INITIAL CLINICAL EXPERIENCE WITH A NOVEL, MINIATURISED TRANSOESOPHAGEAL ECHOCARDIOGRAPHY PROBE

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Introduction

- Conventional haemodynamic monitoring (PAC, pulse pressure analysis) has limitations in many clinical situations
- Transoesophageal echocardiography (TOE) offers point-of-care haemodynamic assessment
- Interval monitoring with a conventional TOE probe is effective, but not commonly used, as it is known to be associated with complications.
- The recently introduced ClariTEE™ Probe:
  - Approved for an insertion time of up to 72 hours
  - Provides continuous qualitative and quantitative cardiac assessment
  - Early reports of its clinical performance have been promising.

Objectives

- We report our first experience using the ClariTEE™ TOE probe in a mixed population of ventilated critically ill patients.

Methods

- Clinical prospective quality review study.
- Criteria for probe insertion: haemodynamic instability (multiple vasopressors and/or inotropes) in a ventilated critically ill patient.
- Investigators: Consultant level (n=5) and senior trainee level (n=2) intensivists.
- Three primary views were obtained. An additional modified four chamber view was used to assess right ventricular function in a proportion of patients.
- All study images and interventions were reviewed by a senior investigator accredited in echocardiography.

Results

- 104 TOE studies were performed in 27 critically ill patients (age 71 y, 14 female), post cardiac surgery (n=15) and a mixed general intensive care population with cardiovascular compromise (n=12).
- Probe insertion was graded as easy in all patients and there were no complications associated with continuous use.
- All primary views were obtained in 25 (92.6%) patients, additional RV assessment was performed in 23 (85.2%) patients (Table 1).
- TOE assessment resulted in changes in management in 24 (88.9%) patients and improved haemodynamic conditions in 22 (81.5%) patients (Table 2).

TABLE 1: PATIENT AND STUDY CHARACTERISTICS

	Cardiac surgery n=15	General ICU n=12
Age	75	66.8
Female	8 (53.3%)	6 (50%)
Probe insertion time	27.9	25.1
No. of studies	66	38
Full TEE exam	14 (93.3%)	11 (91.7%)
Continuous TOE monitoring	14 (93.3%)	10 (83.3%)
Involvement of ICU trainee	10 (66.7%)	4 (33.3%)

TABLE 2: IMPACT OF TOE FINDINGS

	Cardiac surgery n=15	General ICU n=12
Changes in inotropes	13 (86.7%)	6 (50%)
Changes in fluids	13 (86.7%)	7 (58.3%)
Overall changes in therapy	14 (93.3%)	8 (66.7%)
Improved haemodynamics	14 (93.3%)	8 (66.7%)

Conclusions

- Continuous haemodynamic monitoring with the ClariTEE™ TOE probe can be successfully performed after a training period by a group of intensivists with mixed level of experience in TOE.
- Continuous TOE monitoring provided additional haemodynamic information in the majority of cases, and may guide therapy to improve haemodynamic parameters.