Relearning cardiac auscultation skills – *Is there a need*?

By Ms Ng Wei Fern, Final Year Medical Student

The stethoscope has been a time-honored tool, and long regarded by most to be the hallmark of a physician's practice. But, do most doctors still retain the auscultation skills acquired from medical school? This must be an interesting question to most of us. Or perhaps even a question we all fear to answer. Indeed, how do our doctors here fare in cardiac auscultation? Our study "Retraining Physicians in Cardiac Auscultation - is there a need?" seeks to find the answer.

106 doctors from the Family Medicine Training Program (FMTP) participated in our study. Most of them are currently running their own clinics in general practice or working in polyclinics. Others are medical officers working in restructured hospitals. They were asked to listen to and interpret 10 sets of standard cardiac sounds stored on the Littman E4000 electronic stethoscopes.

The mean score was 4 correct diagnoses out of the 10 sounds with a range from nil to eight correct. Systolic murmurs were more often correctly identified compared to the more technically difficult diastolic and added sounds. In 1997, Mangione and Nieman[1] reported a similar study in the US and found their physicians achieved mean scores of 2.5-2.6 out of a maximum of 12. In that light, the performance of doctors in our study may not be as disheartening as it first appears to be. Are the low scores due to a greater reliance on technology in developed countries (like the echocardiography) and less clinical exposure as many patients with abnormal cardiac sounds are sequestered in cardiac departments? What are the reasons some doctors perform better than others?

In 1960, Butterworth and Repert[2] found that physicians' auscultatory abilities declined with increasing time in clinical practice. We arrived at the same conclusion in our study, with a significant drop in performance at the watershed of 8 years after graduation. We also found that the place of current practice and the time spent previously in internal medicine, cardiology and pediatrics (where higher level of exposure to cardiac auscultatory signs is expected), did not improve auscultatory scores. This suggests that cardiac auscultation skills are maintained not just by working stints in relevant departments, but that specific attention must be accorded to such skills throughout the course of our medical practice, lest they erode with time.

We recognize certain limitations of our study. Firstly, it was carried out on a select group of doctors and hence may not be representative of Singapore's medical practitioners in general. Secondly, the study only assessed accuracy in identifying selected cardiac sounds and the scores do not reflect diagnostic proficiency, as we know that other clinical input are essential in working up real patients.

However, this study suggests that it is important to revisit and reinforce basic clinical skills in the continuing medical education of doctors, for CME is not just about learning new advances in medicine.

Reference:
1. Mangione S, Nieman LZ. Cardiac auscultatory skills of internal medicine and family practice trainees. JAMA 1997; 278(9):717-22.
2. Butterworth JS, Reppert EH. Auscultatory acumen in the general medical population. JAMA 1960; 174(1):114-6.

The E-stethoscope research team celebrating the completion of the projects, X'mas 2003: (L –R) Ng Wei Fern, Michael Lam, Dr Carolyn Lam, A/P Cheong Pak Yean & Ho Khek Yu, Hey Hwee Weng, Theodric Lee and Boey Pui Yi

Research projects born of SARS

234 pre-clinical medical students were denied access to real patients for their 'elementary clinics' during the SARS outbreak in 2003. 3 members of the teaching staff of National University of Singapore (NUS) came out with an innovation to use electronic stethoscopes to teach them cardiac auscultation skills. 5 final year medical students joined the research team under the NUS medical student elective programme. The outcome – 2 innovative research projects on the novel use of e-stethoscopes.

The team confirmed the validity and effectiveness of this teaching tool and presented it as a poster exhibit in the 2003 NHG Annual Scientific Congress. In addition, a parallel study on 106 doctors doing the FM Training Programme (FMTP) revealed that proficiency in cardiac auscultation deteriorated significantly 8 years after graduation from medical school regardless of their hospital work experience:

Both studies were shared as poster exhibits in the 2003 NUS-NUH Annual Scientific Meeting. Medical students, Theodric and Michael further presented the studies in the 2nd Symposium of the Asian Medical Education Association held in Shanghai, China in Nov 2003. Wei Fern won the 1st prize for the best oral presentation at the 1st Asian Pacific Medical Education Conference held in Singapore in Dec 2003 for her presentation of the doctors' study. The NHG-NUS Simulation Training Laboratory now uses the e-stethoscope as one of its training tools. This innovation caught media attention during the official opening of the laboratory and was reported in both broadcast & print media on 23rd Oct '03. Research papers based on these two studies have been submitted to peer-reviewed journals for publication.

Necessity inspired this innovation. The camaraderie of the whole team and the tenacity and hard work of the student researchers led to its successful completion. E-stethoscopes are now used to teach medical students and doctors cardiac auscultation skills in Singapore.