

20° CONGRES NATIONAL DE REANIMATION

Echocardiography for the critically ill : 1 year experience of a noninvasive intensive care unit.

W. Brahim ; R. Amara ; A. Azouzi ; A. Khedher ; J. Ayachi ; R. Bouneb ; Y. Hamdaoui ; K. Meddeb ; M. Boussarsar

> Service de Réanimation Médicale Hôpital Universitaire Farhat Hached-Sousse

INTRODUCTION

- Bedside Trans-Thoracic Echocardiography (TTE) has become an important tool in the management of critically ill patients.
- Shock state +++
- Quick answers at bedside
- Repeatable
- Guide therapeutics
- HOWERVER, in our ICU we still not have TTE, and it's always made by cardiologist in the cardiology departement.

PATIENTS AND METHODS

- Retrospective
- All patient admitted for respiratory or circulatory failure
- From January 2014 to December 2014
- We recorded
 - Patients's characteristics
 - Ongoing treatment
 - Changes in diagnosis and/or management after TTE

RESULTS

- 168 patients included
- 47 (28%) had an ETT

Table 1 : Compared patients characteristics regarding to TTEpractice.					
Item	TTE practiced (n=47)	TTE not practiced (n=121)	р		
Gender (M) n(%)	31 (66.0)	82 (67.8)	0,48		
Underlying disease n(%)	43 (91.5)	93 (76.9)	0.02		
Hemodynamic failure n(%)	13 (27.7)	58 (47.9)	0.013		
Acute respiratory failure n(%)	47 (100)	110 (90.9)	0.024		
EKG changes n(%)	27 (58.7)	30 (24.8)	0.38		
Elevated cardiac troponin n(%)	13 (27.7)	11 (9.1)	0.40		
Non-invasive ventilation n(%)	36 (76.6)	50 (41.3)	< 0.001		
Invasive ventilation n(%)	22 (46.8)	86 (71.1)	0.003		
Vasopressors n(%)	26 (55.3)	32 (26.4)	0.11		

RESULTS

	TTE practiced (n = 47)
Main indications	
Investigation of cause of hypotension	75%
Assessment of LV function	12,5%
Signs of pulmonary embolism	7,5%
Main Findings	
Chronic pulmonary hypertension	31,9%
LV dysfunction	23,4%
Normal	21%

RESULTS

• Change in diagnosis of 4 (10%) and management of 8 (20%) patients in whom 15% was considered important

Table 2. Compared patients characteristics according to change in the diagnosis and/or management of the critically ill.

	Change + (n=8)	Change – (n=39)	р
Male n(%)	4 (50.0)	27(69.2)	0.25
Underlying disease n(%)	7 (87.5)	36(92.3)	0.53
Hemodynamic failure n(%)	4 (50.0)	9(23.1)	0.13
Acute respiratory failure n(%)	8 (100)	39(100)	
Invasive ventilation n(%)	3 (37.5)	19(48.7)	0.42
Non-invasive ventilation n(%)	6(75.0)	30(76.9)	0.61

Discussion

- Underprescribed
- TTE was less prescribed in patients with hemodynamic failure and invasive ventilation. This could be explained by transport related risk.
- The investigation of cause of shock was the most common indication of TTE and is found in most studies.
- This study demonstrated a significant therapeutic impact with a change in patient management only in 20% of all echocardiograms. This is similar to studies which have demonstrated therapeutic impact in 24%¹, but is faraway from the 51% found by Orme et Al.

1 Vignon P, Mentec H, Terre S, Gastinne H, Gueret P, Lemaire F.Diagnostic accuracy and therapeutic impact of transthoracic and transoesophageal chocardiography in mechanically ventilated patients. Chest 1994; 106: 1829–34 2 R. M. L'E. Orme*, M. P. Oram and C. E. McKinstry Impact of echocardiography on patient management in the intensive care unit: an audit of district general hospital practice, British Journal of Anaesthesia 102 (3): 340–4 (2009)

CONCLUSION

In our non-invasive ICU, TTE revealed underprescribed.

When performed, its impact on the diagnosis and/or the management of the patients is uncertain.

Bedside TTE would be a more valuable tool giving a rapid and repeated evaluation of the critically ill patients and avoiding transport related risk.