Analysis of the Results Polysomnographic Research of Patients with Violations of Nasal Breathing

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ABSTRACT

This study aims to study it appeared that analysis of polysomnographic results of patients with violations nasal breathing. 130 patients with rhonchopathy who were on inpatient treatment in the ENT department of the 3rd clinic of the Tashkent Medical Academy were examined. Based on the classification of rhonchopathy, the patients were divided into 2 groups. The study showed that the severity of snoring depends on the degree of obstruction of the nasal and pharyngeal airway, which is more often observed in the deviation of the nasal septum, vasomotor rhinitis, and polypoid rhinosinusitis.

Introduction

According to the information presented by the World Health Organization (WHO) the 30% of the population in the world observed snoring (ronchopathy), and 25-30% of people's snore is a sign of the syndrome obstructive sleep apnea (OSA) [1, 5, 8, 11, 14]. As a result of 95% of patients suffering from SOAS, feeling tired. People, suffering from this fatigue, are considered to be potential hazards. This disease, having the property progress and providing an impact on the cardiovascular system and the respiratory system, may cause serious complications. Information received from literary sources indicates that the degree of mortality rate from OSAS is 6-8% [2, 4, 9]. Relevance study promotional performance indicators diagnose services and comprehensive treatment options for patients suffering from ronchopathy diseases, the fact that in addition to ENT organs they are inextricably linked to bronchopulmonary pathology, heart failure- vascular system, local and hormonal changes immunity. Along with this, unresolved issues still having problems on detection in the regions and districts of the Republic the incidence of ronchopathy, its treatment, and prevention, promotion of qualities provided by department of otorhinolaryngology help is one of the priority tasks of the modern system of medicine [3, 6, 10, 13].

Nowadays to improve performance indicators diagnostics services and comprehensive treatment of ronchopathy for patients suffering from ENT diseases held several scientific publications research. In particular, to identify factors contributing to development risk ronchopathy, as well as the rationale the role of diseases ENT organs in the development of ronchopathy using endoscopies upper respiratory tract diseases pathways, polysomnography, active anterior rhinomanometry. In turn, performance indicators of conservative and surgical treatment methods of ronchopathy for patients with ENT-organs diseases, the selection of appropriate methods of diagnosis, and comprehensive treatment of ronchopathy and implementation put them into practice. Implementing the activities aimed to improve the quality of patients` life remains a priority by direction scientific research for this issue [5, 7, 12, 15].

The purpose of this study it appeared that analysis of polysomnographic results of patients with violations nasal breathing.

The material of this study 130 patients with ronchopathy (2019–2020), permanently treated patients in the ENT Department 3-clinics in Tashkent region medical academies. Control the group consisted of 20 practically healthy people volunteers, where 90 men (72,85%) and 50 women (27,14%). Age group patients were between 18 and 70 years old, average age made up Of 44,5±6,8 years. A big part of the studied data were no patients in the working-age group, i.e. within 30–49 years, most of which made up men. It can be seen from the presented information, including patients suffering from ronchopathy and SOAS, are men, and by age limit group – older age.

The selection process of patients was carried out based on clinical trials and laboratory tests research. Diagnostics

ronchopathy developed by 2 available pathognomic features, i.e. pathological snoring problems (5 days a week) and nocturnal hypoxemia. Based on clinical trials research, in particular, ENT examination, endoscopy ENT organs, x-ray system background checks, polysomnography, and biochemical tests research projects were developed by the algorithm diagnostics ronchopathy. Based on these features breathing during nighttime sleep and polysomnography of the patients were divided into 2 groups. First, the group includes 80 patients with a light degree ronchopathy which experienced initial signs of pathological snoring, observed the appearance of snoring in the position of lying on the stomach, and when changing the position of the body the snoring stopped. The second group included 50 patients with ronchopathy medium degree, characterized by permanent pathological snoring, the appearance of snoring in any in the supine position torso, the appearance of apnea, observed violation breathing during sleep and change quality of life. Patients were observed to have insomnia, sleep disorders, morning fatigue, headache, daytime sleepiness. Control the group consisted of 20 practical exercises with healthy people volunteers who were included in this program, based on the medical history and according to the information relatives who have not experienced snoring. Patients with a severe degree of ronchopathy were not included. Statistical information on processing data was developed by using a software package «Microsoft Excel 2016», «Statistics 8».

