Research Paper

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"CORRELATION OF SERUM VITAMIN D3 LEVEL WITH EXTENT AND SEVERITY OF CORONARY ARTERY DISEASE .

MEDICAL SCIENCE

KEYWORDS : vitamin D ,coronary angiography and coronary artery disease.

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ABSTRACT

INTRODUCTION:Coronary artery disease (CAD) are the number one cause of death globally: more people die annually from CAD than from any other cause(1).An estimated 17.3 million people died from CADs in 2008, representing 30% of all global deaths(1). Of these deaths, an estimated 7.3 million were due to coronary heart disease and 6.2 million were due to stroke(2).Aim: To determine mean serum 25 hydroxy vitamin D level and extent and severity of coronary artery disease patients. Material and method:A cross-sectional study and Patients with 50% or more stenosis of at least one coronary artery as a case and without stenosis or less than 50% stenosis in coronary artery on coronary angiography as a control group. Conclusion: Vitamin D insufficiency, in this study was noted in 86.66% of patients in cases as compared to 56.66% of controls, and p value was 0.000387(<0.01) this difference is statistically significant..

INTRODUCTION :

coronary artery disease (CAD) are the number one cause of death globally: more people die annually from CAD than from any other cause(1).An estimated 17.3 million people died from CADs in 2008, representing 30% of all global deaths(1). Of these deaths, an estimated 7.3 million were due to coronary heart disease and 6.2 million were due to stroke(2).The number of people who die from CVDs, mainly from heart disease and stroke, will increase to reach 23.3. million by 2030(1,3). CVDs are projected to remain the single leading cause of death(3). The 16.5% of all deaths can be attributed to high blood pressure(4). This includes 51% of deaths due to strokes and 45% of deaths due to coronary heart disease(5).Coronary artery disease (CAD) is a major health concern worldwide. Despite tremendous innovations and improvements in investigative and therapeutic armamentarium, CAD remains an important cause of morbidity and mortality(6,7). This is not uncommon especially in the South-east Asian populations. incessant efforts have lead to the identification of newer risk factors for CAD. Many of these have robust data to validate their status, others appear promising contenders.Endothelial dysfunction plays an important role in pathogenesis of CAD and vitamin D deficiency is postulated to promote endothelial dysfunction. Despite rising trends of CAD in Asians, only limited data are available on the relationship between vitamin D, CAD, and endothelial dysfunction.

matrerial and method :

To determine mean serum 25 hydroxy vitamin D level in coronary angiographically proven coronary artery disease patients and to determine correlation between serum vitamin D3 level with extent and severity of coronary artery disease patients.sixty participants were taken from opd and the wards of hamidia hospital. After thorough clinical examination and all relevant investigations, patients underwent coronary angiography, as a part of the diagnostic work-up for their ailment. Study group divided in to cases and controls groups on basis of stenosis, Patients with 50% or more stenosis of at least one coronary artery as a case and without stenosis or less than 50% stenosis in coronary artery on coronary angiography as a control group. After evaluation, both the groups were compared for vitamin D level and to see the prevalence of vitamin D deficiency and other risk factors in cases and controls. Case group was further divided in three subgroups based on the extent and severity of diseases that is,Single vessel disease,Double vessel disease, Triple vessel disease and Similar comparisons were further evaluated and studied .

Result:

Mean serum 25OH vitamin D level in cases (15.9 ng/ml) was less than those in controls (21.67 ng/ml). The significance of difference between both means was calculated using students unpaired t test, t-value was 3.77 and p value was 0.000387(<0.01) which was statistically significant.26 cases out of 30 (86.66%) and 17 controls out of 30 (56.66%) were 25 OH vitamin D deficient this categorical data was assessed by unpaired student t test, t value = 3.77, p value 0.000387 (<0.01) which was statistically significant. Out of 30 cases, 17 cases with single vessels disease, 7 cases with double vessels disease, 6 cases with triple vessels disease and mean serum 25 OH vitamin D level was 16.59 ng/ml, 16.13 ng/ml, 13.68 ng/ml respectively wich was suggest that vitamin D deficiency associated with extent and severity of coronary artery disease.

Conclusion:

Vitamin D insufficiency, in this study was noted in 86.66% of patients in cases as compared to 56.66% of controls, and p value was 0.000387(<0.01) this difference is statistically significant. Various risk factors probably either predisposed to vitamin D deficiency or were associated with the deficiency. These factors in combination with vitamin D deficiency, possibly acted as precursor or associated with progression of coronary artery disease of various extent and severity. The observation recorded in this study support that those having greater extent of coronary artery disease had lower level of vitamin D in corollary and those without, have remarkable difference in prevalence of coronary artery disease(8).It can thus, be concluded that vitamin D is an important component of human body. Its deficiency may provoke athermanous plaque formation and establish coronary artery disease.(9)

OBSERVATIONS :table 1

Serum 25 OH Vitamin D level in cases and controls

Study Group	Serum 25 OH Vitamin D level (ng/ml)
Cases	15.90±5.10
Controls	21.67±6.65

table 2

Co-relation of extent & severity of coronary artery disease and Serum 25 OH Vitamin D level in cases

Extent of CAD	No. of Cases	Serum 25 OH Vitamin D level
Single Vessels Disease	17	16.59±5.10
Double Vessels Disease	07	16.13±5.54
Triple Vessels Disease	06	13.68±4.45

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