

**Methods:** Therefore, our aim was to investigate the changes in nasal secretion's biochemical composition, in patients with CHR and the normal one. We consider that these data allow us to understand better the etiopathogenesis of the disease, to reveal indirectly the affected cellular constituents (channels, ion pumps, transporters, enzymes), their role in the genesis and evolution of the disease, as well as to elaborate a new, etiotropic and pathogenetic, conservative treatment (nowadays, the main method of treatment of CHR remains the surgery).

**Results:** For this purpose, a group of 15 patients, previously diagnosed with CHR, was selected. Their age was between 8 and 21 years old: 8 females and 7 males. Control group included five participants, without clinical signs of any upper respiratory disorders. Samples were taken by swabbing (in the case group) and by nasal lavage (in the control group).

Due to some chemical reactions, specific for each nasal secretion's component, colored compounds were first obtained and then dosed by the spectrophotometric method.

**Conclusions:** So, we established the normal and pathological (CHR) concentration of the next 8 nasal secretion's components: total protein, albumin,  $\text{Ca}^{2+}$ ,  $\text{Pi}$ ,  $\text{Fe}^{3+}$ ,  $\text{Na}^+$ ,  $\text{Cl}^-$  and  $\text{Mg}^{2+}$ .

The results show increased levels of the albumin,  $\text{Ca}^{2+}$ ,  $\text{Pi}$ ,  $\text{Na}^+$ ,  $\text{Mg}^{2+}$  in the nasal secretion of the patients with CHR, compared with that of control group's representatives.

Also, we can remark a decreased concentration of the total protein,  $\text{Cl}^-$  and  $\text{Fe}^{3+}$ .

Biochemical reactions and the spectrophotometric method allowed us to determine the concentration of some constitutive elements of the normal nasal secretion and of that in CHR. It helped us to compare, to analyze and to highlight some of the specific features of the pathogenesis of this disease - data which present real clinical interest for establishing an effective conservative treatment.

**Keywords:** chronic hypertrophic rhinitis, nasal secretion, biochemistry.

## SOME CHARACTERISTICS OF BRAIN VASCULARIZATION

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**Introduction:** This study concerns some aspects of individual anatomical variability on cerebral vascularisation, particularly arterial circle of Willis. In polymorphism it is important to know the arterial ring once deficiencies in brain may alter pounds.

**Objectives:** The criteria have guided us in making this research as: literature review with reference to the concerned issue; determination of morphometric parameters of the polygon forming arterial vessels; investigate parameters that brain arteries often show polymorphisms location; establish individual anatomical variations of the arterial polygon and arguing their clinical importance.

**Materials and methods:** The work is based on 12 prepared anatomical researches and 18 digitized scientific angiography (DSA).

**Results:** According to the data from the record investigated preparations we found that: In 9 cases the components of the arterial circle of Willis are integral; in 7 cases there was noticed an absence of the posterior artery; in 6 cases it turns out that one of posterior cerebral artery manifests independence and it is not related to basilar trunk; in 4 cases one of the cerebral arteries is atrophied, in counterpart to the second that is being developed to excess; in one singular case independence of the both was registered;

in 3 cases the absence of the posterior cerebral arteries, previous cerebral artery were registered. These variations are not considered as pathological if there is a congenital issue, and the perfusion is assured. This cannot be said about the postnatal manifestation, as it may cause the dysfunction of the cerebral vascularisation cycle.

**Conclusions:** As a final overview, referring to the basic form of the arterial circle of Willis we may notice that it opens symmetrically where the communicating and cerebral arteries derive from previous internal carotid artery and posterior cerebral artery is the termination branches of the basilar artery. Willis arterial polygon can be opened unilateral in case of the absence of posterior communicating artery, as well as in the case when the posterior cerebral artery originates from the internal carotid artery. In rare cases arterial circle of Willis may be opened in the anterior section in the case of the absence of the anterior cerebral artery. As well different versions are often met to individual constituents that are having the arterial circle of Willis in the form of aplasia, hypoplasia, hyperplasia and other forms of branching of the arterial circle components, including the atypical formation.

**Keywords:** Polygon Willis, as the basic primitive form, dysplasia.

## PERFECTING PREVENTION OF OCCUPATIONAL PATHOLOGIES IN MEDICAL SONOGRAPHERS

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**Introduction:** Ultrasound has a negative effect on the health of medical staff exposed to it in their work. This effect is manifested primarily by symptoms of vegetative polyneuropathy of the upper extremities, which lead to sensory, vascular and trophic changes.

**The objectives:** of this paper is to determine the prevalent complaints of worsened health in medical sonographers and to develop new, more advanced methods of prevention.

The subjects of the study are sonographers working at medical facilities of the Grodno district of Belarus.

**Materials and Methods:** We used surveys to collect data describing the health of medical sonographers and the measures they take to prevent the harmful effects of ultrasound on their bodies. We developed and assessed the efficacy of our method by then used already for one year to prevent polyneuropathy of the upper extremities. The method makes use of a spraying brush mounted on a cold and hot water faucet. The collected data were treated with statistics software package. Statistics 6.1.

**Results:** Medical sonographers with ten or more years of work experience in the field had complaints mostly of pathological changes in the hands: excessive sweating, intermittent pain, cold sensation in the hands, as well as irritability, emotional liability, unsteady blood pressure, head aches and lumber pain. The study revealed inconsistent use of workwear: only 18% of the respondents reported use of protective gloves all the times, while 21% of the respondents use them occasionally and the rest only when their work is checked by superiors. Only 58% of the respondents regularly take planned breaks, while 24% take them sometimes. Only 28% of the respondents do a regular massage of their hands, while 18% do this occasionally and 54% do not do this at all. 14% of sonographers with five or more years of work experience resorted to rehab exercises only after having felt lumber and thoracic back pain symptoms. Only 21% of the respondents take their meals at regular times.