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A STUDY ON ECHO BASED SILENT CARDIAC ABNORMALITY IN PATIENTS ADMITTED IN ICU FOR NON CARDIAC CAUSES

General Medicine

Dr Rajiv Gupta Associate Professor Department of General Medicine KD Medical College Hospital & Research Center Mathura, Uttar Pradesh

Dr Baishampayan Goswami* Senior Resident Department of General Medicine KD Medical College Hospital & Research Center Mathura, Uttar Pradesh *Corresponding Author

ABSTRACT

In a country like India there is still a significant cases of cardiac origin due to rheumatic cause. It is worth mentioning that many patients admitted in ICU setting are having overt or covert cardiac lesion and most of it are due to rheumatic cause. This affects the management plan and treatment guidelines if cardiac lesions are not diagnosed at the onset. We intend to look at the prevalence of silent cardiac lesions in an ICU setting in our study who are admitted for non-cardiac causes.

KEYWORDS

LVH, RWMA, Echocardiography General Medicine

INTRODUCTION:

Cardiovascular diseases (CVDs) have now become the leading cause of mortality in India. A quarter of all mortality is attributable to CVD. Ischemic heart disease and stroke are the predominant causes and are responsible for >80% of CVD deaths. The Global Burden of Disease study estimate of age-standardized CVD death rate of 272 per 100 000 population in India is higher than the global average of 235 per 100 000 population.

The patient population admitted to medical ICUs (MICUs) is inhomogeneous, consisting of both sexes and with variable ages. The non-cardiac diseases responsible for admission to the MICU are diverse and usually include infection; shock; pneumonia and other forms of respiratory failure; acute and chronic renal or hepatic insufficiency; cerebrovascular diseases; haematological and autoimmune crises; and severe metabolic problems such as diabetic ketoacidosis.

The cardiovascular abnormalities that may be concurrent with non-cardiac illness can be missed and may pass undiagnosed if the physician depends solely on the clinical exam because of acuteness of the illness and the need for frequent concurrent mechanical ventilation.

AIMS AND OBJECTIVES:

To delineate the prevalence of silent cardiac lesions in patients admitted for non- cardiac causes in ICU setting

MATERIALS AND METHODS:

The study was undertaken in ICU of KD Medical College Hospital & Research Center, Mathura. We examined 100 cases of non-cardiac origin admitted in ICU. After taking informed consent, patients were given a questionnaire including name, sex , history of present illness etc & thorough clinical examination and relevant investigations were concluded on each patient. We performed Echocardiography in all the 100 patients. Our study period was for 2 months. We then observed the case carefully and results were analysed by standard statistical methods.

RESULTS:

Table 1: Number Of Subjects With Silent Cardiac Abnormality

TOTAL NUMBER OF SUBJECTS ENROLLED IN THE STUDY	100
TOTAL NUMBER OF SUBJECTS WITH CARDIAC ABNORMALITY ON ECHO	48

Table 2: Silent Cardiac Abnormalities Elucidated In The Study

VALVULAR ABNORMALITY	18
REGIONAL WALL MOTION ABNORMALITY	12
DILATED RA & RV	09
LVH	08
ALL CHAMBERS DILATED	01

In a significant number of patients (48) we found a cardiac lesion. Valvular abnormality was present in 18 patients, regional wall motion abnormality was present in 12 patients whereas 9 patients had dilated right ventricles and right atrium. The patient in this group mostly were elderly but the females who were affected were from a younger age group(<40 years).While the patients with a dilated right side of the heart had respiratory cause as the cause for admission in ICU.8 patients in the study were found to have left ventricular hypertrophy. We found one patient to be having all chambers dilated.

DISCUSSION:

Bedside Echocardiography provides an excellent tool for diagnosing and assessing the severity of critically ill patients. The best part is that it is a non-invasive test and is totally safe but requires expertise. Echo noninvasively elucidate different mechanical lesions as well as chambers and valves. The flow of blood through chambers is also evident from it. In the ICU, TTE may in certain cases fail to provide adequate image quality because of factors that can potentially hinder the quality of the ultrasound signal. However, significant improvements in transthoracic imaging with the advent of harmonics and contrast and digital technologies have resulted in a lower failure rate. As a result of the significantly improved technical quality of TTE imaging, the majority of ICU patients can be satisfactorily studied using this modality.

