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**Is vibration response imaging (VRI) useful for early detection of high altitude pulmonary oedema (HAPE)?**

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**Purpose:** With increase of mountain hiking high altitude pulmonary edema might become a more common problem. Besides hereditary factors, 10% of the normal population are considered to develop pulmonary hypertension under hypoxemia. We investigated, whether these persons are also at risk to develop HAPE and whether this can be detected by VRI. **Methods:** In the first group from Heidelberg 23 individuals climbed the Margherita hut at 4559m within 24h and stayed there for 48h. Besides clinical examination, spirometry, blood gases, echo-cardiography and x-ray as gold standards (GS) the VRI, a computer-based, non-invasive and radiation free device was applied. It provides dynamic real time images of the lung and quantitative data by recording vibrations from the chest wall, using 40 piezoelectric sensors, and converts the signals to dynamic grey scale images of the lung. **Results:** At sea level 23 persons were screened and 3 showed minor changes in the VRI images. 11/16 completed the study. 2 developed HAPE, diagnosed by GS and VRI. 1 had pos VRI and suspicion by GS, 2 were suspected by both, 2 pos by VR and neg by GS, 3 neg for both and 2 neg by VRI but susp. by GS. **Conclusions:** From the results VRI might have a high sensitivity in detecting fluid collections in the lung at an early stage. The algorithms for analyzing the dynamic images and quantitations are currently revised and is currently applied in the second group from Zurich.

**Clinical implications:** If the VRI is proved to be highly sensitive for detection of fluid collection within the lung it could become a useful bedside method for managing cardiac failure also in the ED and ICU.