Astudy of serum insulin,c-peptide and amylase concentrations in patients with chronic hepatitis c virus infection

Ibrahim Mohamed El-Ashry Hussein

HCV affects not only the liver but also non-hepatic tissues. Anumber of extrahepatic clinical disorders have been recognized/some ofthese ’disorders have an established association with HCV while othershave probable or weak association. The association ofHCV with bothDM and hyperamylasemia is controversial.The aim of this work was to study serum insulin, C-peptide andamylase concentrations in patients with CHCV infection in a trial tosearch for any pathogenic impact ofHCV on some of the endocrine andexocrine functions of the pancreatic gland.Our study included one hundred male subjects divided equally into4 groups:Group 1: Control group.Group 2: Type-2 diabetes mellitus (DM) group.Group 3: Chronic hepatitis C virus (CHCV) group.Group 4: Chronic hepatitis C virus with type-2 diabetes mellitus (CHCVwith DM) group.Diagnosis of CHCV was based on the presence of positive HCVantibody by RIBA I I and confirmed by positive HCV antigen by PCRand liver biopsy. Diagnosis ofDM was dependent on past history ofDMor oral hypoglycemic drugs, fasting blood glucose> 126 mgldL and/or 2-hours postprandial glucose> 200 iri more than one occasion. -SUMMARY, CONCLUSION AND RECOMMENDATIONSAll patients and controls were subjected to the following:1- Full history taking and thorough clinical examination.2- Routine investigations including:a- Hepatitis markers: HCV antibody and HBsAg.b- Liver function tests: ALT, AST, albumin and bilirubin.c- Fasting blood glucose, 2-hours postprandial blood glucose andserum creatinine.3- Specific investigations including HCV-RNA, serum insulin, C-peptideand amylase concentrations.4- Abdominal ultrasonography.5- Liver biopsy for all patients positive for HCV antibody and antigen.from our study the following results were obtained:1- Only 8% of patients with CHCV and OM had positive family historyof OM while 88% of patients in diabetic group had positive familyhistory of OM.2- The mean duration ofHCV contamination was statistically longer inpatients with CHCV and OM compared to patients with CHCV only.3- 60% of patients with CHCV and OM had their liver disease diagnosedbefore OM. On the other hand 32% of these patients had OM prior toliver disease.4- The mean value of serum ALT and AST were significantly higher inpatients with CHCV infection (group 3) and in patients with CHCVand OM (group 4) when compared to the control group.5- The mean value of AL T was statistically higher in patients withCHCV and OM (group 4) compared to patients with CHCV (group 3).6- The mean value of both FG and 2-HPG were statistically higher inpatients with CHCV and OM (group 4) compared to

diabetic patients(group 2).SUMMARY, CONCLUSION AND RECOMMENDATIONS7- Serum insulin and C-peptide concentrations were:a- Statistically elevated in OM group (group 2) when compared to theco!!trol group.b- Non-significantly changed in CHCV group (group 3) whencompared to the control group.c- Statistically decreased in CHCV with OM group (group 4) whencompared to the control, the diabetic and HCV groups.8- No significant correlation was found between serum insulin or Cpeptidevalues and age of the patient, duration ofHCV contamination,serum ALT, AST and FG in both CHCV with OM and CHCV groups.In addition no correlation was found between serum insulin and Cpeptideand duration of OM in CHCV with OM -(group 4) and OM(group 2) groups.9- Serum amylase concentrations were:a- Non significantly changed in OM group (group 2) when comparedto the control group.b- Statistically elevated in patients with CHCV (group 3) and CHCVwith OM (group 4) when compared to the control group and thediabetic groups.c- Non-significantly changed in CHCV group with DM (group 4)when compared to CHCV group (group 3).10- No significant correlation was found between serum amylasevalues and age of the patient, duration ofHCV contamination, serumALT, AST and FG in both CHCV and CHCV with OM, groups.from our work we could conclude that:1-Hyperglycemia associated with CHCV infection can not contributeneither to type-I nor to type-2 OM and this may suggest asignificantrole ofHCV in the development of OM in these patients.2- The occurrence of hyperamylasemia in both CHCV and CHCV withDM groups and hypoinsulinemia in the latter group only may point tothe importance of some viral factors as length of contaminationperiod, genotype and/or infection titre in the development ofDM inthat group. Moreover, the absence of frank pancreatic disease despiteof this hyperamylasemia may suggest a state of subclinical pancreaticinfection in patients with CHCVinfection3- Pancreatic gland; both the endocrine and exocrine parts, might beincluded as one of the extrahepatic target ofHCV.In continuation to Our work, we recommend further studies on:1- Investigation of HCV antigen by PCR in pancreatic l3-cells in HCVinfectedexperimental animals to clarify the exact pathogenic role ofHCV infection in the development ofDM.2- Detection of HCV antigen in the pancreatic juice may throw lights onthe effect ofHCV on the exocrine pancreatic gland.3- The role of HCV factors namely; HCV genotype and viremia titre indevelopment ofDM and hyperamylasemia in CHCV patients.4- The HLA haplotypes and some autoantibodies specifically liverpancreasantibodies and their relation to the pancreatic affection inCHCV patients.5- The convenience of survey of hyperglycemia in patients with CHCVinfection for early detection and management of DM and itscomplications.