UW MIRT 2005 ABSTRACTS

Factors of Hypertension and Correlates of Blood Pressure and Mean Arterial Pressure among Thai Population.*M. Lee, *L. Entzminger, V Lohsoonthorn, MA Williams. (University of Washington, Multidisciplinary International Research Training Program, Seattle, WA and Faculty of Medicine,King Chulalongkorn University, Bangkok, Thailand)

Objective: To determine the relevance of several risk factors for hypertension in a Thai population.

Methods: The authors used multiple linear regression to identify factors that influenced systolic (SBP), diastolic(DBP), and mean arterial blood pressures (MAP) in a study of 1,398 patients.

Results: Hypertensive risk factors were similar among men and women. Increased age and body mass index(BMI), as well as low educational attainment, were statistically significant risk factors for hypertension in men. For example, overweight men(BMI=25.0-29.9 kg/m^2) were1.88 times more likely to be hypertensive (odds ration[OR]=1.88,95% confidence interval[CI]=1.02-3.47) as compared with men who had a normal BMI (20.0-24.9 kg/m^2). Obese men ($\geq$30.0kg/m^2) had an increased risk, but not significant (OR=1.40,95%CI=0.34-5.69). Similar risk factors were identified among women. Overweight women had a 1.74-increased risk for hypertension (OR=1.74,95%CI=1.13-2.69).The corresponding risk was increased 3-fold among obese women (OR=3.05, 95% CI=1.76-5.29). Among men, age and BMI were positively associated with increased systolic, diastolic, and MAP. Men $\geq$60 years of age had an increase in systolic(β=18.89,$p<0.001$), diastolic(β=5.53,$p<0.001$), and MAP(β=9.89, $p<0.001$) values as compared with the referent group(< 40 years).Similar associations were noted among women.

Conclusion: Hypertension risk factors observed in this Thai population are similar to those found in Western populations. Prospective studies are needed to more rigorously evaluate causal relationships between risk factors and hypertension.

**Prevalence and Risk Factors of Hypercholesterolemia among Thai Men and Women Receiving Health Exams. ***D Le, *A Garcia, V Lohsoonthorn , MA Williams (University of Washington, Multidisciplinary International Research Training Program, Seattle, WA and Faculty of Medicine, King Chulalongkorn University, Bangkok, Thailand)

Objective: To evaluate risk factors of hypercholesterolemia and correlates of serum lipid concentrations in Thai men and women.

Methods: A cross-sectional study was conducted in 1,392 patients (380 men and 1,012 women) who received health exams during July 1999 - February 2000 at King Chulalongkorn Memorial Hospital, Bangkok, Thailand. Serum total cholesterol (TC), triglyceride (TG) and high density lipoprotein- cholesterol (HDL-C) concentrations were determined using standard procedures. Logistic and linear regression procedures were used to assess the association of several covariates with risk of hypercholesterolemia and lipid concentrations.

Results: Prevalence of hypercholestewrolemia (TC≥200 mg/dl) among men and women were 66.8% and 66.0% respectively. Among men, hypercholesterolemia was associated with older adult (odds ratio[OR]=3.26), and previous alcohol consumption (OR=2.05). Risk factors for women included advanced age (OR=3.19), and a family history of dyslipidemia (OR=1.59). Serum TC and TG were positively associated with age and previous alcohol consumption among men. Among women, TC and TG were strongly associated with age, body mass index (BMI) and family history of dyslipidemia. In men and women, HDL-C was inversely associated with BMI.

Conclusions: More emphasis should be placed in understanding the epidemiology of hypercholesterolemia and other dyslipidemias in Thai men and women. Increased information about risk factors will aid in the development of effective health promotion and disease prevention efforts.

**Prevalence of Metabolic Syndrome and Its Relationship to White Blood Cell Count in a Population of Thai Men and Women Receiving Routine Health Exams. ***V Lohsoonthorn , B Dhanamun, and MA Williams(Department of Epidemiology, University of Washington, Seattle, WA and Faculty of Medicine, King Chulalongkorn University, Bangkok, Thailand)

Objectives: To evaluate the prevalence of Metabolic Syndrome (MetS) and the relationship between MetS and elevated white blood cell (WBC) count among a population of patients receiving annual health exams.

