Spotlight On: Neuralgic Amyotrophy

By Nens van Alfen, MD, PhD

Neuralgic amyotrophy (NA), also known as Parsonage Turner syndrome or idiopathic brachial plexus neuropathy, is a painful, focal peripheral nervous system disorder that mainly affects brachial plexus nerves in the shoulder and upper limb. While traditionally thought to be rare, a recent prospective incidence study found an incidence rate of one per 1,000 in general practice, presumably due to increased awareness of the disorder and improved clinical diagnostic skills taught to the participating physicians.1

Neuralgic amyotrophy is generally assumed to be an immune-mediated inflammatory disorder that occurs in people with a genetic predisposition and which can be triggered by both mechanical and immunological events. About half the patients report an antecedent infection, surgical procedure, strain or childbirth preceding their attacks; which all have in common that they activate the immune system in some way. Many different infectious causes have been reported as a trigger, but recently special attention is being paid to hepatitis E virus as a potential trigger.

There are two interesting reports of NA epidemics that underpin the hypothesis that in addition to a preceding infection mechanical factors or a specific genetic background are also prerequisites to trigger an attack. The first epidemic occurred from 1949 to 1953 in the northeast of Czechoslovakia. During this four-year period 265 cases were noted, with an incidence rising from 1.1/1000/year in 1949 to 7.3/1000/year in 1953. The highest incidence rates were found in one particular factory among workers operating a hosiery knitting machine, which involved holding their bent right arm outstretched at 100° elevation for eight hours a day. The number of new cases showed a sharp decline when in November 1953 the main water supply in the lodgings housing factory personnel were replaced. In many affected workers, Coxsackie virus type A2 was isolated from stool.

A second smaller-scale outbreak of NA occurred from April to June 1997 in the southwest of the United States of America in a native American Indian population, in which eight individuals became affected after an antecedent viral illness that was not further specified.

Very recently, there has apparently been a sharp increase in incidence of NA in the North Carolina area in the United States. Physicians at the East-Carolina Brody School of Medicine are currently analyzing these cases in cooperation with the regional Center for Disease Control and Prevention. Hopefully the results will be available soon.

Editor’s Note: See the upcoming November/December edition of Practical Neurology® for a full case report on the recent increase in NA in North Carolina.

Nens van Alfen, MD, PhD, is Medical Director of CNP laboratory at Radboud University Medical Center in Nijmegen, Netherlands. She has co-authored several studies on NA.


NEURALGIC AMYOTROPHY: DR. VAN ALFEN’S TAKE-HOME POINTS

- NA is not a rare disease and occurs in roughly one per 1,000 in general practice.
- It’s a clinical diagnosis first and foremost, and not just by exclusion.
- Early treatment with a short course of oral steroids may abort the attacks.
- Current standard rehabilitation treatment is often not effective, but a specific approach focusing on scapular coordination and energy management gives promising results in treating the long-term consequences.

Obesity, Physical Activity Levels Could Impact Risk of Meningioma

Increased body fat may enhance the risk for meningioma while physical activity could decrease likelihood, according to new evidence published in Neurology (September 16). Conducting a meta-review of studies through February 2015, investigators identified 12 BMI studies and six studies of physician activity, finding that overweight and obese patients had an increased risk of meningioma. Additionally, high physical activity was associated with lower rates of meningioma. Importantly, however, the findings also indicated that neither obesity nor physical activity was related to glioma risk.
New Report Examines Economic Factors of Rising Rates of Alzheimer’s Disease

The number of people with Alzheimer’s disease is expected to reach nearly 30 million in the Americas by 2050, according to a new report from Alzheimer’s Disease International (ADI). The report also estimated the regional cost of dementia in the Americas at $315 billion, comparable to the market value of Google. Much of the global increase in the prevalence of dementia will take place in the low and middle-income countries, according to the authors. Today, more than half of all people with dementia live in low and middle income countries, and this will rise to 68 percent by 2050. In these countries, stigma, lack of support for people living with dementia and their families and lack of funding for health systems present major challenges.

During the 67th Session of the Regional Committee of the WHO for the Americas, held this fall in Washington DC, PAHO country representatives voted unanimously in favor of the Plan of Action, obliging countries to develop national dementia plans. These plans include the promotion of risk reduction strategies through public health programs, ensuring a rights-based approach to the provision of care and support for people living with dementia and better training for health professionals, as well as more funding for research.

For the full report: http://www.worldalzreport2015.org/

Risk of Developing Parkinson’s Disease Higher Among Asthma Patients

Patients with asthma may have an elevated risk of developing Parkinson’s disease later in life, according to new data published in a recent edition of Allergy (August 27). Reviewing a research database, researchers identified patients with asthma who developed Parkinson’s disease and found that patients with asthma had an increase risk of developing PD even after adjusting for demographic data, health system use, and other factors. The findings also suggested a dose-dependent relationship between greater asthma severity and a higher risk of subsequent PD. Patients with asthma who had more frequent admission during the follow-up period exhibited greater risk of subsequent PD.

Near-Infrared Light Found Beneficial for TBI with Minimal Skin Irritation

For patients with traumatic brain injury (TBI), near-infrared light (NIR) may accelerate regeneration of the brain cells’ functionality with minimal skin irritation.

In a new study published in Neuropsychiatric Disease and Treatment, investigators compared penetration levels of low-power NIR, such as that from light-emitting diodes (LED) with high-power NIR on skin, bone, tissue, and brain. They found that low-power infrared light in the milliwatt range does not penetrate a full thickness section of human skin (2mm), nor does it deliver any significant infrared energy to a depth of 3cm into the brain. Additionally, high-power infrared light achieved at least 3cm penetration into the brain, which wavelengths of 980 and 808 nm with 9-13 Watts average power.