Bossone et al. studied 467 patients in medical ICUs with non-cardiac complaints and reported that 36% of them had significant cardiac lesions. Physician notification on the basis of a major cardiovascular abnormality was deemed necessary in a total of 52 patients (11%).In our study we also found that a significant number of subjects(48%) had a cardiac lesion and this changed the treatment modality. Valvular abnormality was present in 18 patients, regional wall motion abnormality was present in 12 patients whereas 9 patients had dilated right ventricles and right atrium. The patient in this group mostly were elderly but the females who were affected were from a younger age group(<40 years).While the patients with a dilated right side of the heart had respiratory cause as the cause for admission in ICU.8 patients in the study were found to have left ventricular hypertrophy. We found one patient to be having all chambers dilated.

CONCLUSION:

A significant number of patients admitted in ICU had cardiac lesion which completely changed the management plan. Though our study had the limitation of less number of subjects which may not be the true representation of the general population as a whole but it must be emphasised that finding a cardiac abnormality in non-cardiac cause of admission totally changed the management plan which cannot be ignored at all.

REFERENCES

1. Said ES, Abadeer MB. Silent cardiac abnormalities in medical ICU patients (Egyptian experience). Egypt J Intern Med 2013;25:80-5

2 Manasia AR, Nagaraj HM, Kodali RB, Croft LB, Oropello JM, Kohli Seth R, et al. Feasibility and potential clinical utility of goal-directed transthoracic echocardiography performed by noncardiologist intensivists using a small hand-carried device (SonoHeart) in critically ill patients. J Cardiothorac Vasc Anesth. 2005;19:155–159
3 Beaulieu Y, Marik PE. Bedside ultrasonography in the ICU: part 1. Chest. 2005;128:881–895
4 Warren J, Fromm RE Jr, Orr RA, Rotello LC, Mathilda Horst H. Guidelines for the inter- and intrahospital transport of critically ill patients. Crit Care Med. 2004;32:256–262
5. Cook CH, Praba AC, Beery PR, Martin LC. Transthoracic echocardiography is not cost-effective in critically ill surgical patients. J Trauma. 2002;52:280–284
6 Bossone E, DiGiovine B, Watts S, Marcovitz PA, Carey L, Watts C, et al. Range and prevalence of cardiac abnormalities in patients hospitalized in a medical ICU. Chest. 2002;122:1370–1376
7 Hussein Al-Atiyyat NM. Cultural diversity and cancer pain. J Hospice Palliat Nurs. 2009;11:154–164
8 Edwards RR, Doleys DM, Fillingim RB, Lowery D. Ethnic differences in pain tolerance: clinical implications in a chronic pain population. Psychosom Med. 2001;63:316–323
9. Joseph MX, Disney PJS, Da Costa R, Hutchison SJ. Transthoracic echocardiography to identify or exclude cardiac cause of shock. Chest. 2004;126:1592–1597
10. Kaul S, Stratienko AA, Pollock SG, Marieb MA, Keller MW, Sabia PJ. Value of two-dimensional echocardiography for determining the basis of hemodynamic compromise in critically ill patients: a prospective study. J Am Soc Echocardiogr. 1994;7:598–606
11. Snow JB, Kitzis V, Norton CE, Torres SN, Johnson KD, Kanagy NL, et al. Differential effects of chronic hypoxia and intermittent hypocapnic and eucapnic hypoxia on pulmonary vasoreactivity. J Appl Physiol. 2008;104:110–118
12. Kovacs G, Berghold A, Scheidl S, Olschewski H. Pulmonary arterial pressure during rest and exercise in healthy subjects: a systematic review. Eur Respir J. 2009;34:888–894