

SPECIAL CHARACTERISTICS OF THE RECORDING OF BREATHING PATTERN IN SUBJECTS WITH ANXIETY

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Anxiety disorders are associated with changes in respiration, altered perception of respiration and inappropriate response to manipulation of breath [1]. Thus the altered respiration can be considered as psychological marker of the anxiety as well as an aim of treatment. Knowing special characteristics of breathing in patients with anxiety disorders offer possibility to modulate the respiration in order to reduce anxiety[2].

The breathing pattern can be recorded using spirometry or pneumotachography, but these methods involve the use of mouth pieces which inconvenience the patients and causes unpleasant sensations, and enhance the level of anxiety. Like this, the assessment of the breathing pattern in subjects with different levels of anxiety should be performed using the recordings of changes of the volume of the chest cavity and not the recordings of the airflow/lung volumes. The changes of the volume of the chest cavity can be calculated on the base of change of either anteroposterior diameter (magnitometric pneumography), or perimeter of the chest cavity (inductance plethysmography). These values are double recorded - at the level of chest cavity (fifth intercostal space) and abdomen (at the level of the navel). These methods allow the assessment of the time parameters, but not those of the volume. Volume parameters vary in relation to individual anthropometric parameters of the subject (the shape and perimeter of the chest cavity, the perimeter of the abdomen), so it cannot use an unique quotient for all subjects, to transform units for perimeter and diameter (cm) in units of volume (ml). It is necessary to find a quotient for every subject in part, the proceeding named calibration.

The calibration can be performed using spirometry with fixed volume or pneumotachography, followed by integration of the airflow values. For this purpose, the simultaneous recording of the breathing pattern by pneumography and one of the proposed methods of calibration is performed. In our study, the method of spirometry with fixed volume shown a higher precision, because the dead space volume is very low, and the tidal volume is always constant regardless of the number of breaths.

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