Results of the Researches

By distribution of patients according to the weight, it was found that the patients of 1-th groups of 48 people (60%) – weight within the limits of norms (BMI 20-24, 9), for 21 people (26,2%) – obese I degree (BMI 25-29, 9), for 11 people (13.8%) – obese II degree (BMI 30-40), from patients 2-th group for 11 people (22%) – weight within the limits of norms (BMI 20-24,9), in 18 people (36%) – grade I obesity (BMI 25-29, 9), in 17 people (34%) – obese II degree (BMI 30-40), for 4 people (8%) – obese Grade III (BMI >40).

By using polysomnography researches completed on electroencephalography (EEG), Electro-automatisation (EOG), electromyography (EMG), electrocardiography (ECG), examined permeability of oro-nasal air transport services streams, content oxygen in the blood flow, movement of the chest and stomach and the position of the body of a patient in sleep time, altitude snoring, recorded heartbeat, all processes filmed on a working video camera in infrared mode range. Polysomnography helps to evaluate sleep structure, define the degree of severity of diseases, provides information on the effectiveness of process control treatment options. The study conducted during the daytime period sleep duration (during 2-3 hours) also has been confirmed on video monitors. Where recorded the following parameters: oro-nasal air flows, respiratory systems movement of the chest and the wall of the abdomen, duration the height of the snoring level (saturation), saturation levels of oxygen, quantity heart attack contractions, body position during sleep. The advantage of using this method of researches is that it allows conducting researches in the clinic, and at home, in normal settings for the patient's conditions. This information helps to recognize the type of apnea and to determine its degree. For serious cases changes in the patient's breathing during sleep and suspicions for the presence of OSA to complete polysomnographic.

It was revealed that the intensity the snoring rate is: in 17 patients (21.2%) – from 20 to 40 dB, y 29 patients (36.3%) – from 41 to 60 dB, at 34 patients (42.5%) - from 61 to 80 dB.

According to the results of research, for classification degrees of severity obstructive health index the syndrome apnea/hypopnea (IAG) is used next index gradation apnea/hypopnea (IAG): during 1 hour from 5 to 20 - light degree, from 20 to 40 – medium, from 40 and more – severe degree. In 56,3% of cases (45 patients), the following was detected: light degree apnea, in 35% of cases (in 28 patients) – average detected degree of apnea, in 7 patients (8,7%) – the identified snoring no sleep apnea.

In the arterial blood of patients with ronchopathy detected indicators dynamics of pO_2, pSO_2. At the same time, lung disease negatively influence on metabolism.

