

My prog-MS ezine

For people with progressive MS and other interested people

Issue 54, May/ June 2024

Hello and welcome to the 54th edition of my ezine about progressive Multiple Sclerosis and MS progression in general. My name is Ian Cook. I'm a secondary progressive MSer from Birmingham, UK. I'm 65.

In this 53rd issue, there are as usual eight pages of prog-MS news stories. There are also two features. One on page 5 looks at a revolutionary new walking aid called a "neural sleeve" that could help the vast majority of us prog-MSers who have walking difficulties. Read the feature and follow the links to the videos of people with long-term MS walking. When will it be available in the UK? That day can't come soon enough for me. Picture below by Marcus Wallis on Unsplash.

There's another feature on page 10 looking at speech problems in advancing MS. I speak or rather croak from personal experience. The good news is that I managed to find a solution, literally, in a £5 nasal spray.

IN THIS ISSUE



US 'neural sleeve' brings hope of walking to those who struggle – p5

Cladribine sees major disability reduction in SPMS – page 2

Long term help for recurrent UTIs with new 'vaccine spray' – page 4

Cladribine sees major disability reduction in SPMS patients

Cladribine, a tablet licensed for highly active relapsing remitting MS, can lead to major physical improvements in those with Non-Active Secondary Progressive MS including an average reduction of 19% in the disability scale EDSS (5.25 as compared to 6.5) after two years use.

In a study carried out in the US two of the four patients who had previously needed two sticks for walking were able to walk without any support at all after two years. As well as this, cladribine treated patients were walking faster. On average the "Mean Timed 25-foot walk" was 52% quicker at the end of follow-up compared to beginning of treatment.

The study was presented at the international MS conference ACTRIMS, held recently in the US. In it four female prog-MS patients (average age 53.5 years) who were worsening despite taking either ocrelizumab or siponimod were treated with cladribine tablets and were followed up for nearly two years. Patients were studied clinically, and had magnetic resonance imaging (MRI) scans and blood tests.

At the end of the follow up period, there was an average reduction of 19% in EDSS (5.25 as compared to 6.5). Most impressively two of the four patients who had previously requiring two sticks for walking were able to walk without any support at all. Their EDSS was judged to have dropped to 4 or lower following cladribine treatment. As well as this cladribine treated patients were walking faster. On average the "Mean Timed 25-foot walk was 52% quicker at the end of follow-up compared to beginning of treatment.

The researchers concluded that: "preliminary, real world, clinical experience suggests that oral cladribine may potentially benefit some patients with non-active SPMS who are not responding to another high efficacy DMT including B-cell depleting therapies.

They also noted that: "Treatment of non-active (na)-SPMS is an acute unmet need in MS and further systematic evaluation of the role of oral cladribine and its mechanism of action in treatment of na-SPMS is urgently warranted.

A UK clinical trial ChariotMS phase 2/3 trial is currently testing whether cladribine can help 200 people with progressive MS maintain the use of their arms and hands and is being held at hospitals in Belfast, Birmingham, Cardiff, Coventry, Edinburgh, Glasgow, Leeds, Liverpool, London, Luton, Manchester, Newport, Nottingham, Plymouth, Sheffield, Stoke-on-Trent and Swansea,. To find out more contact chariot@qmul.ac.uk

For details of sources for all news stories go to page 14

Tysabri could be prescribed in SPMS, expert says

A suggestion that Natalizumab (Tysabri) could play a role in treating secondary progressive MS (SPMS) has been made on the popular Barts Hospital MS website "MS research blogspot".

Dr David Baker, who writes under the pseudonym "mouse doctor", says: Dogma says natalizumab doesn't inhibit progressive MS…..careful analysis suggests that is not the case. . . the ASCEND trial suggested benefits in effects on hand function."

Dr Baker refers to a recent analysis of data from a trial into Natalizumab and progressive MS called ASCEND which started in and reported its results in 2017. The 2017 results found that while natalizumab did not delay disability progression in SPMS patients with advanced disease assessed by the primary composite endpoint (Expanded Disability Status Scale [EDSS], Timed 25-Foot Walk [T25FW], and 9-Hole Peg Test [9HPT]), it did nevertheless slow progression on the 9HPT (upper-limb) component.

A recent academic paper looked again at the ASCEND trial's MRI data and according to Dr Baker the researchers could see evidence of benefit from natalizumab in delaying loss of brain structure." It says again that inflammation is damaging…suggesting benefit can be achieved by limiting brain inflammation."

