SEPTEMBER 2021

Global perspectives:

HAEi MAGAZINE · ISSUE 3/2021

93 Member countries

HAEi ADVOCACY ACADEMY

Global perspectives:

Global Perspectives
Issue 3/2021
September 2021

Cover photo
New courses in the HAEi Advocacy Academy – read more on page 15.

Magazine staff
Henrik Balle Boysen, Executive Vice President and COO

Rikke Sørensen, Communication Design and Graphics Manager

Steen Bjerre, Communications Manager

Subscription
If you would like to subscribe to our magazine, please send an email to info@haei.org or register directly at haei.org

HAEi 2021 activities are supported by:

biocryst

CSL Behring

Pharming

Takeda

HAEi
HAE International

HAEi is registered as a non-profit organization in USA

HAEi is a global non-profit umbrella organization dedicated to working with a network of national HAE member organizations to raise awareness of HAE

DEAR HAEi FRIENDS,

Welcome to this third edition of *Global Perspectives*, HAEi's quarterly magazine. The pages that follow offer the only truly comprehensive overview of what is happening in the world of HAE.

Unfortunately, ongoing restrictions of daily life linger due to the COVID-19 Delta variant and continue preventing HAEi from conducting in-person gatherings. Nevertheless, we are very excited about our next Virtual Regional Workshop that will bring together HAEi friends from Sub Sahara Africa, the Middle East, and North Africa. We hope that the combination of wider global availability of vaccines and high vaccination rates will significantly reduce risk from the virus and bring normalcy to our daily lives.

HAEi friends can be assured that our Board of Directors and staff are passionate about vigorously and systematically pursuing our overarching goals to

- unite the global HAE community, and
- help our member organizations raise HAE awareness, improve time to diagnosis, and fiercely advocate for approval and reimbursement of lifesaving therapies.

We are always working hard to ensure HAEi is positioned to best serve the needs of our member organizations as they advocate for the health and well-being of people with HAE and their families. With that idea in mind, we have created a decentralized infrastructure that delivers HAEi's programs, services and activities to the local level through our Regional Patient Advocates (RPAs) – the "on the ground forces" serving our 93 member organizations.

Capturing and understanding the voice of our member organizations is at the core of HAEi's operational philosophy. We are constantly seeking member organization feedback not only from our RPAs' day to day work, but also from sessions with our Regional Advisory Groups that consist of member organization leaders in each region.

A complete understanding of the needs and circumstances of member organizations in each region would not be possible without input from local physician-advisors. The physician perspective is now well represented by the Regional Medical Advisory Panels (RMAP) that our RPAs have established in each of their regions.

HAEi has always sought to represent the global community when it comes to accrediting clinics focused on HAE, and establishing standards for optimal levels of clinical care. Our global network of accredited Angioedema Centers of Reference and Excellence (ACARE) provides HAEi with a prominent position when it comes to clinical guideline formulation and the direction of HAE research. ACARE and our RMAPs offer the community a unique opportunity to integrate the voice of people with HAE and the global physician community.

Before closing this message, I would like to call your attention to a couple of HAEi programs that are featured in this edition of *Global Perspectives*. Our very popular **HAE TrackR** app that helps people with HAE document how HAE affect the patient's life is now available in 13 languages. See page 18 for more details and a link to this exciting HAEi offering designed by and for people with HAE. Finally, please be sure to read all about the HAEi Advocacy Academy, our online, cloud-based virtual training platform featuring a comprehensive set of educational modules on HAE-related information along with advocacy concepts and skills (see page 15).

