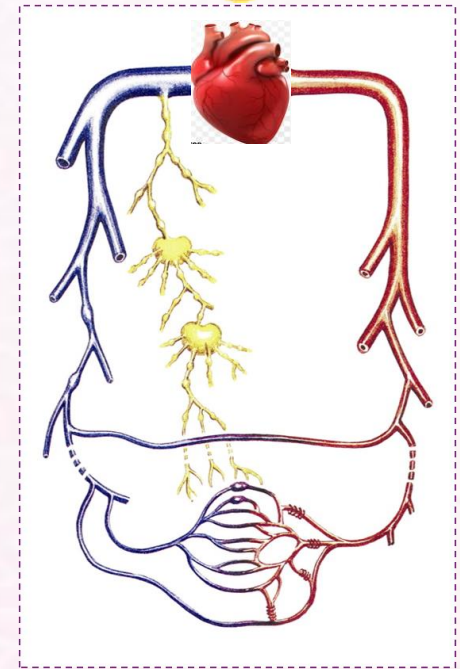


Applied Ultrasound Angiology and Mathematical Modeling of Hemodynamic Patterns in Personalized Angiotherapy of Blood Supply Deficiency and Angiocorrection of Regional Angioarchitecture, Arteriovenous Balance

Angio  Smart



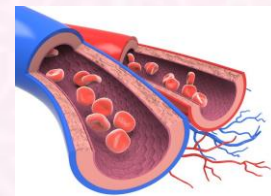
Authors:

Viktor Vi. Novytskyy, Ulyana Lushchyk, Viktor Novytskyy, Igor Babii,
Nadiya Lushchyk, Ivanna Legka, Sergiy Sazchenko

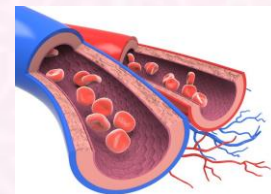


Veritas Research Center (Kyiv, Ukraine)
Veritas ITMED Center for Medical Technology Transfer (Kyiv, Ukraine)
Clinic of Vascular Innovations (Kyiv, Ukraine)
Ukrainian Medical Innovations Medical Center (Ternopil, Ukraine)

- ❖ Our research results in the field of applied vascular ultrasound and mathematical modeling of hemodynamic patterns.
- ❖ Our work aimed at addressing a crucial medical issue - the deficit of blood supply and the angio-correction of regional angioarchitecture and restoring the quality of cerebral blood supply in the cardiovascular system.

