

College Dublin, Dublin, Ireland; <sup>2</sup>Department of Medical Statistics, Informatics and Health Economics, University of Innsbruck, Innsbruck, Austria; <sup>3</sup>Heart Failure Unit, St. Vincent's University Hospital, Dublin, Ireland

**Introduction** This analysis set to investigate the relationship between novel biomarkers of cardiovascular morbidity and mortality with diastolic dysfunction in a primary care cohort at heightened cardiovascular risk.

**Methods** This is a cross-sectional analysis of 616 participants of the STOP HF study with complete echocardiographic data who have established cardiovascular risk factors and no previously known ventricular dysfunction. Data were also available on medical history, medications, biomarkers of inflammation, lipid, renal and hepatic function and routinely measured clinical parameters. The cohort was categorised into those with and without diastolic dysfunction, omitting those with inconclusive echo data (n=85), leaving a population of n=531 for analyses. Preliminary analyses were run separately for both genders to establish univariable associates of diastolic dysfunction taking the presence or absence of diastolic dysfunction as the binary outcome. All co-variables with p-values  $\leq 0.2$  were introduced to forward multivariable logistic regression models to establish the foremost associates of diastolic dysfunction.

**Results** A high prevalence of diastolic dysfunction (67%) was observed in the cohort. In males, multivariable associates of diastolic dysfunction [Exponential  $\beta$ -coefficient (95% CI); p-value] were younger age [1.132; 1.09 to 1.179; <0.001], the absence of AIIA therapy [2.547; 1.18 to 5.49; <0.02] and higher ALP levels [28.813; 1.96 to 424.39; <0.02]. In females, diastolic dysfunction was associated with younger age [1.085; 1.05 to 1.12; <0.001] and higher GGT levels [4.838; 1.47 to 15.90; <0.01].

**Conclusions** This analysis demonstrates for the first time that parameters of hepatic function may be coherent indicators of early sub-clinical diastolic dysfunction. In this analysis, their association was superior to that more established risk factors and biomarkers such as BNP in this setting.

**P2-50 GGT LEVELS ARE A COHERENT INDICATOR OF CARDIOVASCULAR RISK IN PRIMARY CARE IN BOTH MEN AND WOMEN: RESULTS FROM THE STOP HF STUDY**

doi:10.1136/jech.2011.142976h.85

<sup>1,2</sup>C Conlon,\* <sup>1</sup>C Kelleher, <sup>3</sup>H Ulmer, <sup>2</sup>I Dawkins, <sup>2</sup>C O'Loughlin, <sup>2</sup>M Ledwidge, <sup>2</sup>K McDonald. <sup>1</sup>School of Public Health, Physiotherapy and Population Science, University College Dublin, Dublin, Ireland; <sup>2</sup>Heart Failure Unit, St. Vincent's University Hospital, Dublin, Ireland; <sup>3</sup>Department of Medical Statistics, Informatics and Health Economics, University of Innsbruck, Innsbruck, Austria

**Introduction** Gamma-glutamyltransferase (GGT) has been re-established as a marker of cardiovascular risk rather than simply an indicator of liver disease. However, there is little data on the associations between GGT and groups with conventional cardiovascular risk factors in the primary care setting. We sought to examine the factors associated with elevated GGT in an Irish primary care population.

**Methods** We explored the baseline data set of the STOP HF Study, a prospective study of a cohort with defined CV risk factors and no known ventricular dysfunction. To identify multivariable associates of higher GGT, we conducted logistic regression, using GGT above and below the 75th percentile as the binary outcome for males (49 u/l) and females (38 u/l).

**Results** Complete data were available in 879 participants. Multivariable associates of GGT [Exponential  $\beta$ -coefficient (95% CI); p-value] in males were younger age [0.97 (0.96 to 0.99); <0.02], higher diastolic blood pressure (BP) [1.05 (1.02 to 1.07); <0.001] total cholesterol [1.99 (1.19–3.39); <0.001] and HsCRP [2.01 (1.12–3.57); <0.02]

and lower urea [0.75 (0.63–0.89); <0.001] and HDL [0.33 (0.18–0.61); <0.001]. In females, higher body mass index [1.08 (1.03–1.13); <0.001] and systolic BP [1.01 (1.00–1.02); <0.05] and the application of  $\beta$ -blockers [1.49 (1.27–1.87); <0.02] was associated with higher GGT.

**Conclusions** We demonstrate that independently and even within its normal ranges, GGT is associated with markers of cardiovascular risk in a primary care population. Particularly in males, GGT appears to be a coherent risk factor associated with incipient underlying disease, in keeping with mechanistic evidence suggesting its role in atherogenesis. GGT measurement is an easily accessible and inexpensive biomarker for cardiovascular risk assessment.

**P2-51 HIGH RISK AREAS OF CHD IN A LOW INCIDENCE EUROPEAN COUNTRY**

doi:10.1136/jech.2011.142976h.86

<sup>1,2</sup>A I C Ribeiro,\* <sup>1,2</sup>M de Fátima Pina. <sup>1</sup>INEB - Instituto de Engenharia Biomédica, Porto, Portugal; <sup>2</sup>Serviço de Higiene e Epidemiologia da Faculdade de Medicina da Universidade do Porto, Porto, Portugal; <sup>3</sup>ISPUP - Instituto de Saúde Pública da Universidade do Porto, Porto, Portugal

**Introduction** Geographical differences in coronary heart disease (CHD) mortality have been widely described, but little is known about the incidence of such disease.

**Objective** Examine the geographic distribution of CHD hospital admissions from 1997 to 2008, in Continental Portugal, identifying relevant peaks of the disease.

**Methods** Hospital admissions due CHD (ICD9-CM: 410–414×, 429.2×) were obtained from the National Hospital Discharge Register. Age-standardised hospitalisation rates (ASHR) were computed by triennium (excluding 1997–1999, because of losses in georeferencing) for ages 35–74 years, at municipality level. Spatial statistics methods were applied to smooth ASHR and identify spatial clusters. Results were overlaid with a map of climate regions.

**Results** There were 356 119 hospitalisations with CHD as primary or secondary diagnosis, more frequent (66.7%) and expensive in men but more fatal and longer in women (p<0.001). Rate ratio (highest: lowest) were 5.2, 5.5 and 4.1 (men) and 9.7, 6.5 and 5.5 (women), respectively in 2000–2002, 2003–2005 and 2006–2008. Moran index of spatial autocorrelation showed moderate degree of spatial dependency (+0.36, +0.33 and +0.43 for men, +0.35, +0.33 and +0.41 for women, in 2000–2002, 2003–2005 and 2006–2008) and spatial clusters were identified. A Northeast-Southwest trend (from lowest to highest values) in ASHR was revealed, coincident with the borderline of the two main climate regions.

**Conclusions** Accentuated geographic differences in ASHR were observed, although rates remained stable in the study period. Higher fatality and lower cost in hospitalisations of women may reflect gender inequalities in the treatment. Spatial patterns suggested environmental factors are also determinants of CHD.

**P2-52 A SOBERING TEXT: DEVELOPING AN INTERVENTION DELIVERED BY MOBILE PHONE TO REDUCE BINGE DRINKING IN DISADVANTAGED YOUNG MEN**

doi:10.1136/jech.2011.142976h.87

I Crombie,\* D Falconer, J Coyle, L Irvine. University of Dundee, Dundee, UK

**Introduction** Disadvantaged men suffer substantial harm from heavy drinking. Effective brief interventions to reduce alcohol