

Title

Appropriateness of timing intervals of serial trans-thoracic echocardiograms in patients with native valvular heart disease.

Introduction

Serial transthoracic echocardiograms (TTEs) are essential to follow up and manage patients with native valvular heart disease (VHD). Two established guidelines for management of VHD have been issued by the ESC/EACTS in 2017 and AHA/ACC in 2020. These provide recommendations on follow-up times.

Purpose

Malta's public hospitals offer a single echocardiography service at the Cardiac Lab. Follow-up TTEs for assessment of native VHD account for 12.55% of all TTEs performed there. This audit was performed to quantify the number of follow-up TTEs for native VHD performed earlier than guideline recommendations and determine the burden, in terms of working hours and days, on the system.

Methods

TTE requests made through iCM scheduled for May 2021 for follow up of VHD were selected and duplicates removed. Using the official CVIS reports, those with prosthetic valves or no previous TTEs on the system were excluded. The reported valve lesion with the shortest follow-up time was used. In total 135 individuals were included. Follow-up times were compared to guidelines.

Results

35-45.2% of the TTEs scheduled for May 2021 for native VHD were scheduled too early and on average, when performed early, this was 7.5-13.7 months so.

Comparing to the ECS/EACTS Guidelines, the lesion most commonly prematurely followed up was severe aortic regurgitation (AR) (66.7%), followed by mild AR (47.8%, averaging 10.7 months early) and mild aortic stenosis (AS) (44.4%, averaging 8.8 months early).

Comparing to the AHA/ACC guidelines, the lesion most commonly investigated early was mild AS (94.4%, averaging 15.5 months early), followed by mild mitral regurgitation (66.7%, 19 months early) and closely by mild AR (65.2%, averaging 19.2 months early).

Given that 20 minutes are allocated per TTE and assuming May 2021 followed a similar trend to other months, prematurely performed TTEs account for between 164 hours (>24 working days) (using 2017 ECS/EACTS guidelines) and 244 hours (>36 working days) (using 2020 AHA/ACC guidelines) annually.

Conclusion(s)

Our data shows that there is an issue in the scheduling of serial TTEs for nVHD at Mater Dei's Cardiac Lab, primarily in the follow-up of mild VHD. We recommend placing copies of simplified guidelines above every echocardiography reporting station for ease of reference when deciding follow-up time.