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A Study of Regional Wall motion abnormalities in patients of Ischemic Heart Disease.

Medical Science

KEYWORDS: Ischemic Heart Disease, Regional Wall Motion Abnormality, Hypokinesia

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ABSTRACT

100 cases of ischemic heart disease attended medicine OPD or admitted to Medicine ward, Civil Hospital, P.D.U. government medical college, Rajkot fromare included in study. All the patients of ischemic heart disease with age group 31-60 were clinically evaluated and underwent relevant investigation like hemoglobin estimation, total leukocyte count, differential leukocyte count, platelet count, RBS, serum creatinine, serum urea, 12 lead ECG as well as two-dimensional echocardiography. Echocardiographic evaluation done in each patient specifically to assess the regional wall motion abnormality (RWMA) by two-dimensional echocardiography.RWMA is assessed as normal, hypokinesia, akinesia or dyskinesia. The patients of ischemic heart disease are divided into three groups: stable angina, unstable angina and myocardial infarction. Study for regional wall motion abnormality (RWMA) shows that regional wall motion is less affected in cases of stable angina (27.90%), while in cases of acute coronary syndromes it is more affected (57.89%). Among RWMA, Hypokinesia is more observed in unstable angina (59.25%), while its prevalence is less in stable angina (27.09%) and myocardial infarction (53.33%) as compare to unstable angina and akinesia observed only in myocardial infarction. Evaluation of RWMA is significant as absent or transient RWMA suggest good prognosis, while RWMA predicts unfavorable prognosis.

INTRODUCTION

The WHO has drawn attention to the fact that Ischemic Heart Disease (IHD) is our 'modern epidemic'. IHD is expected to be the single most important cause of death in India by the year 2015 since there is a considerable increase in prevalence of IHD in urban areas in India during last decade[1]. Ischemic Heart Disease is likely to become the most common cause of death worldwide by 2020[2]. The pattern of IHD in India has been reported to be as follows[3].

- IHD appear decade earlier in developing countries as compared with age incidence in developed countries, peak period attained between 51-60 years.
- Males are affected more than females.
- Hypertension and diabetes accounts for about 40 percent of all cases.

AIMS AND OBJECTIVE: To study occurrence and grade of left ventricular wall motion abnormalities.

METHODS: A cross-sectional study consisting of 100 cases of ischemic heart disease is undertaken to evaluate echocardiography finding particularly regional wall motion abnormalities. This study was carried out in patients of ischemic heart disease attending Medicine OPD or admitted to Medicine Ward to Civil Hospital, P.D.U. Government Medical College, Rajkot.

Inclusion criteria: - Age: - 31-60 years ,- Patient with ischemic heart disease with hypertension. - Patient with IHD with congestive cardiac failure. - Patient with myocardial infarction. - Patient with angina pectoris.- Patient with positive treadmill test. - Patient with coronary angiography>50% - Patient with diabetes.Exclusion criteria: -Patient with valvular heart disease.40 ,- Patient with chronic obstructive pulmonary disease,- Patient with rheumatic heart disease,- Patient with congenital heart disease.

Instrument features:2-dimensional echocardiography with continuous wave, pulsed wave doppler with color doppler having transducer of 2.5 Mega Hertz frequencies by color doppler ultrasound machine with 2-D Echocardiography Model: Megas GPX installed at Medicine department. Various modes used in echo are following -Two dimensional echocardiography -M-mode echocardiography - Doppler echo ,Continuous wave and Pulsed wave 2D echocardiography was done with respect to following specifications: Regional wall motion abnormalities In order to simplify observations made in the study, patients were divided into four groups on basis of wall motion score. Wall motion score : Normal-1,Hypokinetic-2 ,Akinetic-3, Dyskinetic- 4

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RESULTS:

Following observations were made from Out of total 100 patients of ischemic Heart Disease, 43 Patients were having stable angina, 27 Patients were with unstable angina, 30 Patients were with myocardial infarction.

TABLE :-REGIONAL WALL MOTION ABNORMALITIES IN PATIENT WITH ISCHEMIC HEART DISEASE

	No. Of cases (n=100)	Percentage of cases (%)
Normal	55	55
Hypokinesia	44	44
Akinesia	1	1
Dyskinesia	-	-

Out of total 100-patient with ischemic heart disease 45 patients were having regional wall motion abnormality and 55 patients showing no regional wall motion abnormality. The finding supported by Cical et al[4]. Out of 45 patients with regional wall motion abnormality 44 patients were having hypokinesia and 1 patient was having akinesia.

TABLE:-REGIONAL WALL MOTION ABNORMALITIES IN PATIENTS WITH STABLE ANGINA, UNSTABLE ANGINA & MYOCARDIAL INFARCTION.

	Stable angina		Unstable angina		Myocardial Infarction	
Rwma	No.of cases n=43	(%)of cases	No.of cases n=27	(%) Of cases	No.of cases n=30	(%) of cases
Normal	31	72.09	11	40.74	13	43.33
Hypokinesia	12	27.90	16	59.25	16	53.33
Akinesia	-		-	-	1	3.33
Dyskinesia	-		-	-	-	-

Out of 55 patient without RWMA, 31 were of stable angina (72.09), 11 were of unstable angina (40.74%) and 13 were of myocardial infarction (43.33%).

Among 44 patients with RWMA 12 were of stable angina (27.09%), 16 were of unstable angina (53.33%) and 17 were of myocardial infarction (56.66%).

Among the patients of MI 16 were of hypokinesia (53.33%) Patient with akinesia was of myocardial infarction (3.33%). So, here regional wall motion abnormality more common in unstable angina which finding are tuning with Nixon et al [5]as compare to stable angina. RWMA is also more found in MI as compare to stable angina and this are consistent with Wyen et al[6].

CONCLUSIONS

All the patients of ischemic heart disease with age group 31-60 were clinically evaluated and underwent relevant investigation like hemoglobin estimation, total leukocyte count, differential leukocyte count, platelet count, RBS, serum creatinine, serum urea, 12 lead ECG as well as two-dimensional echo-cardiography.

Echocardiographic evaluation done in each patient specifically to assess the regional wall motion abnormality (RWMA) by two-dimensional echocardiography.

Study for regional wall motion abnormality (RWMA) shows that regional wall motion is less affected in cases of stable angina (27.90%), while in cases of acute coronary syndromes(unstable angina and myocardial infarction)it is more affected (57.89%). Among RWMA, Hypokinesia is more observed in unstable angina (59.25%), while its prevalence is less in stable angina (27.09%) and myocardial infarction (53.33%) as compare to unstable angina and akinesia observed only in myocardial infarction.Evaluation of RWMA is significant as absent or transient RWMA suggest good prognosis, while RWMA predicts unfavorable prognosis.

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