At the time that trial results were released there was a suggestion that natalizumab's positive results on the upper limb, rather than the lower limb function was simply because nerves which "power" upper body parts like the arms and hands are shorter than those which control lower limbs like legs. It was further argued that this "length dependent axonal neuropathy" meant that in shorter nerves which go the arms and hands inflammation could be stopped more quickly and remyelination would take place sooner than in longer nerves like those which go to the legs and feet, something that was borne out by the ASCEND trial.

A 2017 review of the ASCEND trial published in the journal Neurology concluded by saying: "The ASCEND open-label extension showed clinically meaningful benefits of natalizumab on disability progression in advanced SPMS patients. Consistent with 2-year results, the largest treatment benefit was seen on preserving upper-limb function (9HPT), but preservation of ambulatory function (T25FW and EDSS) was also observed, leading to overall benefit on the primary composite endpoint. These results suggest that, while some benefits are evident after natalizumab initiation, full benefits on disability progression, particularly lower-limb function, in advanced SPMS patients may not be evident until after longer treatment duration." Despite this Natalizumab is not routinely prescribed for patients with secondary progressive MS.. **For details of all news stories go to page 14**

Long term help for recurrent UTIs with new 'vaccine spray'

Results from the first long-term follow-up study of a mouth-spray vaccine for recurrent urinary tract infections (UTIs) suggest that it "could be a gamechanger for UTI prevention," according to consultant urologist Bob Yang, who co-led the trial.

"It's very exciting… for us it was almost magical," said Yang, who works with the Royal Berkshire NHS Foundation Trust. "The results were dramatic," Yang said. "We had women who were coming month after month with infection after infection, despite all treatment, often with last-line antibiotics. And [after using the vaccine] they came back and said what have you done to us? We are infection-free."

The vaccine, called Uromune, was developed by Immunotek S.L. in Spain. It is composed of inactivated whole bacteria commonly associated with UTIs: Escherichia coli, Klebsiella pneumoniae, Proteus vulgaris, and Enterococcus Faecalis. It is administered by two sprays of a pineapple flavoured suspension under the tongue every day for 3 months.

The vaccine has been used, largely off-licence, in some countries for several years, with short-term efficacy already supported by published trials in which Yang and his colleagues participated. But they wanted to more fully investigate if an initial vaccination regime could safely and effectively give long-lasting protection for people who experience recurrent UTIs.

That led to the 9-year follow-up, which investigated safety and long-term efficacy in 89 patients (72 women and 17 men) aged 18 to 87 (average age 56) with recurrent UTIs. These patients were originally treated privately at the Urology Partnership Reading, UK. 40% of the participants also had repeat doses of the vaccine after 1 or 2 years. Forty-eight participants (54%) remained UTI-free during the 9-year follow up period, with an average UTI-free period for the entire group of 4.5 years. In terms of safety, Yang said no adverse effects or other concerns were identified.

Yang also pointed out that, although many other bacteria can cause UTIs in addition to the four most common ones specifically targeted by the vaccine, these other infections also seemed covered by the vaccine.

Meantime, however, the vaccine remains unlicensed in the UK, and Yang emphasised that it would be very difficult for GPs to use it off-licence, so the next steps will be to try to move forward towards regulatory approval in the UK. "Once this treatment gets licensed it will be revolutionary for GPs," Yang said. While emphasising that the approval will be a slow process, he feels that the emerging data, including these recent results, are steadily feeding in the evidence that will be required.

For further details see page 14.



Wearable walking aids being 'rolled out' in US

Anyone watching the rapid development of "exoskeletons" and "exosuits" in the US will be excited to hear that several wearable walking aids are more widely available there, paving the way for their wider availability in the UK.

The latest walking-aid innovation, a "neural sleeve", comes from US bio-tech Cionic which has been developing the device for several years. In 2022 the neural sleeve was cleared for use in the US by the Food and Drug Administration (FDA) , becoming the first high tech wearable bionic clothing aid for mobility impairment to win US federal clearance.

The neural sleeve is a flexible, lightweight leg-worn device, available in several sizes and has multiple sensors that allow it to evaluate, predict, and improve a user's movement. Using algorithms, the device can read signals sent from the brain to muscles and can then electrically stimulate muscles to makes real-time adjustments with each step to produce a more natural walking movement.