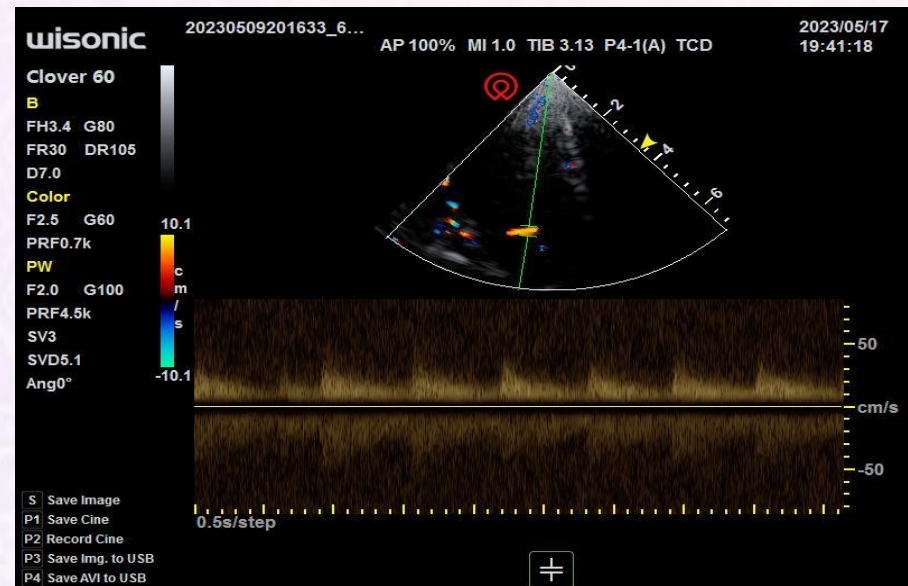
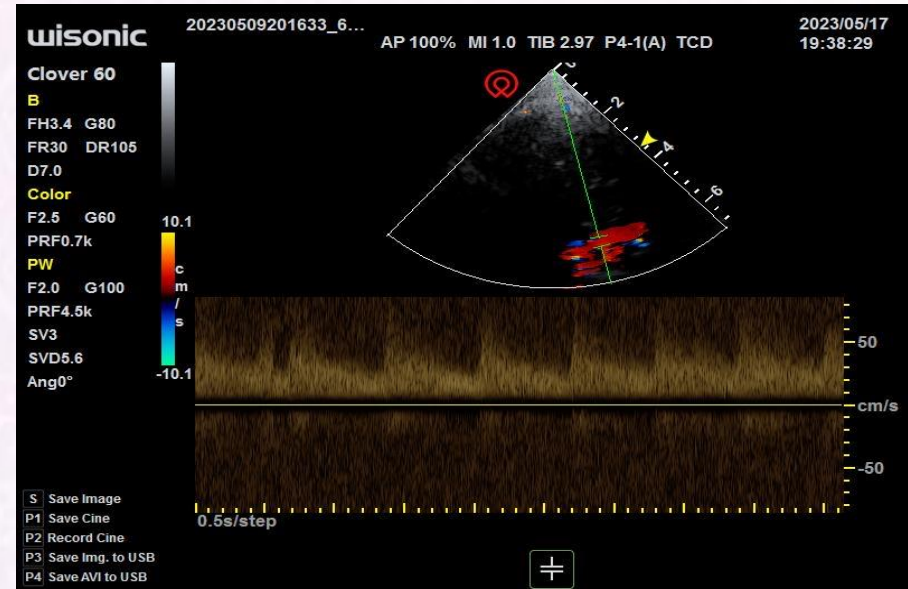


- **Ultrasound of the main arteries of the head and neck has already become an evidence base in neuropsychiatry.**
- **This report demonstrates the potential of personalized angiocorrection of cerebral blood supply deficit and hydrohemodynamic and arterio-venous cerebral balance shift by recurrent paresis of the abducens nerve on the left and disruption of horizontal and vertical synchronization of the oculomotor nerves of both eyes.**



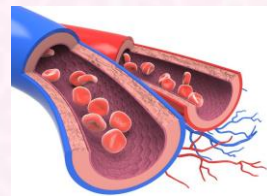
This slide shows the background arterial dystonia of the syphon of the ICA on the right and an expressed systolic-diastolic deficit in the projection of the syphon of the ICA on the left.

Visualization of the arteries of the circle of Willis is difficult.



Emiliya, 6 years.
Check-up before
treatment. 2023/05/17

- ❖ The aim of our research was to apply US technology to analyze the structure and function of arteries and veins in various regional reservoirs for clinical-analytical diagnostics and individual mathematical modeling of vascular blood flow.
- ❖ We aimed to restore adequate blood supply in different regional reservoirs of the cardiovascular system with angiotherapy and correction of hemodynamic parameters.

