

"Migraine as a lethal disease?"

When developing the mechanism of migraine and finding its cause in the eye I had to come to conclusions which would enable migraine to be considered as a disease virulent not only for

human health, but also life.

What allowed me to draw such conclusions? Combining the mechanism of migraine with the facts known to doctors for many years. In this article I am going to briefly present the main mechanisms that allow us to recognize this disease as virulent for the whole body.

Blocking the pump of aqueous humour outflow from the eye (described by me in the paper "POLAND" - Pump of Outflow Launched Actively Nogal Description) and an increase in intraocular pressure in the posterior chamber of the eye lead to an increased pressure on the choroid and retina vessels, which, especially at low blood pressure, causes vessel stenosis in the eye and secondary increase in blood pressure in the arteries supplying the eyeball. Through the increase in peripheral resistance, which is for the circulatory system the eye's vascular network changed in this way, this then causes an increase in blood pressure in the vessels supplying the eye artery, primarily in the internal jugular artery. It even leads to the situation of extreme increase in blood pressure in the cerebral vessels and poses a risk of death due to acute intracranial pressure. Death may occur in acute cases, e.g. due to:

- head injury with unconsciousness,
- arrhythmias and their complications (this can happen due to compression on the vagus nerve in the jugular foramen and neurovascular bundle, contained by the internal carotid artery, internal carotid vein and vagus nerve),
- acute cerebral neurological complications,
- carrying out suicidal thoughts because of extremely intensive and persistent headache.

Over time it can result in disability or death due to the cumulation of complications of hypertension in cerebral circulation, which corresponds to increased statistics in migraines of such disorders as:

- ischaemic stroke,
- cerebral aneurysms (compression, cerebral hemorrhage),

- arteriovenous malformations (compression, cerebral hemorrhage).

It is worth to be noted that the majority of cerebral hemorrhages, the vast number of which end in death, involves the middle cerebral artery, which is an axial extension of the internal carotid artery. Therefore, an increase in pressure in the internal carotid artery, asymmetrically in relation to the other artery and homolaterally in relation to the eye and the half of the head, in which pain starts and intensifies in migraine, leads to such a destructive pulse wave hitting axially in the middle cerebral artery that this then causes pathology in this most likely location of cerebral hemorrhages from vascular arteriovenous malformations, which is my discovery in terms of describing the mechanism of migraine and the connection between migraines and these virulent for life vascular pathologies.

Another of my medical discoveries associated with the internal carotid artery is determining the "rescuing" role of the internal carotid plexus in extreme hypertension in the above mentioned artery. This mechanoreceptor in the internal carotid artery wall, under the influence of its extension at hypertension in its lumen, disables the pupillary dilator sympathetic innervation, which causes pupil constriction and improvement in the outflow of aqueous humour from the posterior to anterior chamber of the eye thus adjusting the blood pressure not only in the head, but in the entire human body!!!

By the way, it is worth mentioning that describing the mechanism of migraine has allowed me to find in the eye the area of increased peripheral resistance in arterial circulation, which is the reason for many cases of hypertension recognized so far as spontaneous (idiopathic), which it evidently is not, in the light of my discovery. The proof of this is a significant increase in the blood pressure measured in the brachial artery during a migraine seizure or during the closed angle glaucoma attack and subsequent pressure decrease after these attacks. In the paper "PBPR" (Pupil Blood Pressure Regulation) I described drops in blood pressure in people after YAG-iridotomy, i.e. after facilitating the outflow of aqueous humour from the posterior to the anterior chamber of the eye, which consequently reduces the intraocular pressure and eliminates the peripheral resistance in the arterial circulation in the eye, resembling a little bit in the hemodynamic aspect renal artery stenosis.

One more discovery associated with the internal carotid artery is finding that in many cases of trigeminal nerve neuralgia it is because of the hypertension in that artery that its extension in the cavernous sinus causes such a compression on the Gasser's ganglion that this accounts for the cause of trigeminal neuralgia!!!

As it turns out, therefore, we can treat ophthalmologically selected cases of hypertension as well as trigeminal and glossopharyngeal neuralgia by reducing the intraocular pressure using pharmacotherapy or by improving the aqueous humour outflow from the posterior to anterior chamber of the eye pharmacologically or using laser treatment.

In the face of my discoveries, it has become obvious that migraine is not a risk factor for glaucoma, but its marker. While discovering the mechanism of migraine, I actually found the most dangerous pathogen for the formation of glaucoma, that is the intracranial hypertension hidden in the posterior chamber and the vitreous humour chamber, which causes loss of the optic nerve fibers.

Dear Readers,

Having been invited to speak at the 4th International Forum of Ophthalmic Surgery in Katowice (24-26 April 2014), I am preparing a detailed presentation of migraine mechanism for doctors. For obvious reasons at the moment this website contains a text of popular and scientific nature, which, however, comprehensively enough discusses the issue of lethal nature of migraine. The disease which so far has been associated by a usual patient with more or less intensive headache.

Sincerely Yours – Piotr Nogal