This can lessen walking difficulties caused by muscle weakness or foot drop, a condition common in MS where the foot's front doesn't lift when taking a step, something which increases susceptibility to falls, particularly on stairs or uneven surfaces. The neural sleeve can be worn on one both legs, dependent on extent of the walking difficulties.

Studies that evaluated the Cionic sleeve's at-home usability found patients' ability to lift their toes markedly improved. Moreover, participants saw reduced turning in of their feet during swing. Both are key measurements associated with foot drop.

Continued on page 6

Continued from page 5 Cionic has a production plant in northern California, and as of last October was licensed to ship to 45 U.S. states, with more than 400 clinics or healthcare institutions "prescribing" the garment. The neurotech company also announced it had raised an additional $12 million extension financing, which it would use to increase the sleeve's adoption among patients and expand it into use for other conditions which affect walking. In its most recent announcement, Cionic said it will continue working at the Chicago-based Shirley Ryan AbilityLab, its inaugural location while it expands its US Centres of Excellence network. Enrique Alvarez, MD, PhD, is an associate professor of neuroimmunology at the University of Colorado School of Medicine who specializes in MS care and is a member of Cionic's scientific advisory board. He said:

"As a neuroimmunologist at the forefront of multiple sclerosis care, I have spent my career studying different treatments for patients to find ways to improve outcomes at every phase of the multiple sclerosis journey. I look forward to partnering with Cionic as they use their technology to help patients with neurological impairments to live fuller lives."

Cionic is gradually making its neural sleeve more widely available in the US to people with mobility issues due to MS and other neurological conditions and has recently added three neurological medical centres to its national Centres of Excellence. The company provides centres with access to the wearable neuromodulation device and trains them how to use it on patients with a mobility impairment. The newest members are the first in Colorado and include UCHealth University of Colorado Hospital in Aurora, the region's only academic hospital, and Englewood-based Craig Hospital, which specializes in neurorehabilitation. Also joining the network is NeuroPT in Denver, a physical therapy practice for people with neurological conditions.

"We are excited to collaborate with UCHealth University of Colorado Hospital, Craig Hospital, and Neuro Physical Therapy to deliver a connected experience that allows patients to experience the best of both worlds, combining continuous support throughout their lives with the Cionic Neural Sleeve, alongside hands-on care in the clinical environment," Jeremiah Robison, Cionic founder and CEO, said in a company press release.

"As the father of a daughter with mobility impairment, I know how valuable it is when care is coordinated between her physicians, physical therapists, and everyday life experiences. The Cionic Neural Sleeve facilitates this high level of coordination by combining the diagnostic power of a gait lab with individualized therapeutic stimulation into an everyday wearable that can be

Anyone wishing to see the difference the neural sleeve can make to walking in MS can look at the company's website which shows films of several US MSers with mobility impairments who are trying out the Cionic neural sleeve. You can see them "walking" using the neural sleeve at https://cionic.com/community#patused

Photo on p1 and 6 by Marcus Wallis on Unsplash **For further details of sources for feature see page 14**

Vidofludimus may become first tablet treatment for SPMS

A new tablet for progressive MS has shown impressive results in clinical trial results presented at the recent ACTRIMS MS conference held recently in the US. MS expert Prof. Gavin Giovannoni said: "It is an exciting time for MS, and if vidofludimus is shown to be the first DMT to target smouldering MS, it would have reached patients against the odds."

Vidofludimus, also known as IMU 838 is a new drug treatment for all types of MS including secondary progressive and primary progressive (MS). It is taken as a tablet once daily. It works by blocking an enzyme (dihydroorotate dehydrogenase, DHODH) which is essential for the growth of activated T-cells and B-cells, white blood cells involved in the immune response that damage the myelin coating of nerves in the brain and spinal cord. The drug is thought to reduce inflammation around the nerves. Vidofludimus has a similar mechanism of action to Aubagio (teriflunomide) but is thought to have a more targeted effect, reducing the risk of side effects.

In a phase II trial called CALLIPER – vidofludimus compared to placebo, in secondary and primary progressive MS - 450 participants with primary or secondary (active or non-active) progressive MS were recruited. One half took vidofludimus and the other half took a placebo for approximately 6 months. The main aims of the study were to assess the effect of vidofludimus on brain volume change and on disability progression, measured as worsening of disability which persists for six months. The study also monitored safety and tolerability of vidofludimus.