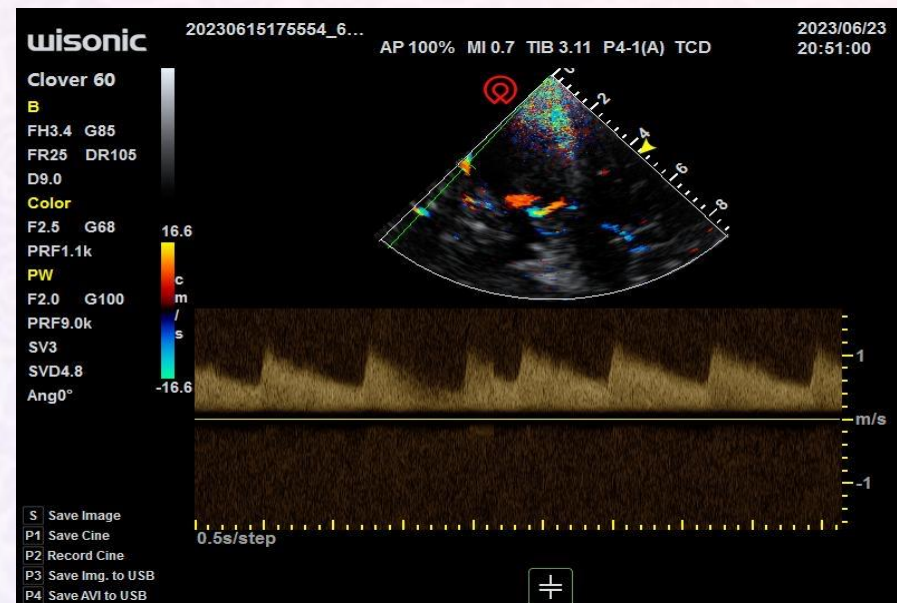
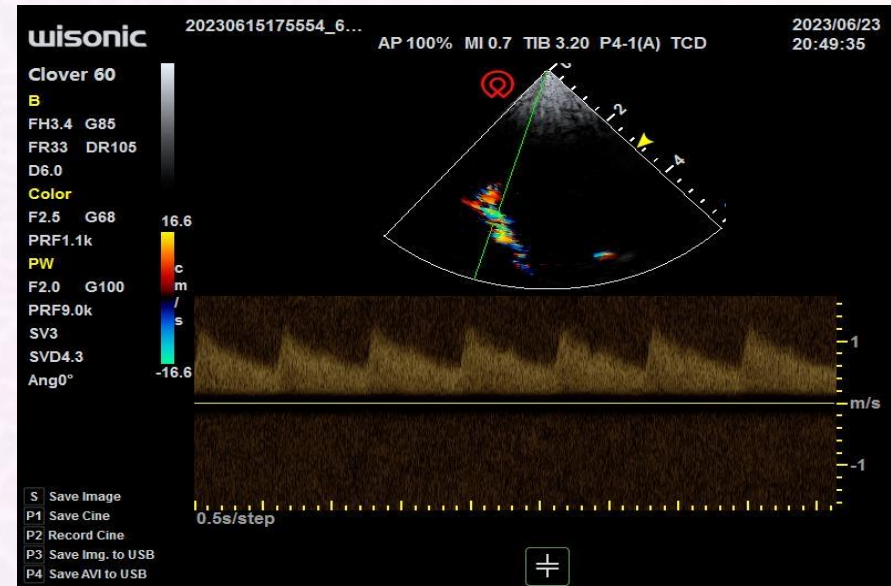


Aim of the research



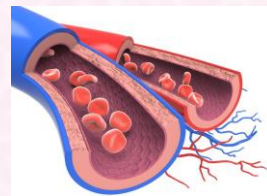
The images demonstrated results of a one-month course of personalized angiotherapy and correction.

We managed to obtain better visualization of the segments of the circle of Willis and symmetrical blood flow in the syphons of the ICA. The elastic-tonic properties of the cerebral arteries and caliber have not yet returned to normal.



Emiliya, 6 years.
Check-up after
the 1st treatment course.
2023/06/23

- ❖ The precise interpretation of US patterns of hemodynamic restructuring enabled us to reconsider the approach to angiology and consider it as a diagnostic and therapeutic process based on evidence-based medicine.
- ❖ We have developed algorithms for restoring adequate blood supply and balancing hemodynamic parameters in the cardiovascular system.



