

Vscan*

Pocket-sized imaging device (PSID) effectiveness for ward-based transthoracic studies¹ (TTE); a clinical and economic study



STUDY BACKGROUND

Objectives:

- Clinical: Assess the usefulness of a PSID in evaluating focused clinical questions including: left ventricular function, presence of regional wall motion abnormalities, evidence of pericardial effusion, or exclusion of significant valve pathology
- Economic: Calculate cost effectiveness of PSID use in limited cardiac assessments conducted by experienced sonographers

Patient population: 92 inpatients where bedside ultrasound was ordered and performed

Equipment: Vscan was compared to Philips CX50 and Vivid *i* units

Duration: Enrollment over 3 months

Statistics: Kappa statistics were used to estimate the level of agreement and reproducibility

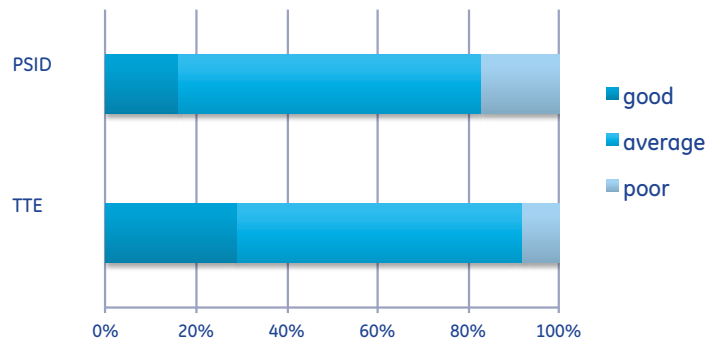
CLINICAL: PSID AND TTE IMAGE QUALITY FOR FOCUSED CLINICAL QUESTIONS

Assessment of chambers, valves and presence of effusion were compared between devices.

PSID: Qualitative assessments performed on the device

TTE: Quantitative measurements performed offline

Image quality



Results

In 90% (83 of 92) of patients the PSID provided the desired clinical information

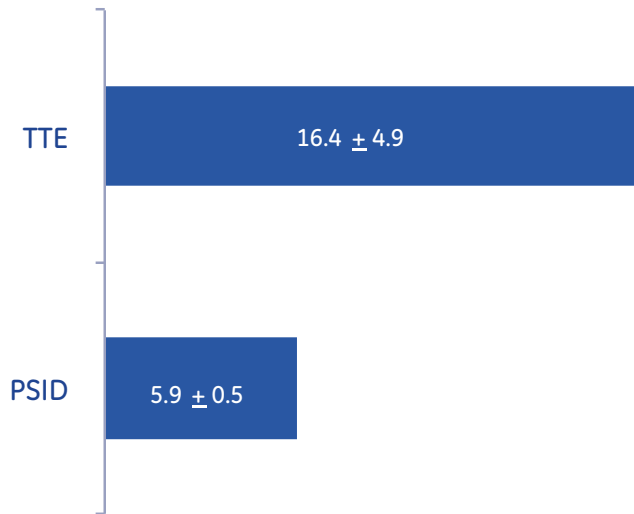
PSID is useful to exclude major valve pathology, but TTE including Doppler required to assess severity of lesions

Study involved experienced sonographers and echocardiography fellows

Results indicate PSID as a valuable alternative to standard approaches for focused clinical questions in ward-based echocardiography when performed and interpreted by experienced clinicians

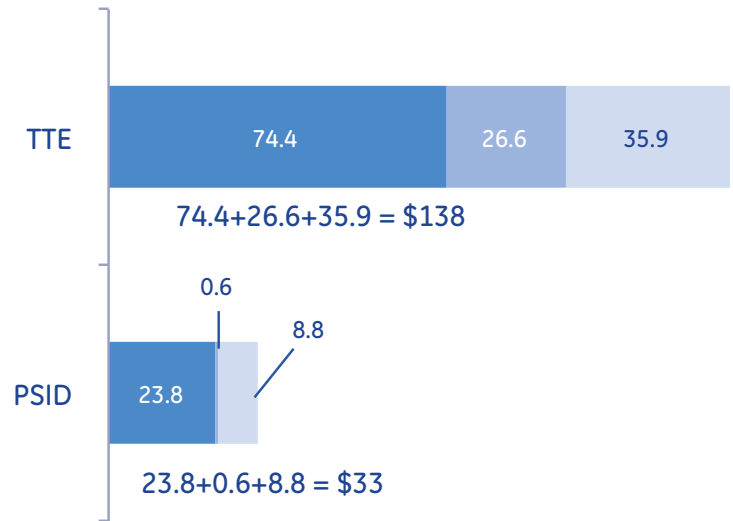


Mean Scanning Time** (min)



■ Travel, scanning, and reporting times

Mean Cost Per Scan*** (\$)



■ Sonographer ■ Instrument ■ Hospital

The use of PSID in limited patients referred for bedside TTE resulted in:

- 66% reduction in mean scanning and reporting times**
- 76% reduction in mean cost per scan***

IMPORTANT STUDY INFORMATION

- This was a single center study with a small focused population.
- PSID scan times were based on focused assessment while TTE (full echo) scan times were based on multiple imaging modes for complete assessment.
- Cost effectiveness analysis was based on cost minimization analysis.
- Sonographer cost calculations were based upon the scan times defined above.
- Hospital and instrument cost analyses were not well-defined in the article. Details of these endpoints must be requested from the authors.

¹ Silvia Gianstefani, Norman Catibog, Almira R. Whittaker, Antonios G Ioannidis, Francesco Vecchio, Peter T. Wathen, Abdel Douiri, Joseph Reiken, and Mark J. Monaghan European Heart Journal; May 24, 2013 and conducted at King's College Hospital, London UK

** Scanning time was calculated as time from beginning to end of exam. Vscan scan times were based on focused assessment while TTE utilized imaging modes including m-mode, pulsed and continuous wave Doppler modes.

*** Overall costs for both modalities were calculated in a UK health system using the combination of staff, equipment and hospital costs, in addition to travel and mean scanning and reporting times.

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