

Report from Kostiantyn Stepanchenko from Ukraine visiting the Mayo Clinic, Headache Division in Phoenix, Arizona, USA under the supervision of Professor David W. Dodick



I spent very enriching time in one of the biggest Headache Divisions in the U.S. – Mayo Clinic, in Phoenix, Arizona. I am very much honored that the International Headache Society granted me for this programme and I am grateful to the IHS for that great opportunity.

The Mayo Clinic has excellent reputation and known for its international emphasis. Mayo Clinic is a nonprofit medical practice and medical research group based in Rochester, Minnesota. William Worrall Mayo settled his family in Rochester in 1864 and opened a medical practice that evolved under his sons into Mayo Clinic. Mayo Clinic is widely regarded as one of the United States'



greatest hospitals and ranked No. 1 in the country on the 2016–2017 *U.S. News & World Report List* of "Best Hospitals" of the United States, maintaining a position near the top for more than 25 years. It has been on the list of "100 Best Companies to Work For" published by *Fortune* magazine for thirteen consecutive years. Mayo Clinic has a large presence in three U.S. metropolitan areas: Rochester (Minnesota), Jacksonville (Florida), and Phoenix (Arizona).

During my practice in the Headache Division I took part in everyday activities in the out-patient department. The work week was 40 hours, Monday through Friday for 12 weeks. The program consisted of both a clinical and academic component. I had an opportunity to learn the structure of a Headache Division, organization of the doctor's work, current contemporary approaches to the diagnosis, management and treatment of headache.

In the process of working with local neurologists I improved my practical skills in neurological examination of patients with different complaints, deepened my theoretical knowledge about headache, especially rare ones, learned about laboratory tests, instrumental methods of their diagnosis and approaches towards treatment. I saw quite rare cases such as SUNCT, Paroxysmal hemicrania, cluster headache, hemicrania continua, Susac's Syndrome, Spontaneous Intracranial Hypotension, Reversible Vasoconstriction Syndrome and Vertebral Artery Dissection.

I've seen many interesting cases with a very intelligent and kind *Dr. Juliana H. VanderPluym*. For me it was very interesting to compare the Ukrainian and American



medical systems for the benefit of patients with headache. She helped me to distinguish between primary headache disorders and symptomatic headaches of other diseases using SNOOP₄ red flags that are used for secondary headache; identify and address co-morbid conditions; perform a 5 minute exam on a headache patient; differentiate episodic and chronic primary headache disorder to formulate diagnosis; establish a framework for treatment: education, expectations, “SEEDS for success”, acute, preventive and bridge therapy, nonpharmacological treatments, rescue plan and arrange follow up patients with headaches. I think that I’ve learned more about the key points in diagnosis and management of spontaneous spinal CSF leaks and Idiopathic Intracranial Hypertension.

Dr. David W. Dodick described to me the scientific rationale for the novel targets against which new drugs, devices, and biologics have been developed. He discussed with me the results of clinical trials that support the development and potential future use of new drugs. As well as devices and biologics for emerging treatments, e.g. acute cases: CGRP (small molecule receptor antagonists), 5HT_{1F} receptor agonist, sTMS, SPG, vestibular stimulation, oxytocin, for preventive treatment: CGRP (monoclonal antibodies and molecule receptor antagonists), sTMS, nVNS, thermal caloric stimulation, pituitary adenylate cyclase activating, supraorbital nerve stimulation.

I appreciate the special attention *Dr. Amaal J. Starling* gave to my interest in concussion patient’s diagnostics and management. I improved my algorithm of concussion symptom evaluation - baseline testing computerized neurocognitive testing, King Devick Test, neuropsychometric testing, neurologic examination (Standardized assessment of concussion), MMSE, MOCA, Kokmen, neuroimaging. I’ve definitely learned more about the risk factors for prolonged recovery after concussion, multidisciplinary approach to concussion (pharmacologic and nonpharmacologic treatment), vestibular therapy, vision therapy, cognitive rehabilitation, biofeedback, CBT, and systematic approach to posttraumatic headache. She explained to me current knowledge and controversies on the role of cognitive and physical rest versus exercise in the management of concussion. This information is extremely useful for me in my every day practice as I live in Kharkiv and it is close to the zone of military conflict in our country. We are helping the wounded, refugees, released hostages and their families. The number of patients with post-traumatic complications, post-traumatic stress disorder and headaches is increasing.

Dr. Todd J. Schwedt explained to me basic strategies and specific options for the acute treatment of migraine; how to assess outcomes from acute migraine treatment and determine if there is a need for a modified treatment plan. He discussed with me the indications for the use of medication in the management of migraine headaches, outlined factors to consider when selecting a preventive medication; described factors that are important for the success of preventive medication.

Dr. Rashmi B. Halker Singh contributed greatly to my understanding of the relevance of hormones in migraine; how to make a diagnose pure menstrual migraine and menstrually-related migraine; described to me the migraine characteristics throughout a women’s lifetime (migraine and pregnancy, migraine and lactation, perimenopause, menopause, HRT and migraine, HRT and stroke); how the altering the hormone free interval in hormonal contraception can help with prevention in menstrually related migraine; named what types of hormonal contraception can be used to prevent menstrually related migraine.