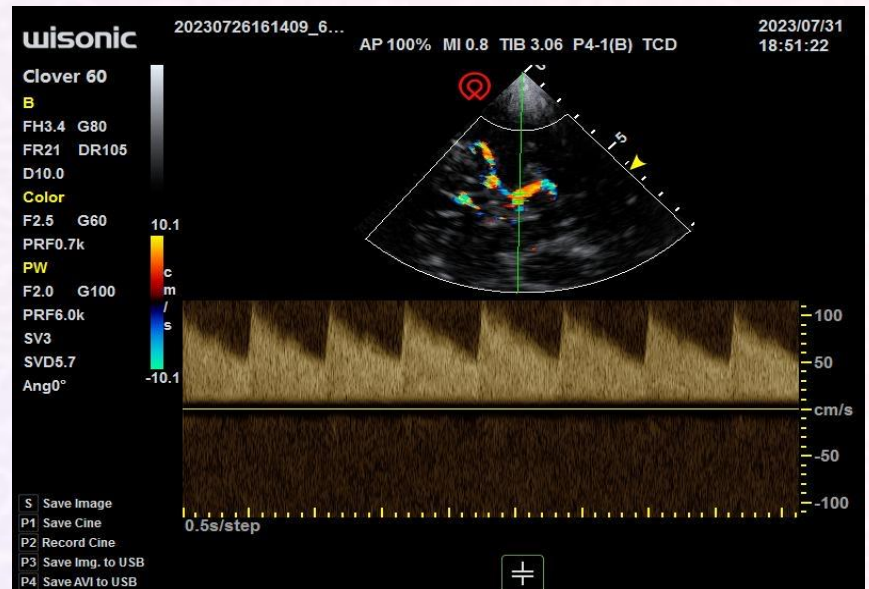
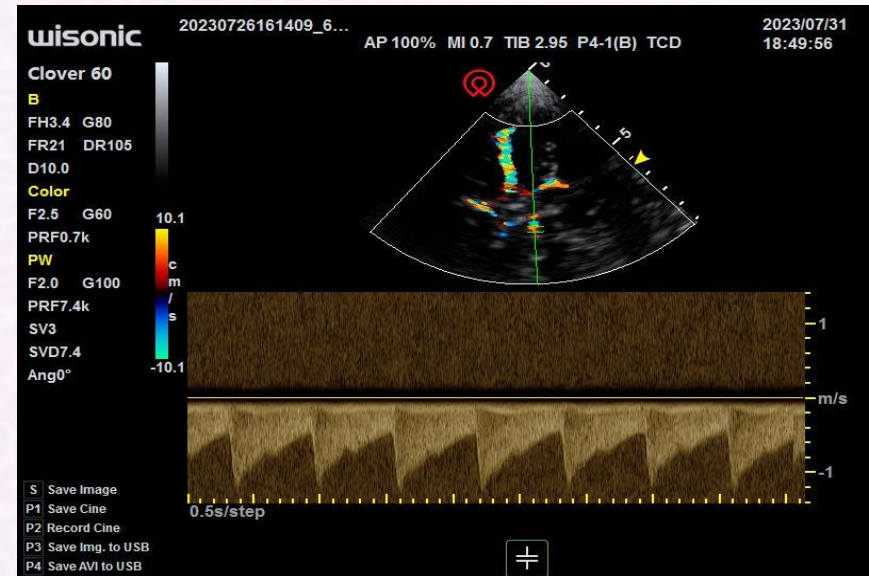
Evidence-based medicine

After the second course of angiotherapy and correction, it was possible to restore full-fledged patterns of blood supply to the brain with adequate visualization of the arteries of the circle of Willis, normal blood flow patterns.

A moderately expressed pattern of venous discirculation remains.