The investigators also suggested that a “pulsed” application of near-infrared light might be more effective than continuous wave light. Noting also an absence of thermal skin irritation and negligible skin temperature change, the authors concluded these findings indicate that current notions about the penetration of NIR may be off-base.

Neurology Device Market to Reach $13.6 Billion by 2019

The neurology device market is expected to swell to $13.6 billion in 2019, according to a new report from Transparency Market Research. According to the report, key factors contributing to the immense growth of the global neurology devices market are increasing incidences of neurological disorders such Alzheimer’s disease, ischemic stroke, multiple sclerosis, brain cancer, and other such traumas to the brain. The report, entitled “Neurology Devices Market—Global Industry Analysis, Size, Share, Growth, Trends and Forecast, 2013-2019,” also suggests that patients may be increasingly opting for use of neurology devices over drugs due to apparent decreased risk side effects. The forecasted number of $13.6 billion by 2019 is a significant increase over the $5 billion value it held in 2012.

To access the report visit www.transparencymarketresearch.com.
Parkinson’s Disease Foundation Launches New Initiative Focused on Women

The Parkinson’s Disease Foundation (PDF) is launching a new initiative dedicated to improving the health of women living with Parkinson’s disease (PD). Kicking off its three-day conference in Florham Park, NJ, the Women and PD Initiative will feature interactive sessions led by female health professionals from the fields of movement disorders, psychology, physical therapy, sexuality, and wellness. It is the first national coordinated effort dedicated to improving the health and well-being of women living with Parkinson’s disease (PD).

According to a review conducted by PDF in 2013, there are significant unanswered questions and unmet needs for women with Parkinson’s disease. It revealed that women experience Parkinson’s disease differently, yet are underrepresented in clinical studies testing new treatments. It also found that women are less likely to see a specialist who can provide the best care—with one study estimating that it takes women 61 percent longer than men to see a specialist after disease onset. Additionally, 88 percent of women with Parkinson’s surveyed by PDF indicated that they want resources focused on women’s needs.


AC Immune Partners with Nestlé to Develop Tau Diagnostic Test for Alzheimer’s Disease

AC Immune struck a deal with Nestlé’s Institute of Health Sciences to develop a minimally invasive Tau diagnostic assay for the early diagnosis of Alzheimer’s disease. AC Immune will provide expertise in the biology and pathology of Tau, as well as committing its laboratory capabilities to support the collaborative research program. Meanwhile, Nestlé will apply its proprietary multiplexed antibody technology platform in hopes of identifying and validating a highly sensitive diagnostic assay for the detection of Tau in human cerebrospinal fluid and blood plasma.

Biogen Presents Promising Long-Term Tecfidera Safety and Efficacy Data

Biogen presented new data that reinforce the efficacy and safety profile of Tecfidera (dimethyl fumarate) in a broad range of people with relapsing-remitting multiple sclerosis (RRMS) at the recent 31st Congress of the European Committee for Treatment and Research in Multiple Sclerosis (ECTRIMS) in Barcelona. The data show that Tecfidera significantly reduced MS relapses and delayed disability progression in patients who are newly diagnosed and those early in their disease course; these effects were sustained over six years of follow-up. Post-hoc analysis revealed that Tecfidera significantly reduced key inflammatory disease outcomes compared to glatiramer acetate (GA)1 and, in a separate analysis, Tecfidera demonstrated a favorable benefit-risk profile throughout six years of follow-up from the ENDORSE study, according to Biogen.

Injectable Agent Approved for Schizophrenia

The FDA approved Aristada (aripiprazole lauroxil, Alkermes, Inc.) extended release injection to treat adults with schizophrenia. The approval is based on a 12-weeks clinical trial in which 622 participants with acute schizophrenia who had been stabilized with oral aripiprazole maintained the treatment effect compared to placebo. ■

What’s New on NeurologyWire

Purdue Pharma and AnaBios Partner on Development of Chronic Pain Treatments

Purdue Pharma and AnaBios Corporation are launching a joint effort to accelerate the development of Purdue Pharma’s Nav1.7 sodium ion channel compounds for the treatment of chronic pain. According to the companies, the partnership enables the development to run more smoothly, leveraging Purdue Pharma’s intellectual property and lead compounds with AnaBios’ Phase-X technology. The proprietary Phase-X technology aids in the discovery of novel drugs directly in human tissues by generating data to ensure the safest and most effective drugs, according to the companies.
“Mind Control” Technology Takes Another Step

Scientists at Newcastle University’s Institute of Neuroscience have gained notoriety recently for their advances in transcranial magnetic stimulation (TMS), a technique that may someday be used to restore movement to individuals affected by disability or paralysis.

In an article published by The Guardian (August 22, 2015), journalist Tom Ireland profiles the group and explores how advances in brain-to-brain interfacing may change the scope of neurologic intervention.


Neuroscientist Wins MacArthur Foundation Genius Grant

Among this year’s MacArthur Foundation Fellows class is neuroscientist Beth Stevens, PhD, Assistant Professor of Neurology at FM Kirby Neurobiology Center at Boston Children’s Hospital. According to the Foundation, Dr. Stevens’s research into microglial cells is shifting thinking about the healthy brain as well as adult neurological diseases. Specifically, her findings suggest that adult diseases caused by deficient neural architecture or states of neurodegeneration may result from impaired microglial function and abnormal activation of its signaling pathway.

To learn more about Dr. Stevens’s research, visit www.stevenslab.org.

Further reading: https://www.macfound.org/fellows/946/#sthash.pd51MtXn.dpuf

Innovations in Neuroscience

Follow @PracticalNeuro for the latest news and research updates in neurology and neuroscience.