I was fortunate to attend a meeting of Family\Supporter Day in the Pain Rehabilitation Center. Pain Rehabilitation Center is an interdisciplinary, behavioral, functional restoration, non-opioid approach to management of chronic pain. *Cynthia Townsend*, Clinical Director of

Pain Rehabilitation Center, taught me the major components of Pain Rehabilitation Center curriculum such as the cognitive behavior therapy, behavior activation, occupational therapy, physical therapy, opioid withdrawal and reduction of polypharmacy, enhancing and educating social support, enhancing health living habits, how to provide pain rehabilitation family supporter program; described to me the principles of Integrative Medicine for headache (role of diet in headache management, dietary triggers, weight management and obesity, traditional Chinese medicine, acupuncture, manual therapy, massage manipulation, exercise yoga, mind body, supplements botanicals).

With *Jamie M. Bogle* we assessed the results of rotation tests, video head impulse testing, vestibular evoked myogenic potential, computerized dynamic posturography and audiometry (hearing tests). These tests helped us to assess the balance and hearing of the patient to distinguish migraine attacks from the Meniere's attacks; to perform vestibular evaluation and balance rehabilitation for patients with concussion, to predict the outcomes of the concussion.

Robert Scales, Director of Cardiac Rehabilitation, showed me motivational interviewing with patients to help promote healthy behavior in a clinical or corporate wellness setting.

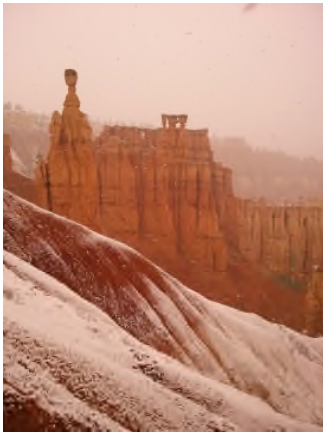
I am very interested in invasive techniques in the treatment of headache. I was introduced to the procedural headache medicine. I talked to specialists who showed me how to identify headache patients who are candidates for nerve blocks. I've learned a lot of rationale for nerve blocks in headache, mechanisms of referral from neck to head, local anesthetics for migraine, adding corticosteroids to anesthetic in migraine, adverse events, injection technique considerations, potential precautions and contraindications, OnabotA fixed-site fixed-dose injection strategy, following the pain strategy. They explained to me the benefits and risks of extracranial nerve blocks and OnabotA in headache and chronic migraine. I acquired competency in performing occipital, supraorbital, supratrochlear, auriculotemporal, and sphenopalatine nerve blocks, trigger point injection technique, onabotA injections training on models.

I was also present at the Hospital Rounds with *Dr. Amaal J. Starling* and at the case presentations sessions. We provided management of headache in the Emergency Department using Mayo ED protocols.

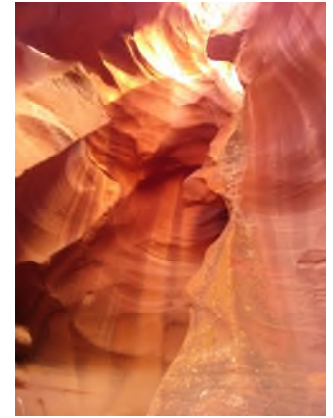
In addition, my supervisor kindly suggested attending the interactive lecture-practical course '**Mayo Clinic Headache Symposium**' March 17-19, 2017 which was extremely interesting and informative. Directors of this event kindly provided me with a free of charge registration. Also I had wide access to the Mayo Clinic's library I could read all the latest articles including PubMed for free.

In my free time I had the opportunity to explore beautiful surroundings. My friends took me to a trip to Los Angeles (Universal Studios Hollywood) and Las Vegas. I was lucky





enough to spend some weekends in Phoenix Desert Botanical Garden, Zion National Park, saw the famous London Bridge, the Colorado River Valley, the Seven Wonders of the Natural World - Grand Canyon National Park, Antelope Canyon, Horseshoe Bend, Bryce Canyon National Park. It was breathtaking! Travelling always broadens people's minds and I am extremely happy I could engage myself into discover this wonderful country



of natural beauty.



Thus, I completed all purposes of my visit. I gained important theoretical as well as practical experience during this period of time and that is why I am extremely grateful to *Professor David W. Dodick*, who accepted me within the Headache Division and who offered me this unique chance to earn this valuable experience. I'm very grateful to all doctors at the Mayo Clinic, especially to *Dr. Rashmi B. Halker Singh*,

for making me feel so welcome and for everyone's willingness to help me master my existing knowledge and share their experiences. Special thanks go to *Dr. Todd J. Schwedt, Dr. Juliana H. VanderPluym, Dr. Amaal J. Starling, Robert Scales, Cynthia Townsend, Jamie M. Bogle* and also to all residents with whom I examined patients not



only for professional communication, but also for their kindness and goodness. I received a very warm welcome and the attitude of the personnel was very good throughout my stay in the department. Also I want to thank Professor David W. Dodick's secretary *Waters Tnita S.*, who was very kind to me and helped me with all my questions.

I would like to thank the IHS for this brilliant opportunity to improve my knowledge, especially *Carol Taylor*, who helped me with all organizational questions. I cordially believe that this program will make a big difference in my entire life and would trigger my career even further. I return to my home department with innovative medical approaches which I will share with my colleagues for the optimal management of our patients.

I would strongly recommend this course in this excellent Division to everyone. Absolutely perfect conversation with professionals, friendly atmosphere, nice people and a place of natural beauty. It doesn't matter, if you are a young neurologist in training, or a skilled and experienced professional. This place gives you a lot – a huge amount of knowledge for your routine work, new contacts, new friends, but mainly, a lifelong feeling, that it was a really



good decision to participate in this programme!

Respectfully yours,
Dr Kostiantyn Stepanchenko