Emiliya, 6 years.
Check-up after
the 2nd treatment course.
2023/07/31



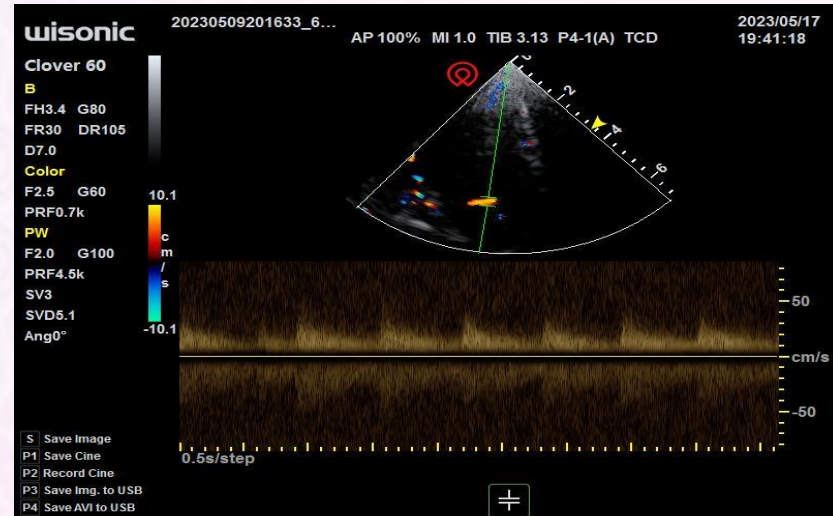
Achievements

We confidently assert that our long-standing experience and the uniqueness of our technologies open up entirely new prospects in the field of cardiovascular disease diagnosis and treatment. Our achievements hold immense potential for improving the quality of life for our patients.

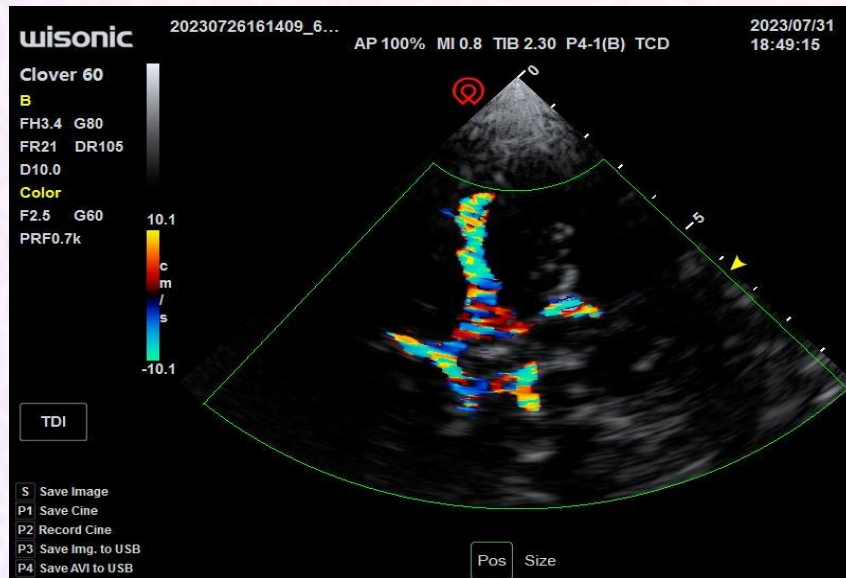
After 2 treatment courses of personalized angiotherapy and correction we have achieved the almost complete visualization of the circle of Vilizia.



