



## **Fund “Nauka” Project № 11014 Resume – Competition-Based Session 2011:**

“Assessment of the impact of application of endoral and endonasal devices in the treatment of patients with habitual snoring and obstructive sleep apnea”

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Obstructive sleep apnea (OSA) is a complex breathing and sleep disorder that affects about 9% of elderly women and 24% of elderly men. Many data on the association of OSA with cardiovascular pathology have appeared in the literature. Despite the obvious social and clinical significance of OSA, in many cases the diagnosis is still late and often missed.

Many types of surgery interventions in the pharynx, hypopharynx, tongue, and hyoid bone have been used to treat OSA. The results are successful in most of them, but there are also complications and lower quality of life after such interventions. In recent years, radio frequency equipment for the correction of the soft palate, tonsils, tongue, nasal conchae, uvula have been developed and applied.

In the above-mentioned procedures, the effectiveness of the treatment has a volatile effect. Endonasal and endoral devices were introduced. They have been proven as good remedies for patients with habitual snoring and mild forms of obstructive sleep apnea. Their advantages are:

1. Non-invasive and gentle methodology.
2. Easy and affordable equipment.
3. High economic efficiency.
4. No hospital stay and absence from work is required.

The purchase of an esophageal manometry device will enable with high probability the determination of the topic and the causes of snoring and obstructive sleep apnea. This will reduce the number of unnecessary surgical interventions in case of poor assessment of the origin of the obstruction and snoring.

### **Aim of the study:**

To evaluate the effect of the use of endoral and endonasal devices in the treatment of patients with snoring and OSA and on this basis to develop an applicable complex model for the treatment of patients with OSA.

### **Working hypothesis:**

Microinvasive techniques and prostheses are a new generation of therapeutic agents in the treatment of OSA and can contribute to a significant improvement in the quality of life in

these patients, as well as to reducing the risk of complications. The lack of sufficient information among the medical community and experience in their application in our country requires the development of an adequate for the Bulgarian conditions therapeutic model and finding the right place for microinvasive techniques and prostheses.

### **Research methods used:**

- ❖ Somnographic analysis: The aim is to differentiate obstructive sleep apnea from snoring on an outpatient basis and to suggest possible treatment with non-invasive and microinvasive dental and otorhinolaryngological devices.
- ❖ Endoscopic analysis: To diagnose pathological problems in the nose, pharynx, hypopharynx and larynx.
- ❖ Spirometry: Ancillary analysis for the presence of upper and lower airway obstruction.
- ❖ Rhinomanometry: analysis of nasal breathing.
- ❖ Radiography and computed tomography: to assess changes in the area of the upper and lower jaw and to calculate the presence of pathology according to certain formulas.
- ❖ Dental status: assessment of the possibility of using endoral devices are treatment of snoring and OSA.
- ❖ Psychological status: in patients with severe snoring, a family consultation and examination by a psychotherapist is required.

### **Characteristics of the expected contribution:**

- ❖ Application for the first time in Bulgaria of endoral and endonasal devices in the treatment of patients with OSA.
- ❖ Preparation of expertise for the effect of the use of endoral and endonasal devices in the treatment of patients with OSA.
- ❖ Creation of an algorithm adequate for the Bulgarian conditions for diagnostic and therapeutic treatment of patients with OSA, with specification of the place and role of the endoral and endonasal devices.
- ❖ Accumulation of hardware and methodological support for opening a center (unit) for prevention and treatment of OSA.
- ❖ Proving the advantages of the interdisciplinary approach in the diagnosis and treatment of OSA (the research team of the project includes ORL-specialists, maxillofacial surgeons, dentists, anatomists, physiologists, psychiatrists).