EDITORIAL

GP auscultation a poor predictor of valvular heart disease

AUTHOR
Dr Peter Savill
BSc MBBS PGDipCard
GPwSI Cardiology,
Southampton, UK

AUSCULTATION HAS ONLY LIMITED ACCURACY IN THE DETECTION OF VALVE DISEASE IN asymptomatic patients and is a poor diagnostic screening tool in primary care, a UK study has found.[1]

The Oxfordshire Valvular Heart Disease Population Cohort (OxVALVE) Study, a community-based screening study involving 4,000 patients, set out to identify the prevalence of undiagnosed valvular heart disease in asymptomatic subjects over 65 years of age. The investigators were blinded to the echo findings. Newly detected valve disease was classified as mild (mild regurgitation of any valve or aortic sclerosis - thickening with no stenosis) or significant (at least moderate regurgitation or mild stenosis of any valve).

Auscultation is a poor diagnostic tool for the screening of asymptomatic patients in primary care'

A subset analysis was carried out in 251 patients from two primary care locations in the OxVALVE study. The mean age of these patients was 75 ± 6 years and just over half (51%) were male. Cardiac auscultation was performed by one of two experienced GPs. The aim was to investigate the value of auscultation in a real life outpatient setting by GPs who had no specialist training in cardiology. A direct comparison of the accuracy of conventional cardiac auscultation by GPs and cardiologists in the same patients was not possible for logistical reasons.

Mild valvular heart disease was found in 170 (68%) of 251 patients and significant disease in 36 (14%). The sensitivity of auscultation was found to be low for the diagnosis of mild disease (32%) but slightly higher for significant disease (44%), with specificities of 67% and 69%, respectively. A sub-group analysis showed that auscultation had poorer predictive values in overweight patients (BMI ≥ 25 kg/m^2), see table 1, below.

With the availability of highly effective surgical and percutaneous interventions the early identification of severe valve pathologies is more important than ever. Listening to heart sounds is an important clinical skill much loved of undergraduate clinical examinations but which often drifts into disrepair particularly with the relative ease of access to powerful imaging tools such as echocardiography.

The study authors concluded that cardiac auscultation has limited accuracy for the detection of valve disease in asymptomatic patients and is a poor diagnostic screening tool in primary care. Furthermore, they suggest that ensuring easy access to echocardiography in patients with symptoms suggestive of valve disease is likely to be a better diagnostic strategy.

The authors state: 'Our findings demonstrate that cardiac auscultation has only modest sensitivity for the detection of valvular heart disease in an asymptomatic population, and the low negative likelihood ratio suggests that auscultation is a poor diagnostic tool for the screening of asymptomatic patients in primary care.

'The wider OxVALVE study indicates that the diagnostic yield of echocardiography is significantly increased by the inclusion of atrial fibrillation or cardiac symptoms of possible underlying valvular heart disease – initial screening in this high-risk group could be performed using point of care echocardiography to reduce demand on scarce echocardiography resources.'

Table 1

Diagnostic accuracy of auscultation by GPs for the prediction of significant valvular heart disease (VHD) in normal weight vs overweight patients

	BMI < 25 kg/m^2	BMI ≥ 25 kg/m^2	P value for difference
Number of patients	86	165	
Significant VHD cases	21 (24%)	15 (9%)	0.002
Sensitivity*	57% (34-78%)	27% (8-55%)	0.40
Specificity*	71% (58-81%)	69% (61-76%)	0.99
Positive predictive value*	39% (22-58%)	8% (2-19%)	0.01
Negative predictive value*	84% (71-92%)	90% (83-95%)	0.84
Positive likelihood ratio*	1.95 (1.15-3.32)	0.85 (0.36-2.04)	0.11
Negative likelihood ratio*	0.61 (0.36-1.02)	1.07 (0.77-1.48)	0.07

*95% CI in parentheses

REFERENCE
1 Gardezi SKM, Myerson SG, Chambers J et al. Cardiac auscultation poorly predicts the presence of valvular heart disease in asymptomatic primary care patients. *Heart* Published Online First: 24 May 2018. doi: 10.1136/heartjnl-2018-313082

We welcome your feedback

If you would like to comment on this article or have a question for the author, write to: **editor@thepractitioner.co.uk**