Emiliya, 6 years
Check-up after
the 2nd treatment course
2023/07/31



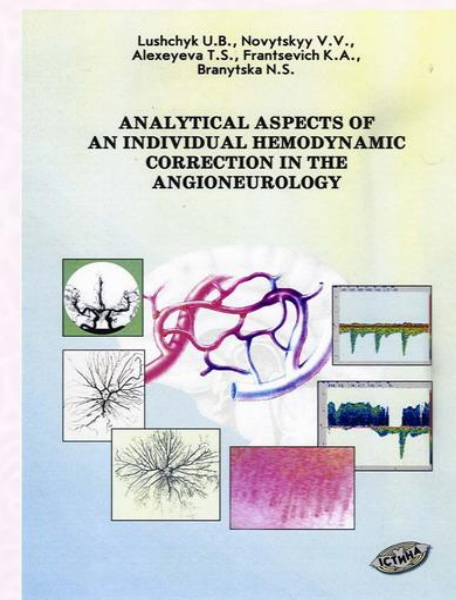
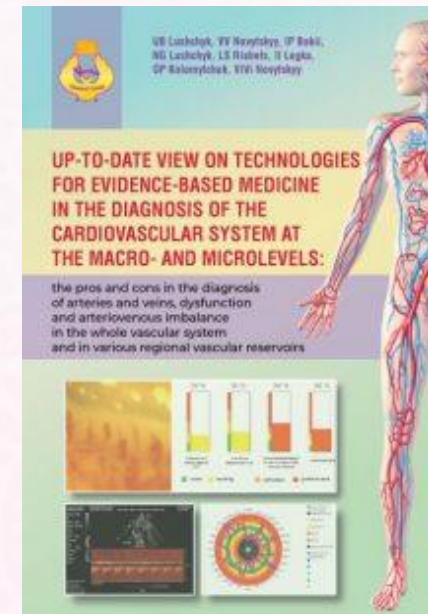
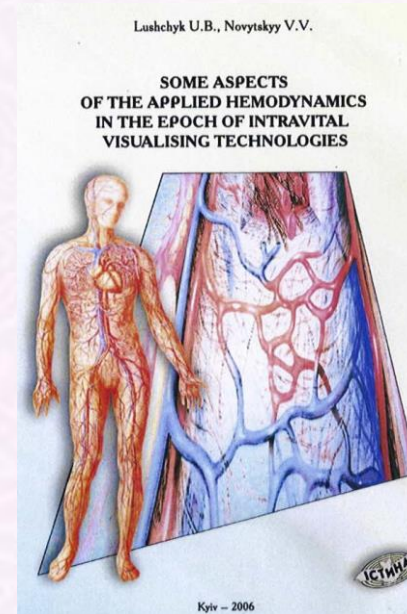
Check-up before treatment.
2023/05/17



38 years of clinical experience

❖ The obtained results testify to the success of our methodology. With 38 years of clinical experience and the use of US technologies, we have developed methods for studying arterial and venous vasculature in different regional reservoirs and identified patterns of blood supply.

❖ We have differentiated individual norms for patients of different ages and body types, identified the causes of functional and structural disorders, and determined priority of pathohemodynamic factors.



"Angiomarkers of the vascular brain reservoir"

the copyright technique by UB Lushchyk, cor. member of ATN Ukraine, MD

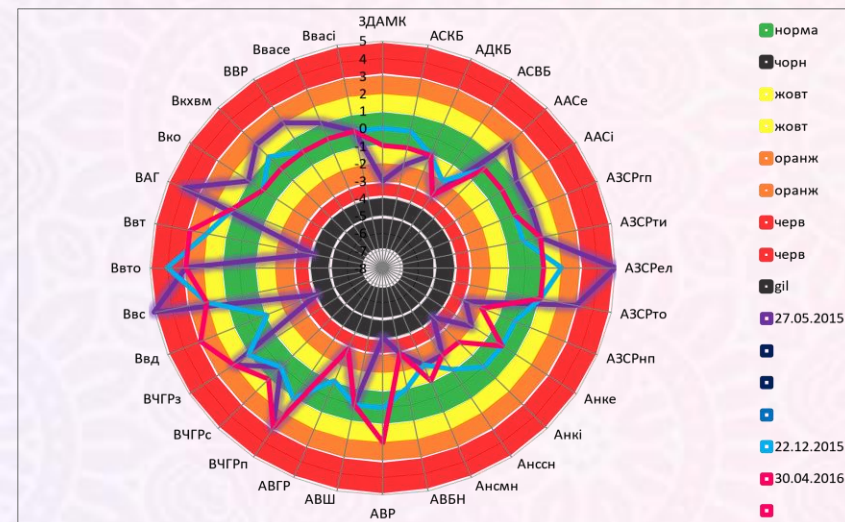
(State Patent of Ukraine, №10262 A dated 19.07.95, № 67707 A dated 31.12.03, №85052 dated 11.11.2013)

