

QUANTITATIVE DOCUMENTATION OF WHEEZES IN ASTHMA CLINICS USING AN AUTOMATIC WHEEZE QUANTIFICATION DEVICE.

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Aim: Stethoscopic auscultation is an important component of clinical assessment of asthma, however this is subjective, qualitative and lacks a permanent record. We evaluated the use of an automatic wheeze quantification (AWQ) device (PulmoTrack® Model 1010 KMAT, Yokneam Illit, Israel) to document wheezing in asthma subjects.

Methods: Digital recordings of breath sounds were made during AWQ measurements in 21 patients with asthma of varying severity. Sound records were played back and scored by expert physicians for the presence of wheeze, whistles and rhonchi. The physicians' findings were compared to the Wheeze Rate (%ratio of wheezing time to breathing time), as determined by the device.

Results: We examined a random sample of 70 sound files generated by the patients. At the time of the examination 70% of the patients had wheezing. Using the physicians' scores as a reference, the AWQ measurements were found to have a sensitivity of 89% (n=37) and a specificity of 91% (n=33) for the presence of sounds associated with airway obstruction.

Conclusions

Automatic wheeze detection can quantify wheezes accurately and reliably in asthmatic patients. Objective and quantitative wheeze documentation may be a useful tool in the assessment of asthma patients in the future.

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