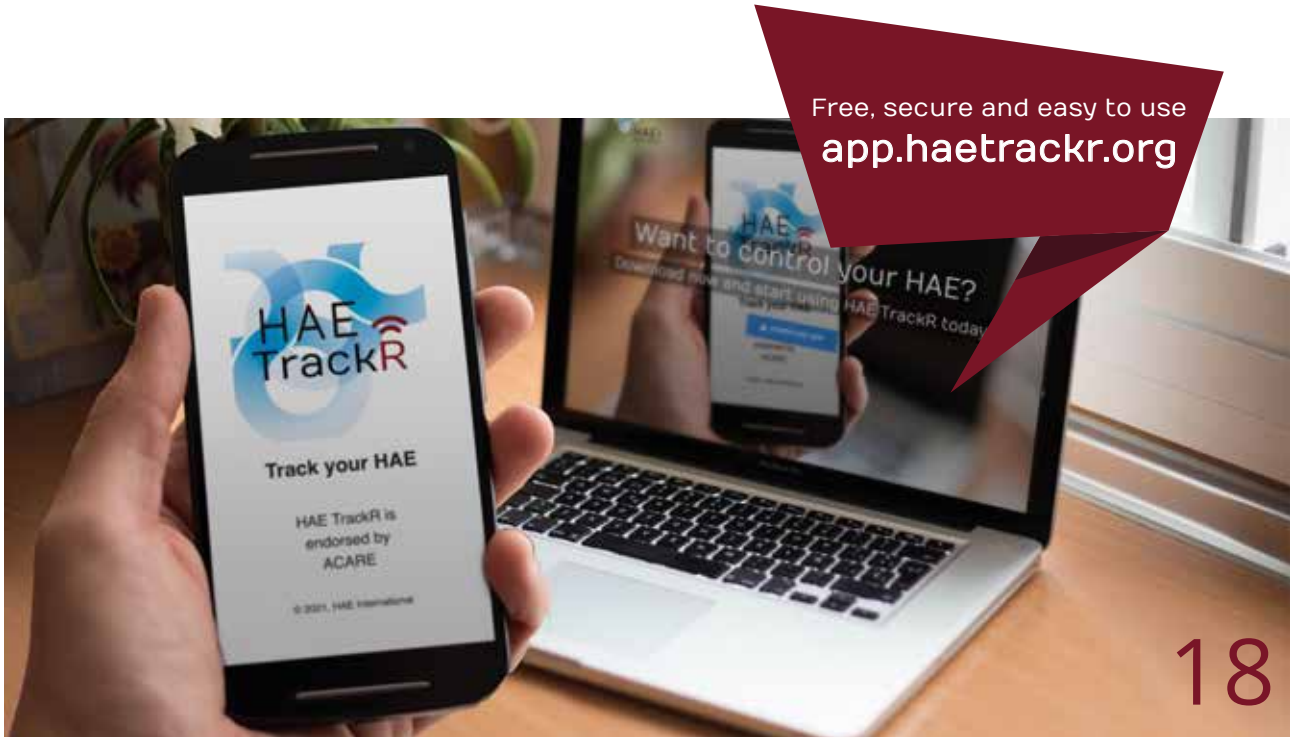
I wish you good health and happy reading,

Tony

Anthony J. Castaldo
President and CEO, HAEi

IN THIS ISSUE OF GLOBAL PERSPECTIVES

HAEi ADVOCACY ACADEMY



NEWS FROM THE HAEi REGIONAL PATIENT ADVOCATES

HAEi has some great new resources that our Regional Patient Advocates (RPAs) have rolled out to assist member organizations and patients over the past few months. The HAEi Advocacy Academy resource now includes "exclusive access" to member organizations to help them run their daily business and learn more about some of the tools and resources that HAEi offers. We are proud of Advocacy Academy and what it provides member organizations. We have the Regional Advisory Groups (RAGs) to thank for the inspiration behind these courses. The courses bring to life the unmet needs and challenges highlighted by the RAGs from the first round of meetings with their RPAs. More exciting and worthwhile courses are being released regularly.

The TrackR app is a fantastic resource for patients to keep a diary of their attacks and treatment regimen and how it affects their lives and the lives of their carers. The app is available in many languages – if your language is not yet available, please reach out to your RPA.