Brain blood supply condition.

The overall level of blood supply cord is saved in accordance to the age norm.

There are signs of functional imbalance of the vascular wall of carotid artery vascular wall and internal jugular veins in the form of severe fluctuations, which can lead to appearance of deficit of brain blood supply.

In basin of carotid arteries there is reduced elasticity asymmetry of 50% of systolic blood flow in the CA left projection, expressed fluctuation of vascular wall, signs of functional disorder in AOP. In vertebral basal basin there is evident shortage of blood supply to the precranial segment of the left vertebral artery on the background of bilateral osteochondrosis.



"Angiomarkers of the vascular brain reservoir"

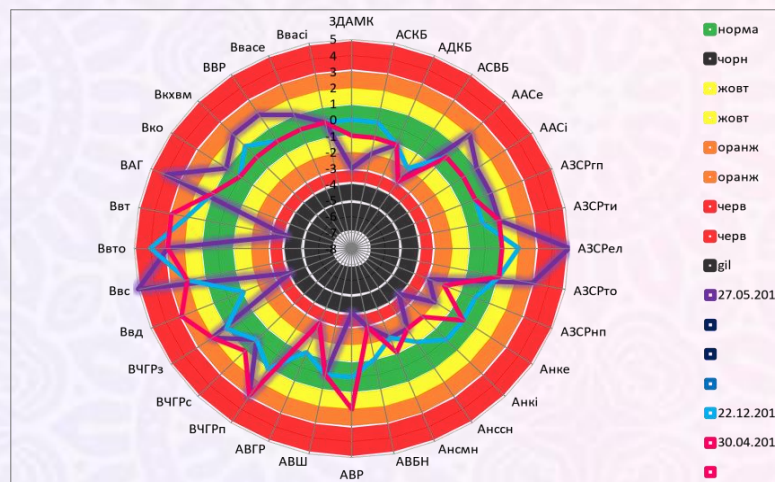
the copyright technique by UB Lushchyk, cor. member of ATN Ukraine, MD

(State Patent of Ukraine, №10262 A dated 19.07.95, № 67707 A dated 31.12.03, №85052 dated 11.11.2013)

There are moderate signs of deficiency of blood supply in projection of ocular artery, on the left there are elements of appearing sclerosis and swelling in the projection of the optic nerve.