The trial has just completed but an interim analysis published in February showed that people in the study taking vidofludimus calcium had 22.4% reduction in serum neurofilament levels. Neurofilaments are used as an indicator of nerve damage, so the researchers interpret this as showing that vidofludimus calcium is acting in a neuroprotective way. The reduction in neurofilament levels was greatest in active secondary progressive MS (43%) and non-active secondary progressive MS (21%). Those with Primary Progressive MS had an 18 % reduction in levels.

Prof: Giovannoni went on: "Vidofludimus has potent antiviral effects, including targeting EBV, hence my interest in the drug. It is much cleaner than teriflunomide. Hence, it is very well tolerated and with few side effects. More recently, it has also been shown that vidofludimus acts as a potent nuclear receptor-related 1 (Nurr1) activator. Nurr1 is an emerging target in neurodegenerative diseases. Activation of Nurr1 is likely to be responsible for the drug's neuroprotective effects. It may explain its potential impact on smouldering MS. **For details of all news stories go to page 14**

New drug for prog MS may bring 'sustained disease control'

US researchers working with a bio-pharma are conducting a trial of a new drug which could re-boot a patient's immune system. A single infusion may provide sustained disease control for those with progressive MS without relapses.

An open-label Phase 1 trial of KYV-101 (NCT06138132) is taking place at Stanford Multiple Sclerosis Centre in Palo Alto, California. It is enrolling up to 12 people, aged 18 to 55, with primary progressive MS (PPMS) or secondary progressive MS (SPMS) who have not had recent relapses. The study started in February2024 and is due to complete by June 2027

All those taking part are receiving a single dose of the CAR T-cell therapy and will be followed for up to one year. The study's main goal is to determine if the therapy is safe and tolerable, and to determine the dose with the best safety and potential efficacy profile.

Collaborative studies also will be conducted into how certain disease biomarkers change after KYV-101's infusion, with researchers aiming to define signs of response and the investigative treatment's potential for reprogramming a patient's immune system.

KYV-101 belongs to a class of treatments called CAR T-cell therapies, which involve isolating a patient's immune T-cells and engineering them to carry a man-made receptor — a Chimeric Antigen Receptor or CAR — to target a specific protein. In the case of KYV-101, the receptor targets the CD19 protein, which is found at the surface of immune B-cells that are implicated in MS. Once modified and expanded in the lab, these cells are infused back to the patient, where they are expected to target and promote the elimination of B-cells. It is believed a single infusion of KYV-101 may provide sustained disease control for people with progressive MS.

Prior to treatment, patients will undergo a preconditioning regimen, called a lymphodepletion regime, to clear out existing T-cells using, a chemotherapy treatment. The Stanford phase 1 trial carried out in collaboration with Kyverna Therapeutics will be conducted along with a Kyverna-sponsored Phase 2 clinical trial that was cleared by the U.S. Food and Drug Administration (FDA) earlier this year. The KYSA-7 trial will enrol people with progressive MS who have failed to respond adequately to other therapies.

The FDA granted fast track designation to KYV-101 as a potential treatment for progressive MS. The designation is intended to accelerate the development of therapies addressing unmet medical needs for people with serious or life-threatening conditions like prog-MS.

For details of all news stories go to page 14

Signs of Benefit for Stem Cell Therapy in Progressive MS

Injections of autologous bone marrow–derived mesenchymal stem cells (MSCs) into the spinal cord of patients with progressive MS (intrathecal injections) resulted in “favourable effects” on both symptoms and disease biomarkers.

That’s according to new data presented as a late breaker at the annual meeting held by the Americas Committee for Treatment and Research in Multiple Sclerosis (ACTRIMS) Forum 2024.

In an analysis of 23 patients participating in an extension study, after at least one year of follow-up, "there were favourable effects on cognitive function, neurological functional tests, quality of life, and both of two major biomarkers linked to neurodegeneration," said study investigator Dimitrios Karussis, MD, PhD, Chairman of the Multiple Sclerosis Center, Hadassah Hospital, Jerusalem, Israel.

Based on promising preclinical studies, the initial clinical study with MSCs was published in Brain in 2020. In that study, 48 participants were randomly assigned to receive an intrathecal injection of MSCs, an intravenous injection of MSCs, or a sham injection. The MSCs were collected from the bone marrow of each participant and cultured.