In patients from control panel oxygen groups, arterial pressure was 83–108 mmHg Standard pO_2 shows sufficient when received oxygen from lungs pO_2 below regulatory level. It reflects that the lungs don't have enough oxygen supply.Using this method researches defined by apnea/hypopnea index (IAG).
The intensity of snoring disorders, their variants and complications were evaluated with the help of all patients from 1st and 2nd groups (fig. 1).
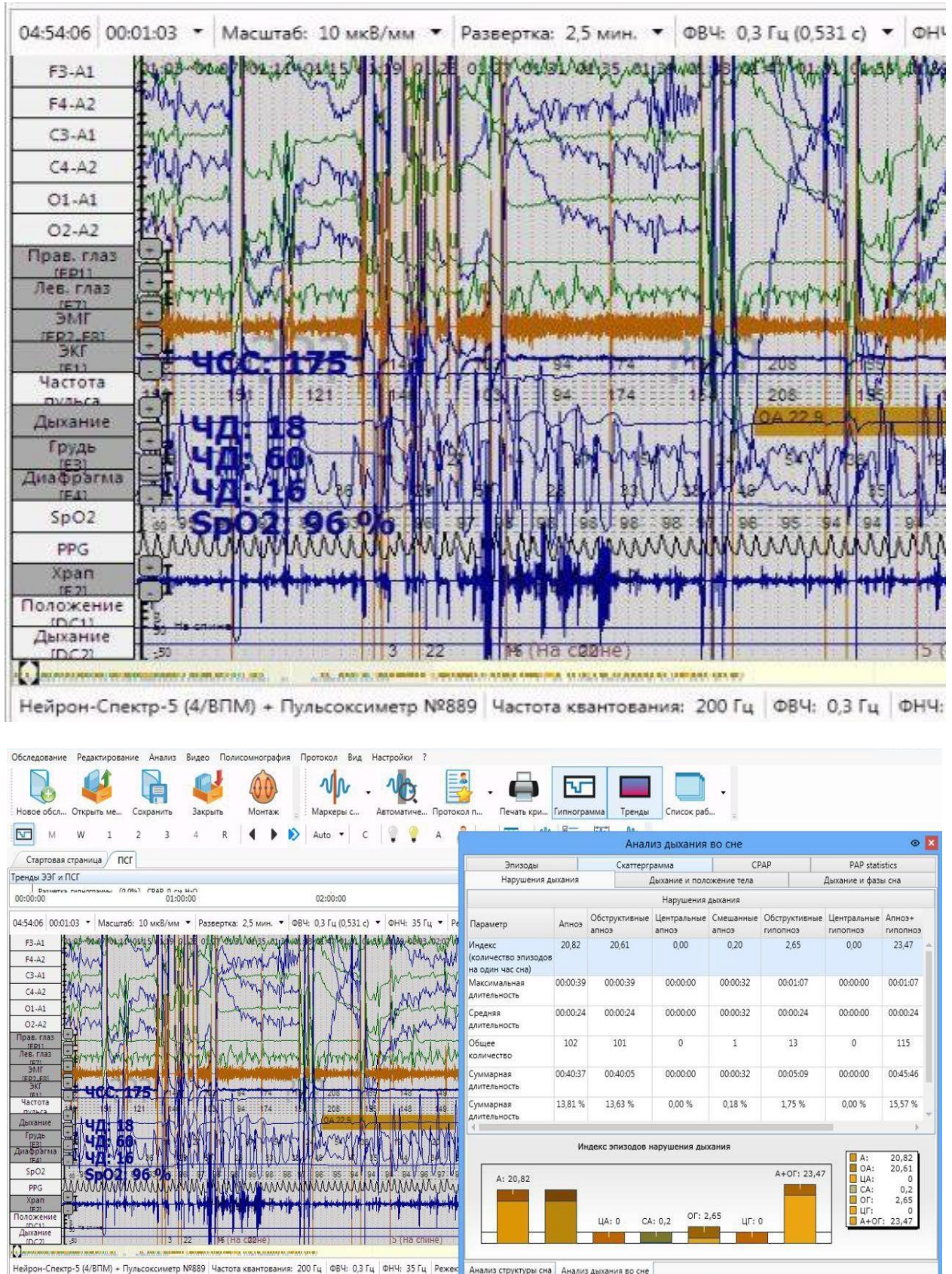
Fig. 1. Patient G., 38 years old. For polysomnography the study identified the degree of ronchopathy as a low level.

Analysis of pO_2 in patients with ronchopathy showed that none of the researched data patients during the day and evening time is not revealed regulatory pO_2 or not fixed high or lowest prices indicators that affect the average pO_2. In patients from 2nd groups pO_2, compared to 1st by group, significantly grew and became comparable with the results control panel groups (in patients from 2nd the group: in the daytime 67,52±2,94, in the evening 64,66±2,33).

Conclusion

From the above, the researches of the patients with ENT-organs diseases and a light degree ronchopathy detected for polysomnography 46,4 dB, and in patients with diseases of ENT-organs and medium-heavy degree of ronchopathy for polysomnography of 56,5 dB. The data has presented the fact that patients with excess body weight are more inclined to ronchopathy.

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