

Lung auscultation: back to basic medicine

Basic physical examination of the chest still employs the four classic techniques of inspection, palpation, percussion and auscultation [1]. Among these, auscultation is the most magical one: a stethoscope draped around the neck still remains the badge of the medical professionals and is worn with pride. This diagnostic modality depends nevertheless on good generation and perception of sounds, and can be misinterpreted in a noisy or distracting environment.

Moreover, the significance of breath and adventitious sounds requires the use of a standardised terminology in order to enhance understanding and communication [2]. When interpreted with care and integrated with other findings (medical interview of patient's history, general and thoracic physical signs), lung auscultation may provide important insights into the type and location of various lung diseases [3].

The article in this issue of the *Swiss Medical Weekly* by Leuppi *et al.* unfortunately tends to demonstrate that an abnormal lung auscultation could not contribute considerably to the final diagnosis in patients presenting with chest symptoms at an emergency room setting [4]. The problem is that they do not describe what kind of auscultation signs they looked for nor the presumptive diagnosis they supposed from these signs.

Despite the fact that lung sounds interpretation can by some way be subjective, some of these signs went through the rules of Evidence Based Medicine with success. Several works on that topic have been well summed up in two recent books [5-6]. The accuracy of lung sounds are there described in terms of likelihood ratio (LR), where a $LR > 2$ increases the probability of a diagnosis and > 10 affirms it [7]. Adventitious sounds seem to be good signs: wheezing perceived during quiet respiration predicts asthma ($LR + 6$) or COPD ($LR + 6$); fine tele-inspiratory crackles are frequent in pulmonary fibrosis ($LR + 5,9$) but fine and coarse tele- and pan-inspiratory crackles are also found in congestive cardiac failure ($LR + 3,4$). Fine or coarse proto-inspiratory crackles rule in chronic bronchitis ($LR + 14$ to 20). Inversely attenuation of normal breath sounds rules in emphysema (LR

+ $10,2$) when quantified at a value $< 9/24$ by using Pardee's score. Other signs may need to be associated with other symptoms to become useful: accentuated bronchial breath sounds only predict pneumonia if associated with fever and cough ($LR + 3,3$). Old forgotten signs have nevertheless good predictive values: all voice-generated sounds (bronchophony, egophony and pectoriloquy) are manifestations of the same acoustic properties of consolidated lungs and thus have similar diagnostic significance for pneumonia when associated with cough and fever ($LR + 4,1$).

Thus the lung auscultation as well as the complete physical examination should be guided by a patient's history and objective symptoms.

The pessimistic conclusions of Leuppi's paper must be reinterpreted in view of possible interfering factors [4]. Were privacy, warmth, good light and quiet surrounding atmosphere, all essentials for good lung auscultation, sufficiently respected? What signs did they look for and what kind of decision tree did they use starting from their clinical observations? For the emergencies related to chest pain and coronary disease lung auscultation is often little useful.

Lung auscultation is only one part of the emergency patient management but it is an essential one. It cannot be interpreted by itself, but should be considered in the light of the complaints and the various clinical features. It remains nevertheless a cornerstone of the diagnosis of chest diseases.

"The most beautiful girl in the world can only give what she has ..."

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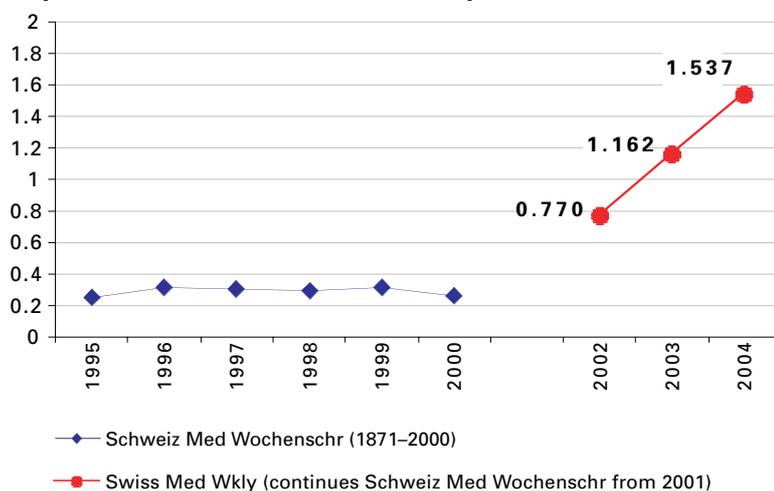
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