A second injection in the active treatment groups was administered at 6 months. At this time, those initially randomized to a sham injection received either an intrathecal or an intravenous (IV) injection of MSCs harvested from their bone marrow. When evaluated at the end of 1 year, there was no evidence of disease activity in 58.6% of those receiving the two intrathecal injections of MSCs, 40.6% of those receiving two IV injections of MSCs, and 9.7% of those initially randomized to the sham group.

The intrathecal injection of MSCs, which was well-tolerated, appeared to be more effective and was associated with relative benefits on multiple additional measures, including reduced T2 lesion load, lower relapse rates, and sustained cognitive function.

A total of 40 patients from the initial study were enrolled in the extension. In his presentation, Karussis provided interim results on 23, all of whom had been followed for at least an additional year. These patients were treated with one to three intrathecal injects of MSCs at intervals of 3-6 months. Of further gains during the extension, Karussis described gains in cognitive function, represented by a three-degree improvement in the Symbol Digit Modalities Test, a median 17% improvement in the 25-foot walk test, and an improvement in quality of life, captured in domains of both physical and mental function. All of these gains were statistically significant. **For further information go to page 14**



The unspeakable problem of progressive MS

I often feel progressive MS is a bit like an octopus. It has many arms and each one attacks the body in different places, and in different ways. Yes, progressive MS is a slippery adversary.

To give a recent example, it is well known that MS can affect your voice. One of the many MS voice problems is hoarseness – with your voice sounding raspy or strained. This has been my particular problem for the past year.

It all started early in 2023. Initially I thought I might have a pollen allergy. There are different sorts of pollen allergies and there is a season for each. Spring allergy season (tree pollen) starts in March. Then, as Summer arrives, pollens from grass appear. Summer allergies are in full swing by July. But it's not over then. Starting in late Summer and throughout Autumn, various weeds especially ragweed are the big seasonal allergy offenders. Then, as Winter arrives, you shut all your windows and indoor allergy triggers like dust mites kick in.

Throughout 2023 my hoarseness remained at more or less the same level. It clearly wasn't caused by a specific allergen, but things weren't improving and I was starting to avoid places where I needed to raise my voice or speak clearly. Speaking for long periods was impossible. It wasn't until late 2023 that I began to ask myself whether my voice problems might be related to my advancing MS.

According to the US magazine MS Focus as many as 40 percent of people with MS will face speech difficulties at some time and there are many different ways MS can cause these. MS can affect parts of your brain that control the muscles involved in speech. When these muscles are affected, the speech problem is called dysarthria. MS can also affect messages in the brain that control your voice box. This can change the sound of your voice, something known as dysphonia**.**

I mentioned it to my neurologist at our annual meet. Hearing me speak, the neurologist suggested I see an ENT (ear nose and throat) specialist. A month or so later I was back in the hospital. This time in its ENT department. **Continued on page 11**

Continued from p10 There, after a brief chat, the specialist pulled out a thin tube, called a nasendoscope, and asked me if it was alright to stick it up my nose so he could see what was going on in and around my vocal cords.

The specialist had a large screen so that he could see my larynx or voice box as the nasendoscope was inserted. Helpfully he turned the screen around so that I could also see what he was doing. The first thing I saw was a white mist, which I was told was a huge amount of mucous blocking the view. I was asked to swallow and clear my throat and, as if by magic, the mist of mucous cleared and I could see everything clearly.

The good news was that I could then see my vocal cords, or vocal folds to give the correct medical term. However, when we zoomed in on the edges of the vocal folds there was a "cuff" which was a darker colour than the rest of the vocal fold. "That is old hardened mucous", the specialist said. He explained there was so much mucous that initially looking at the vocal folds had been almost impossible, with the screen misted over by its profusion. As I left, the consultant wrote down the name of a natural sea water based nasal spray, Sterimar, which I could buy over the counter for about £5 and which would go down into my voice box and wash away the mucous keeping the whole area clean and decongested.

A few days later a letter arrived from the ENT doctor confirming that the examination of my mouth, throat and neck was "entirely normal". That was the good news. However, he also wrote: "Flexible nasendoscopy (camera test) showed copious amounts of secretions sitting in the top part of the voice box or supraglottis

"It is likely that your voice changes are related to the supraglottic secretions which is probably secondary to a mild problem in swallowing related to your multiple sclerosis. I have advised that if you do want some treatment for this you can trial a saline nasal wash to try and wash away the secretions," he advised. He suggested a product called Sterimar.

