Prevalence of Vitamin D3 deficiency among patients undergoing angioplasty in a tertiary care centre in Eastern India

Ayan Kar, Madhumanti Panja, Debabrata Roy, Soumitra Kumar, Asok Kumar kar

Rabindranath Tagore institute of Cardiac sciences, Kolkata, India

Background: The prevalence of Vitamin D3 deficiency and its relationship with clinical parameters in patients undergoing angioplasty, i.e. the higher risk group, in Eastern India is not known. The present study aimed to address this issue.
Methods: 241 consecutive patients (212 male and 29 females) undergoing PTCA in a tertiary care centre were enrolled in the study. Blood samples for Vitamin D levels were collected along with routine pre-catheterization blood samples. Vitamin D levels were stratified as per Institute of Medicine (IOM) guidelines into normal (<30 ng/ml), insufficiency (21-29 ng/ml) and deficiency (<20ng/ml). All these patients underwent 2D echocardiogram as a part of pre catheterization workup and were divided into tertiles on the basis of EF (Ejection fraction) as <30%, 30-50% and >50%.The above data was analyzed with commercially available statistical software. Level of significance was assessed with Chi square test. A p value of <0.05 was considered significant.
Results: Of 241 patients 152(63.07%) were deficient, 40(16.59%) were insufficient and 51(21.16%) had normal Vitamin D3 levels. The group with deficiency had highest number of patients with acute coronary syndrome (n=39), ejection fraction <30% (n=74; p<0.05) and triple vessel disease (n=6) .We did not find any significant correlation between age, gender, lipid levels, presence or absence of hypertension, diabetes, smoking or alcoholism.
Conclusion: In this tertiary care centre of Eastern India majority of patients undergoing PTCA had vitamin D3 deficiency. The Vitamin D3 deficient group had significant number of patients with EF<30% and showed a tendency towards higher number of ACS (Acute Coronary Syndrome) and triple vessel disease on coronary angiograms.

Association of mortality with years of education in patients with ST-segment elevation myocardial infarction treated with fibrinolysis

G.V. Patil, U.B. Khedkar, Z. Shaikh

LTMGH, Mumbai, India

Background: Although previous work has evaluated the relationship of SES with CHD and the risk of myocardial infarction (MI), few studies have isolated the association between social class and risk of MI from the relationship of social class with outcomes after the occurrence of this event(1).In addition, the vast majority of research in this area has reflected single-country or regional experiences, predominantly involving populations in the United States or Scandinavian countries (2).The purpose of this study was to examine the association between lower socioeconomic status (SES), as ascertained by years of education, and outcomes in patients with acute ST-segment elevation myocardial infarction (STEMI).For the purpose of this study, the patient's level of education, defined as years of completed education or level of education attained—a generally acceptable and widely used surrogate of SES(3)- was used as a measure of this parameter.
Methods: We evaluated 326 patients with STEMI admitted in the LTMG Hospital, Mumbai from jan13- may14 &those receiving fibrinolytic therapy.Patients presenting after 24hrs of onset, associated CNS complications at presentation, those who have lost follow up were excluded from the study. Data on demographics, baseline characteristics, and medical therapies during hospitalization and at discharge, invasive procedure use, in-hospital adverse clinical events, and 7-day and 1-year mortality were collected prospectively.
Results: Of the 326 participants in this study, 19.8% had completed 6 years of school, 61.6% had completed high school (or equivalent), and 14.4% had between 10 and 14 years of education; the remaining 4.4% had 14 years of education.One-year mortality was inversely related to years of education and was 5-fold higher in patients with 6 years compared with those with 14 years of education (17.5% vs. 6.6%, p 0.0001). Nonetheless, years of education remained an independentcorrelate of mortality at day 7 (hazard ratio per year of increase in education: 0.86; 95% confidence interval: 0.83 to 0.88) and also between day 8 and 1 year (hazard ratio per year of increase in education: 0.96; 95% confidence interval: 0.94 to 0.98), even after adjustment for baseline characteristics.

Table: Clinical outcomes by years of education.