Methods: A cross-sectional study of 1,383 patients (375 men and 1,008 women) was conducted who participated in annual health examinations at the Preventive Medicine Clinic of the King Chulalongkorn Memorial Hospital in Bangkok, Thailand during the period of July 1999-February 2000.

Results: Overall, the prevalence of the MetS was 12.8%, and more common among men than women (15.7% vs.11.7%). Advanced age and elevated WBC counts were the only statistically significant risk factors of MetS in this population. WBC count was statistically significantly correlated with high-density lipoprotein-cholesterol and triglyceride ($p<0.05$). Men with highest WBC count ($\geq 7.50 \times 10^3$cell/μl) had a 2.98-fold increased in risk of MetS (ODDS RATIO [OR] =2.98, 95% CONFIDENCE INTERVAL [CI]: 1.29-6.87), as compared with men in the lowest quartile ($<5.40 \times 10^3$cell/μl). Among women, the risk of MetS increased across successive quartiles of WBC counts (1.00, 2.26, 2.88, and 4.30, with the lowest quartile as the referent group).

Conclusions: The authors noted that MetS is prevalent among Thai men and women receiving routine health exams; and that WBC count (indicative of systemic chronic inflammation) is positively associated with MetS.

Erythrocyte Omega-3 and Omega-6 Polyunsaturated Fatty Acids and Preeclampsia Risk in Peruvian Women. C Qiu, *SE Sanchez,G Larrabure, R David, MA Williams.(Center for Perinatal Studies, Swedish Medical Center, Seattle, WA, USA , Hospital Nacional Dos de Mayo, Lima, Peru, Department of Epidemiology, University of Washington, Seattle, WA, USA)

OBJECTIVE: This case-control study was conducted in Lima, Peru, from June 1997 through January 1998 to assess whether alteration in maternal erythrocyte omega-3 and omega-6 fatty acids was associated with increased risk of preeclampsia.

METHODS: A total of 99 preeclampsia and 100 normotensive pregnant women were included. Maternal erythrocyte n-3 and n-6 fatty acids were determined using capillary gas chromatography/mass spectrometry and expressed as micromolar (mM) concentrations. We employed logistic regression procedures to estimate odds ratios (ORs) and 95% confidence intervals (CIs).

RESULT: N-3 fatty acids were consistently lower in preeclampsia cases than controls. After adjusting for confounders, the corresponding ORs for preeclampsia across decreasing quartiles of sum of long chain n-3 fatty acids were 1.0, 3.3, 2.4 and 3.3, respectively (p=0.07 for trend). A similar pattern was observed for eicosapentenoic acid (20:5n-3, EPA) and docosahexenoic acid (22:6n-3, DHA). There was no clear evidence of an association between arachidonic acid (20:4n-6, AA) and preeclampsia risk, the ORs in successively lower quartiles were 1.0, 1.1, 1.0 and 1.5 (95%CI: 0.6-3.7). A similar pattern was seen for the sum of long chain n-6 fatty acids.

CONCLUSION: In Peruvian women, low erythrocyte n-3 fatty acids appeared to be associated with an increased risk of preeclampsia.

Risk factors and severity of coronary arterial disease among emergency cardiology patients.*J Soh,*D Enquobahrie, N Doldize, S Vadachkoria, MA Williams(University of Washington, Multidisciplinary International Research Training Program, Seattle, WA & Emergency Cardiology Center, Rep. of Georgia)

Objective: To evaluate risk factors associated with severity of coronary arterial disease among cardiology patients in the Republic of Georgia.

Methods: This cross-sectional study was conducted among 99 patients who visited the Emergency Cardiology Center in Tbilisi, Republic of Georgia during months of January - December,2004.

Results: Most patients were young (mean41.4±3.2 years) men (95%). 72.7% of study participants had Body Mass Index (BMI) below 25kg/m^2.73.7% were past or current smokers. More than half were hypertensive and reported significant psychosocial stress. Dyslipidemic lipid profile was observed among 74.7% of participants. Multi-vessel disease was prevalent(78%) and associated with high rates of congestive heart failure. Higher rates of obesity, Type 2 DM, dyslipidemia and metabolic syndrome were observed among patients with multi-vessel disease as compared to single-vessel ones, although differences did not reach statistical significance. A graded increase in risk for multi-vessel arterial disease with increases of total cholesterol, triglycerides and low density lipoprotein concentrations was observed. Lower levels of high density lipoproteins were associated with increased severity of arterial disease (p=0.028).