Fortunately, I have been using Sterimar for the past few months and am happy to say the congestion has greatly improved. My voice is improving daily and I will continue using the spray until things are entirely back to normal. It is rare in progressive MS that you can talk about a problem being easily identified and solved but I would say that I am as close as I can get to this happy place and I, for one, will settle for that.

For details of all features go to page 14. **Picture on p10 Dmitry Vechorko on unsplash**

News

Fatigue drug may lead to less disability and better walking

An investigational drug aimed to tackle tiredness in progressive MS may also lead to improvements in disability levels, an easing of symptoms or improvements in walking ability. That's according to new research from US biopharma Tiziana Life Sciences,

Based on early findings from an EAP (Expanded Access Programme) Tiziana launched a clinical trial late last year to test the nasal spray called Foralumab in SPMS patients in a randomized control trial. The main goal of the trial is to assess changes in the activity of microglia, or brain resident immune cells known to contribute to MS progression. But researchers are also monitoring changes in quality of life, and fatigue

As part of the research a Phase 2 trial (NCT06292923) is recruiting participants at Brigham and Women's Hospital, in Boston. A total of 54 patients with nonactive SPMS will be randomly assigned to receive either a 50 or 100 microgram (mcg) dose of foralumab or the placebo for about three months. Meanwhile, the U.S. Food and Drug Administration has allowed the company to expand its EAP (Expanded Access Programme) from 10 participants to a total of 30 — meaning that patients who are ineligible for the trial might be able to receive the medication in this compassionate use program.

Foralumab is an antibody-based therapy designed to reduce MS-driving inflammation by targeting the CD3 protein at the surface of immune T-cells. That's expected to reduce the activity of inflammatory T-cells, while boosting the activation of regulatory T-cells that help to control excess inflammation.

Participants are receiving a 50 mcg dose of foralumab, sprayed into each nostril in cycles of three weeks. In all, treatment is given three times weekly for two weeks, followed by a week of pause. Early results have shown that the therapy generally is safe, with no patients experiencing any serious side effects.

Four patients experienced improvements in their disability levels — meaning they had a reduction in their Expanded Disability Status Scale (EDSS) scores, or an easing of symptoms. Another four saw actual improvements in their walking ability, as measured with the timed 25-foot walk. The remaining patients had stable scores on these measures.

All 10 foralumab-treated patients stabilized or improved in key clinical measures, and seven showed [clinically] meaningful improvement in their fatigue at six months.

For details of all stories go to page 14

Rat model says vitamin D may be most helpful for men with prog-MS

Vitamin D supplements were associated with less severe disease in a rat model of progressive MS, but male rats tended to experience greater benefits than did female rats, a study into disease-related sex differences reports. It has been suggested that this animal study may translate into MS in humans.

The higher overall benefit of vitamin D in male rats may be due to nerve cells in males being more susceptible to oxidative stress, damage that occurs when the body's antioxidant defences cannot counteract the production of free radicals, the researchers noted. Oxidative stress is known to contribute to disease progression in MS, and to be eased with vitamin D.

While more studies are needed to know if these findings hold true for people with MS, understanding how vitamin D supplementation might alter the disease's course in men and women could help in better tailoring MS treatments.

The study, "Sex Differences under Vitamin D Supplementation in an Animal Model of Progressive Multiple Sclerosis," was published in the journal Nutrients. A research team in Austria worked with a rat model of progressive MS, with the animals fed regular food with or without vitamin D supplementation starting at age three weeks. Groups of both male and female rats were given the supplement, and the researchers then watched for differences in symptoms and disease features.

Female rats were seen to have a better total antioxidant capacity, meaning antioxidants in their blood were able to scavenge a greater amount of harmful, oxygen-containing free radicals. Damaging free radicals arise as a result of the molecular reactions taking place in cells. They also showed a greater preservation of the myelin sheath, which is damaged in MS, and fewer activated microglia, immune cells that help to drive the inflammatory attacks that mark the disease. While nerve cell death was more frequent in female than male rats, the disease did not progress as quickly in female animals.

Notably, vitamin D supplementation improved most of these markers in both groups of animals, but male rats experienced a greater reduction in markers of oxidative stress with its use. Vitamin D also led to a significant reduction in blood levels of neurofilament light chain, a marker of nerve cell damage, in male rats but not in female rats.

