

Title: Diagnostic yield of 24-hour ambulatory ECG (Holter) monitoring in patients with palpitations.

Authors: Sara Xuereb, Kenneth Buhagiar, Rachel Xuereb, Mariosa Xuereb

Introduction: Palpitations are a frequent presenting symptom of cardiac disease and 24-hour ambulatory ECG monitoring is often requested as part of the workup of such patients.

Aim: To assess the diagnostic yield of 24-hour ambulatory ECG monitoring over a 6-month period in patients with palpitations. These results were compared to those of a previous audit performed in 2003.

Methodology: All 24-hour ambulatory ECG reports performed between 1st March 2015 and 31st August 2015 were analysed. Only requests specifically and solely requested for the symptom of palpitations were included.

The results were analysed for the presence of supraventricular extrasystoles (SVEs), paroxysmal supraventricular tachycardia (PSVT) or paroxysmal atrial fibrillation (PAF), permanent atrial fibrillation (AF), ventricular extrasystoles (VEs), ventricular bigeminy or trigeminy (Vbig/Vtrig), ventricular couplets (VCp), ventricular triplets (VTrip), ventricular tachycardia (VT) and accelerated ideoventricular rhythm (AIVR), as well as atrioventricular block/pauses.

SVEs and VEs were considered as very rare if there were <100 per 24 hours, rare if there were between 100-500 per 24 hours, occasional if there were 1000-3000 per 24 hours, and numerous if there were 3000-7000 per 24 hours.

Results: A total of 588 Holter requests for patients with palpitations were received at the Cardiac Lab between 1st March 2015 and 31st August 2015. In the majority of patients this was the only clinical information provided on the request form.

There were 251 males and 337 females (mean age 57.3 years). The age of the male patients ranged between 7 and 97 years (mean age of 58.9 years), while for females the ages ranged between 4 and 93 years (mean age of 56.2 years).

The most frequent arrhythmia was the presence of SVEs (present in 540 patients; 91.8%). These were very rare in 240 patients (44.4%), rare in 231 patients (42.8%), occasional in 51 patients (9.4%), and numerous in 18 patients (3.3%).

PSVT was present in 134 patients (22.8%), while PAF was present in 15 patients (2.5%). Permanent AF was present in 15 patients (2.5%). VEs were recorded in a total of 409 patients (69.5%). They were very rare in 170 patients (41.6%), rare in 163 patients (39.9%), occasional in 53 patients (13%), and numerous in 23 patients (5.6%).

Ventricular bigeminy and trigeminy were present in 79 patients (13.4%).

A total of 75 patients (12.8%) had ventricular couplets detected, while 31 patients (5.3%) had ventricular triplets detected. 26 patients (4.4%) had VT episodes and 6 patients (1%) had AIVR.

Second degree AV block was present in 11 patients (1.9%). Pauses exceeding 2 seconds in duration were present in 20 patients (3.4%).

Conclusion: The majority of patients referred for palpitations had only very rare/rare SVEs or VEs present on Holter monitoring. More significant arrhythmias (PSVT/PAF, numerous VEs, ventricular bigeminy/trigeminy, ventricular couplets/triplets, VT) were only present in 39.3% of patients. Compared to the previous audit performed in 2003, the diagnostic yield of clinically significant arrhythmias as a cause for palpitations has increased from 27.3%, indicating that this investigation is being more adequately utilised in such patients. However, the diagnostic yield can be further improved by more careful selection of patients.