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A Study of Focussed Echocardiographic Evaluation in Cardiopulmonary Resuscitation Management

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I. BACKGROUND AND OBJECTIVES:

Focused echocardiographic evaluation in resuscitation management was evaluated by Emergency physicians with respect to incorporation into the cardiopulmonary resuscitation process, performance, and physician's ability to recognize characteristic pathology. The aim of the focused echocardiographic evaluation in resuscitation management examination is to improve the outcomes of cardiopulmonary resuscitation[1].

In emergency and critical care medicine, according to the resuscitation guidelines of the American Heart Association focussed echocardiography is in recommended identifying and treating correctable the causes of cardiopulmonary arrest[4].

Not many studies has been published in India regarding the efficacy of focussed Echocardiography in resuscitation. Time is an essential component for successful cardiopulmonary resuscitation (CPR).Studies have shown that "Point-of-care focused ultrasound" or "goal-directed ultrasound" in the evaluation of patients with cardiac arrest the immediate application of sonography or focussed echocardiography during resuscitation could result in improved patient outcome[2] .

Focussed echocardiography can identify acute global, left, or right heart failure, pericardial tamponade, thromboembolism and hypovolemia in suspected myocardial Insufficiency which cannot be made with standard physical examination or with the Electrocardiogram during cardio pulmonary resuscitation[3]. This study is been done to intend incorporation of focussed or emergency echocardiography to Improve outcomes[5].

II. MATERIALS AND METHODS:

A prospective, observational and semi interventional study undertaken over a period of 18months (Nov-2015 to May-2017), done on 90 adult patients (age>16 years) undergoing cardiopulmonary resuscitation who presented to Emergency Medicine Department at Vydehi Institute of Medical Sciences and Research Centre,Bangalore.Echocardiography performed every 2 minute simultaneously with pulse check within 10 second throughout the arrest, which is incorporated into the current Advanced cardiac life-support algorithm for cardiac arrest.

III. RESULTS:

Of 90 patients in our study, in our study rhythm at time of arrest was pulseless electrical activity in 58 patients (64.4%) and 32 had asystole (35.6%). Out of 90 Patients 59 (65.6%) had return of spontaneous circulation (ROSC) and 31 (34.4%) had no ROSC and 60 patients (66.7%) expired and 30 (33.3%) discharged.

In our study nil interventions in 79 patients (87.8%) and interventions with help of focussed echocardiography where done in 11 patients (12.2%). There is a statistical Significance was found between ROSC and outcome with $P = 0.003 < 0.01$.There is a Statistical significance was found between interventions and outcom e with $P = 0.0005 < 0.001$. The mean age was 49 with care time of 10 min and median age was 50 with care Time of 10 min.

IV. CONCLUSION:

On the basis of my overall results of study we conclude that Focussed echocardiography a non-invasive, rapid and bed side tool Echocardiography can be used as bed side tool, which is fast and efficient to detect various causes of cardiac arrest. In our study Echocardiography has higher diagnostic values in detecting various causes of cardiac arrest.

Hence, echocardiography can be immediately implemented, highly feasible and has Shown to drive clinical decision with high accuracy helping in early therapeutic Intervention in a patient with cardiac arrest in Emergency medicine department.

Key words: Acute coronary syndrome, Emergency medicine department, Focused echocardiography, Emergency echocardiography

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