Rats of either sex benefited from vitamin D supplementation, but "unexpectedly, male rats had an even higher overall benefit, most likely due to differences in oxidative capacity," the researchers wrote. "These findings should further be investigated in clinical trials to learn more about these mechanisms in patients." **For details of all news stories see page 14**

References further details, etc

Page 2 Cladribine prog-MS study

https://www.abstractsonline.com/pp8/#!/20258/presentation/658

Potential Role of Oral Cladribine in Treatment of Non-Active Secondary Progressive Multiple Sclerosis: A Pilot Experience, S. Cicero1, J. DelGrosso2, C. Hansel1, K. Pfeiler2, B. Glanz1, C. Tracey2, R. Dhillon2, T. Singhal1; 1Brigham and Women's Hospital, Boston, MA, 2MS Center, Sturdy Memorial Hospital, Attleboro, MA.

Page 3 Tysabri/ Natalizumab in progressive MS

https://www.thelancet.com/journals/laneur/article/PIIS1474-4422(18)30069-3/abstract

https://multiple-sclerosis-research.org/2024/03/a-new-look-at-old-data-natalizumab-inhibiting-nerve-loss/

https://pubmed.ncbi.nlm.nih.gov/38469809/

https://www.neurology.org/doi/10.1212/WNL.88.16_supplement.P5.330

https://pubmed.ncbi.nlm.nih.gov/29545067/

page4 Vaccine for recurrent urinary tract infections (utis)

https://www.medscape.com/s/viewarticle/recurrent-utis-find-long-term-ally-oral-vaccine-2024a10006lc?ecd=mkm_ret_240419_mscpmrk_uro_top-content_etid6453243&uac=223883BY&impID=6453243

More information about private Uromune vaccination for utis can be found at https://theurologypartnership.co.uk/treatments/uti-vaccine/

Pages 5-6 Neural sleeve

https://cionic.com/neuralsleeve

Page 7 Vidofludimus for progressive MS

https://www.clinicaltrials.gov/study/NCT05054140

https://mstrust.org.uk/a-z/vidofludimus-calcium

Prof. Gavin Giovannoni MS selfie on substack (subscription only)

Page 8 New drug for prog MS may bring 'sustained disease control'

https://multiplesclerosisnewstoday.com/news-posts/2024/03/13/clinical-trial-kyv-101-progressive-ms-minus-

https://www.clinicaltrialsarena.com/news/kyverna-kyv-101-treatment/?cf-view

Page 9 Signs of Benefit for Stem Cell Therapy in Progressive MS

https://www.medscape.com/viewarticle/signal-benefit-stem-cell-therapy-progressive-ms-2024a10004dc?ecd=wnl_conf_neuro_ACTRIMS-NON-SPON_240309_mscpedit_etid6360571&uac=223883BY&impID=6360571

Page 10-11 Voice problems increase as MS progresses

https://msfocusmagazine.org/Magazine/Magazine-Items/Getting-the-Word-Out-Speech-Difficulties-and-MS.aspx#:~:text=As%20many%20as%2040%20percent,day%20on%20a%20regular%20basis.

https://www.sterimarnasal.co.uk/our-products/cold-congestion/congestion-relief-50ml-100ml/

Page 12 MS fatigue drug may lead to better walking

https://multiplesclerosisnewstoday.com/news-posts/2024/04/24/foralumab-eases-fatigue-most-spms-patients-access-program-report/?utm_source=MS&utm_campaign=0cc111a511-Email_ENL_NON-

Page 13 Rat model suggests vitamin D may work better in men with prog-MS

https://multiplesclerosisnewstoday.com/news-posts/2024/03/20/vitamin-d-benefits-greater-males-progressive-ms-rat-model/

To Contact me email iancookjournalist@yahoo.co.uk or via twitter@iancookMSer

DISCLAIMER:

This ezine is strictly a news and information ezine/website about MS . It does not provide medical advice, diagnosis or treatment. This content is not intended to be a substitute for professional medical advice, diagnosis, or treatment. Always seek the advice of your doctor or other qualified health provider with any questions you may have regarding MS or any a medical condition. Don't disregard professional medical advice or delay in seeking it because of something you have read in this ezine.

To Contact me email iancookjournalist@yahoo.co.uk or via twitter@iancookMSer