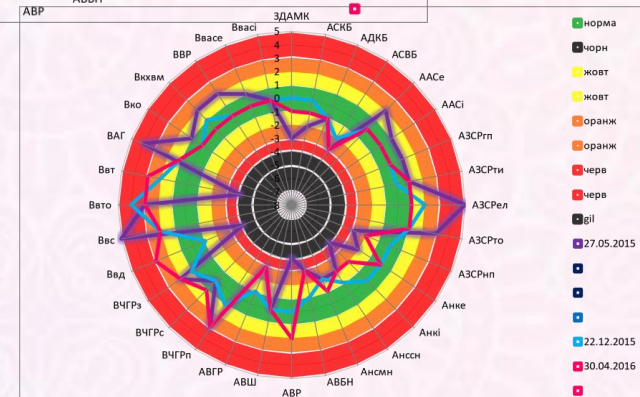
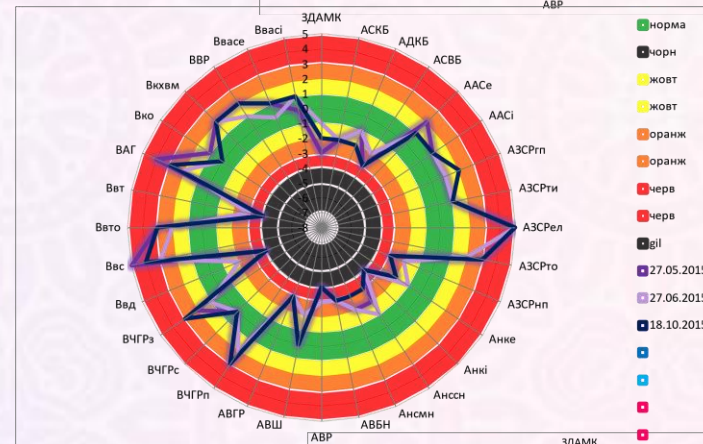
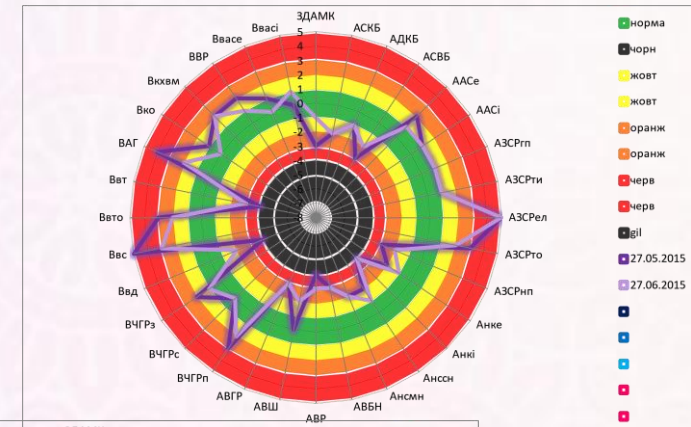
Venous outflow is moderately complicated on the background of flabectasia with signs of severe pathological fluctuation of vascular wall in the profile of blood flow to the left - hypoplasia of sharply complicated venous outflow.

The asymmetry of cerebral blood flow has 30% deficiency of blood supply in the left hemisphere, numerous vascular congestion in the projection of the pituitary gland. Symptoms of mild dystonia of main artery by hypertensive type.



Conclusions

The conclusions of our research underscore the importance of US technologies for diagnosis and treatment. Our US technologies, known as "Angiomarkers" take into account numerous hemodynamic parameters and are used in all medical fields to verify pathology and model it for the purpose of restoring it to a physiological condition.





A method for ultrasound diagnostics of vessels in the brain. Patent № 10262 A dated 19.07.95



A method for assessment of the regional angioarchitectonics. Patent № 67707 A dated 31.12.03



A method of assessment of a gray-scaled scanned image. Patent № 67708 A dated 31.12.03



A method for neurorehabilitation of patients suffering from apallic syndrome. Patent № 72725 A dated 31.12.03



A method for assessment disorders of microcirculation in norm and with pathology in patients of different ages with the help of smart capillaroscopy. Patent № 67709 A dated 31.12.03



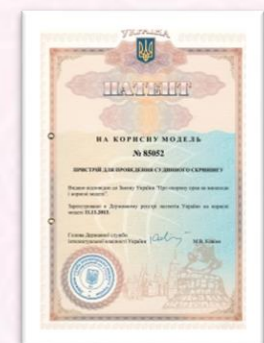
A method for application of combination of medicines for correction of the arteriovenous disbalance. Patent № 72868 A on 31.12.03



A method for treatment of convulsive syndrome. Patent № 71505 A on 31.12.03



A device for the capillary circulation registration. Patent № 22944 dated 25.05.07



A device for the vascular screening. Patent № 85052 dated 11.11.2013



Sincerely grateful you for your attention!

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