IR in the Lebanese that needs additional investigation. Given the significant association shown in this study, we conclude that all patients reporting a past history of cholecystectomy should be fully investigated for the concomitant presence of IR and managed accordingly.

(1)   Di Ciaula A, Wang D, Bonfrate L, et al. Current views on genetics and epigenetics of cholesterol gallstone disease. Cholesterol 2013; 2013: 298421.

(2)   Chen L, Qiao Q, Zhang S, et al. Metabolic syndrome and gallstone disease. World J Gastroenterol 2012; 18: 4215-4220.

(3)   Wang D, Cohen D, Carey M. Biliary lipids and cholesterol gallstone disease. Journal of Lipid Research 2009; 50: S406–S411.

(4)   Matthews DR, Hosker JP, Rudenski AS, et al. Homeostasis model assessment: Insulin resistance and beta-cell function from fasting plasma glucose and insulin concentrations in man*.*Diabetologia1985; 28: 412-419