Yrs of education	<6	6–10	10–14	>14	P value
N (%)	64(19.8)	200(61.6)	47(14.4)	15(4.4)	
Reinfarction (%)	3(4.6)	8(4)	2(4.2)	1(6.6)	0.0002
CHF (%)	13(20.3)	32(16)	7(14.8)	2(13.7)	<0.0001
24Hrs mortality (%)	4(6.25)	2(1)	1(2.1)	0(0)	<0.0001
7day mortality (%)	7(10.93)	7(3.5)	2(4.2)	1(6.6)	<0.0001
1yr mortality (%)	11(17.5)	15(7.8)	2(4.2)	1(6.6)	<0.0001

Conclusions: When the number of years of education was used as a measure of SES, there was an inverse relationship such that significantly higher short-term and 1-year mortality existed beyond that accounted for by baseline clinical variables. Future studies should account for and investigate the behavioral, social, biological, and physiological mechanisms underlying this link between SES and cardiovascular disease outcomes.

Is there any analytical bias in determining the association between ABO Blood group and coronary artery disease

Janapati Ramakrishna, M. Jyotsna, D. Seshagiri Rao

Nizams Institute of Medical Sciences, Hyderabad, India

Background: Previous studies regarding the association between ABO blood groups and risk of coronary heart disease (CHD) have been inconsistent. We aimed to investigate the associations between ABO blood group and angiographically significant coronary artery disease from a tertiary care referral hospital from south India.
Methods: Retrospective analysis of 708 patient's records who underwent coronary angiogram between July 2013 to December 2013 at a tertiary care hospital from South India were included in this study. Patients were grouped into angiography positive (AGP) (N=387), angiography negative (AGN) (N=321) based on coronary angiogram. Patients with normal coronary angiogram and those with mild disease were grouped under AGN, and those requiring revascularization either by PCI or Coronary artery bypass grafting

were grouped under AGP. ABO Blood grouping and Rh typing were performed with standard agglutination techniques in all the patients. Statistical analysis was performed with chi-square and 2 proportion test.

Results: Total of 708 patients were included in the present study with a mean age of the study population was 56.8 years. Out of 708 coronary angiograms performed 387 patients were grouped under AGP and 321 patients were grouped under AGN.

When we correlate the presence or absence of CAD by CAG with different ABO blood groups , there was no association for any particular blood group, by chi-square analysis (Pearson Chi-Square = 8.399, DF = 10 ,p=0.59 and Likelihood Ratio Chi-Square = 9.546, DF = 10, p= 0.48). This test is the appropriate test when multiple blood groups required to compare with CAD and it was confirmed with Chi-Square Goodness-of-Fit Test. Even when we classified blood groups as O group or non O group (as done in previous studies) and applied 2 proportion test there is no association between O blood group and CAD (Z = 1.44 P-Value = 0.148).

Conclusions: These findings suggest that blood group of the individual does not have any influence in the pathogenesis of coronary artery disease, even with more appropriate testing method (chi-square) contrary to previous studies.

Do environmental factors affect platelet aggregation in Asians?

K.V. Siva Krishna, M. Jyotsna, D. Seshagiri Rao, B. Srinivas, Rama kumari, R.C. Barik, A. Siva Prasad, Lalitha

Nizam's institute of medical sciences, Hyderabad, India

Aim: To study the effect of environmental factors which influence the platelet aggregation/inhibition in South Asian CAD pts who are undergoing PCI for obstructive Coronary artery disease.

Methods: We studied 141 chronic stable angina (CSA) pts who undergone PCI for obstructive CAD from our institution (from south India) in 2013. Age, Body mass index, presence of Diabetes mellitus and Hypertension (systolic and diastolic BP), cigarette Smoking, Alcohol consumption, plasma Cholesterol levels, HDL, Triglycerides, Hemoglobin and hematocrit were noted in all pts. Along with all above said factors, platelet aggregation was tested after 75 mg of aspirin and 75 mg of clopidogrel for at least 7 days , before PCI.We used 20 % ADA aggregation of platelets (PA) by reflectance aggregometry , represented as percentage and platelet inhibition (PI) is calculated as 100 minus PA.