Conclusion: In contrast to results from studies conducted in other populations, majority of patients seen at the center are young and have BMI below 25kg/m^2.High prevalence of multiple risk factors may account for this observation. Further studies are needed to confirm the observations, and clarify relative importance of each risk factor in this population to help in the prevention effort.

Diabetes Mellitus and Hypothyroidism among Emergency Cardiology Patients in the Republic of Georgia. G Chapidze, *N Doldize, D Enquobahrie, S Vadachkoria, J Soh, A Fitzpatrick, M Williams (University of Washington, Seattle, WA & Emergency Cardiology Center, Rep. of Georgia)

The prevalence of undiagnosed DM and HT and cardiovascular risk factors associated with DM and HT were investigated among patients (n=250) of an emergency cardiology hospital in Tbilisi, Republic of Georgia. Information on medical history, risk factors and current medical conditions was collected. The prevalence of DM was 29.5% (43/148) and 24.8% (25/101) among male and female patients respectively. About a third (30% male and 36% female) of DM cases were previously undiagnosed. The prevalence of HT was 14.3% (21/147) and 29% (29/100) among male and female patients respectively. Previously undiagnosed HT cases made up 95% and 72% of male and female HT cases respectively. Several cardiovascular risk factors were associated with DM among male and female (higher body mass index, higher triglyceride concentrations and metabolic syndrome), male (lower high density lipoprotein concentrations) and female (higher total cholesterol and low density lipoprotein concentrations and hypertension) patients (all p-values <0.05). Similarly, HT was associated with a number of cardiovascular risk factors among male and female (higher total cholesterol and low density lipoprotein concentrations) and male (hypertension) patients (all p-values <0.05). Compared with patients without DM or HT, significantly higher risks of hypertension were observed for patients with DM, HT and both DM and HT (Odds ratios 1.02,2.11,5.4 respectively; p-value for trend 0.025). Results of this study reinforce the need for vigilant attention to the presence of other co-morbidities such as DM and HT among cardiology patients.

Psychosocial stress, smoking and severity of coronary heart disease in the Republic of Georgia. ***D Enquobahrie, G Chapidze, N Dolidze, S Vadachkoria, A Fitzpatrick, M Williams (University of Washington, Seattle, WA & Emergency Cardiology Center, Rep. of Georgia)

Psychosocial stress (PSS), smoking and coronary artery disease severity were evaluated among patients (n=250) of an emergency cardiology hospital in Tbilisi, Republic of Georgia. Information on cardiovascular risk factors was obtained using questionnaire and medical records. Severity of disease was characterized according to presence/absence of any vessel disease and single/multi-vessel disease. A PSS history scale was constructed based on response to life event questions. Increasing disease severity was observed with increasing age, male gender, parental history and increasing body mass index. Among male patients (n=146), those with history of severe PSS (19%) had a greater than 9 and 4-fold increase in risk of having any vessel disease and multi-vessel disease as compared to those with none/mild PSS history (Odds Ratio [OR] 9.4 95%CI 1.1-78.1 and OR 4.6 95%CI 1.4-15.4 respectively). Among female patients (n=101), lifetime ever smokers (17%) had 3 and 5-fold increases in risk of any vessel and multi-vessel disease respectively compared to lifetime non-smokers (OR 3.1 95%CI 1.0-9.9 and OR 5.2 95%CI 1.3-21.0 respectively). PSS-disease severity and smoking-disease severity associations were not evident among males and females respectively. In a combined analysis, patients who had history of severe PSS and were ever smokers had a 4.6-fold increase in risk of any vessel disease compared to those patients who had none/mild PSS and no smoking history, although this association was not significant (Adjusted OR 4.6 95%CI 0.91-23.13; p-value 0.064). Further studies that investigate these associations in Georgian patients are warranted.