1. Streszczenie w języku angielskim

A woman's voice changes throughout life, subject to hormonal influences, from puberty to aging. The influence of the pregnancy on the voice is noticed during the period of the mutation, menstruation, pregnancy or menopause. The diagnosis of the clinical form of dysphonia in pregnant women should be based on objective tests including the visualization techniques and the voice acoustic examination.

The visualization of the real vibrations of vocal folds is enabled by the unique technique of High-Speed Digital Imaging (HSDI). This technique allows the assessment of mucosal wave morphology - Mucosal Wave (MW), glottal closure types (GTs), open quotient (OQ) values in the anterior, middle and posterior sections of the glottis and regularity, symmetry and synchronization of vibrations. The use of visualisation techniques of the vocal fold vibration, acoustic voice assessment, perceptual methods enables comprehensive and unambiguous diagnosis of the clinical form of dysphonia.

The main aim of the study was to assess the relevance of the High Speed Digital Imaging (HSDI) technique in the diagnosis of clinical dysphonia in women in advanced pregnancy.

The study group consisted of 30 women in the third trimester of pregnancy aged 21 to 38. The control group consisted of 30 non-pregnant women between 20 and 29 years old. The voice quality of the patients from the study and control groups was assessed on the basis of subjective and objective methods. The subjective assessment of voice was based on the GRBAS scale as well as the Voice Handicap Index (VHI). In the assessment of the factors affecting the quality of the voice in pregnant women and the disturbed the voice quality during this period, an original questionnaire was used - a survey. The respiratory-phonation-articulatory mechanism was analyzed based on the voice emission problem sheet (according to Guzy A.). The larynx visualisation was obtained with the use of the High Speed

Digital Imaging (HSDI) technique, High Speed (HS) camera and rigid endoscope with 90^{o} optics. A symmetry, regularity and amplitude of the vocal fold vibration, the glottal closure geometry during phonation (GTs) – as well as mucosal wave (MW) were evaluated. The acoustic evaluation of the vowel "a" and the linguistic text "Today is nice weather" was carried out. Acoustic parameters such as F0, Jitter, Shimmer, NHR and maximum phonation time (MPT) were analysed. The edema and congestion of the vocal folds in pregnant women were recorded in the HDSI technique imaging of the larynx ($p < 0,0005$). Pathological glottal closure (GTs) in the anterior and posterior segment of the glottis was examined based on the value of the opening quotient (OQ) ($p < 0.0005$). A mild asymmetry was found in 48.3% pregnant women and an increase in the amplitude of vocal fold vibration in 76% pregnant women. A statistically significant decrease in the base frequency (F0) and a shortening of the maximum phonation time (MPT) were recorded. Hoarseness, roughness and voice tension have been found in pregnant women in perceptual assessment (GRBAS).

The imaging assessment the parameters using the HSDI technique allowed the diagnosis of vocal fold edema with phonatory paresis in the anterior and posterior glottis in women with advanced pregnancy. The existence of dysphonia was confirmed by the results of the voice self-assessment (VHI), the perceptual assessment (GRBAS) and the acoustic assessment of the voice.

Keywords: dysphonia, pregnant women, High Speed Digital Imaging (HSDI), voice acoustic assessment, voice perceptual assessment