Results: Out of 141 CSA pts, 29 were females. Mean age of study population was 54±10 yrs (min 21, max 77 yrs), BMI was 25.8±3.7 Kg/m2(min 16.8, max 40.8), Haemoglobin was 12.8±2 g/dl(min 7.6, max18.2), Haematocrit was 38.5±5.7 % (min 20, max 54) with mean PI was 55.6±23.7% (min 1, max 96). There was no correlation between the PI and Age (0.031,p= 0.719), Body mass index(0.042, p = 0.680), plasma Cholesterol levels(-0.132,p = 0.389), HDL (-0.056, p = 0.715), Triglycerides(0.024,p = 0.878), Systolic (-0.061, p = 0.719) and Diastolic(-0.149, p = 0.378) BP, Hemoglobin (0.073, p = 0.389) and hematocrit (0.065, p = 0.447). Regression analysis and Analysis of variance did not showed any association of PI and sex (p=0.078.0.08), presence of Diabetes mellitus(p=0.3,0.4) or Hypertension(p=0.1,0.2), LV dysfunction(p=0.6,0.5), Smoking (p=0.2,0.2) and Alcohol consumption(p=0.9,0.9).

Conclusions: In south Asians environmental factors are not playing major role in degree of platelet aggregation/inhibition. Probably genetic factors may be important in this population.

Prevalence of obesity and its influencing factors among rural and urban school children in Prakasam District of Andhra Pradesh, South India

Shaik Subhani, N. Rama Kumari, D. Seshagiri Rao

Nizam's Institute of Medical Sciences, Hyderabad, India

Background: The Prevalence of Obesity among the rural and urban school children aged between 5-16 years is not clearly known in India. Knowing the prevalence and identifying the factors influencing childhood Obesity may help preventing the development of childhood obesity.

Methods: A cross sectional study followed by a case control study was conducted between February and April 2014. A total of 4213 school children between 5 and 16 years of age were enrolled and data on family history of obesity, dietary habits and physical activity was collected. 1177 students were from rural schools and 3036 from urban schools.

Results: Out of 4213 school children, 182 were Obese. The prevalence of Obesity was 4.32%. Prevalence was more in urban school children (4.7%) than in rural school children (3.23%). Snacking of high energy food taken by urban school children was associated with obesity even if the intake was once a week (P<0.002), 2-3 times a week (P<0.001) or daily (P<0.000). Less physical activity was associated with obesity in urban school children (P<0.05).

Conclusion: The study concluded that obesity was statistically significant in urban school children than in rural school children. The childhood obesity was associated with consumption of high energy foods and sedentary life styles, brought into light new facts that eating habits and physical activity was not associated with childhood obesity in rural schools, where family history alone was significantly associated. In urban schools, however, consumption of high energy foods and reduced physical activity was significantly associated with childhood obesity.

Risk factors for degenerative aortic valve disease in India: A case control study

Rajesh Pandey, D.S. Chadha, S.K. Malani, P.K. Hasija, A.K. Ghosh, N. Bajaj

MH CTC, India

Background: Degenerative aortic valve disease is being increasingly recognised amongst Indians. It often co-exists with coronary artery disease (CAD) and the studies done in the western population have shown that it shares the same risk factors which cause CAD. However a little is known in this context among the Indian subjects.

Objectives: To study whether traditional cardiovascular risk factors are more common among Indian patients with aortic stenosis (AS) than age, gender and CAD status matched patients without AS.

Methods: Ninety one consecutive patients with severe AS reporting for left heart catheterization prior to valve replacement surgery at a tertiary care centre were recruited for the study. They were compared with age and sex matched controls selected from a database of 3200 patients referred for elective diagnostic left heart catheterization for suspected CAD. Following traditional cardiovascular risk factors were assessed in all patients: age, gender, family history of CAD, smoking history, presence of diabetes, hypertension and dyslipidemia.