Over the past few months, some RPAs have been working with individual countries to advocate and gain access to modern treatments. The patients in these countries will benefit immensely from these treatments. Lives will change!

It is great to see the inroads made by the RPAs in countries with no patient groups. The RPAs continue to find ways to connect with interested physicians and people who can assist in locating patients while they create awareness and education of HAE.

As a quick reminder, your RPA is always ready to help you and your member organization. Your RPA can provide you with a wealth of knowledge, support and assistance. Please reach out for any questions or support you may need.

We hope you will enjoy reading about all that is going on in the HAEi regions.

Fiona Wardman
Chief Regional Patient Advocate

JØRN SCHULTZ-BOYSEN
NORDICS, GERMANY, AUSTRIA AND SWITZERLAND

After an amazing and successful **hae day :-)** with lots of activities from HAE patients, caregivers, health care professionals and industry, it continues to be wonderful reading about all the countries that participated on haei.org. The information about the countries, from past to present and looking ahead towards the next ten years is both educating and entertaining reading.

While the **hae day :-)** has taken a lot of time and focus, many other things have been prioritized. We are continuing to gather the Regional Medical Advisory Panel with some doctors already in place – I look very much forward to finalizing the work and learning from all the experience gathered amongst the people in the panel.

The HAE TrackR app has been launched and is now available in many languages, amongst others in German, Norwegian, Swedish, and Danish. We are looking forward to having the app ready in Finnish as well – and hopefully, Icelandic will follow. The app is easy to use – and safe to store your data in – and it will help patients and physicians in their dialogue on current and future treatment options. I can only urge everyone to check it out and to start using it. The member organizations are letting their members know of the option to use the HAE TrackR app as well – this is really great.

Germany has released several podcasts on everyday issues, challenges, and opportunities when living with HAE. This is very interesting and valuable to listen to and to learn from.

On 2 September 2021, the patient organization in **Switzerland** celebrated its 20th anniversary. Huge congratulations to everyone involved in realizing the first two decades, and all the best for the years to come. Although a physical meeting, unfortunately, has not been possible due to the Coronavirus, I am sure the big day was marked in many homes around Switzerland.

The number of ACARE centers continues to grow, and the 7th ACARE center in Germany, the Department of Dermatology at the University of Erlangen, has just been added. Furthermore, there are now two centers in **Austria**, The Department of Dermatology at the Medical University of Vienna, and the Kepler Universitätsklinikum, Universitätsklinik für Dermatologie und Venerologie in Linz.

During the weekend of 12-14 November 2021, HAE Scandinavia – covering **Norway**, **Sweden**, and **Denmark** – will host its 4th conference, this time in Copenhagen, Denmark. This conference will at the same time mark the 20th anniversary of the Scandinavian organization. The conference's theme is "The Power of Prophylaxis", focusing on the value of having the option of prophylactic treatment in Scandinavia.

It is also very exciting that we are in contact with the University Hospital in Reykjavik, **Iceland,** about a new patient guide to be used for Icelandic patients.

MARIA FERRON
MEDITERRANEAN, NORTH AFRICA AND BRITISH ISLES

Over the past couple of months, work has progressed on the HAEi Virtual Workshop for the Middle East, North Africa, and Sub Sahara Africa. We have finalized the video recordings, and I have been working with the Regional Patient Advocate for Central Eastern Europe, Benelux, and the Middle East on the new website for the Middle East and North Africa. This will be a fantastic event and a great resource, and we are pleased that we have received participation confirmation from a number of doctors in the regions.

HAEi TrackR has been translated into Portuguese and Spanish, and I have informed all countries in my region that it is now available. The member organization in **Spain** has been promoting this via its social media channels and newsletter, as have other countries. HAEi has also launched Advocacy Academy, which is available to individual patients and member organizations, and we have been working on promoting this.

The emergency room poster is now available for **Portugal**, **Israel**, Libya, and **Mauritania**, which will help to raise awareness of HAE in emergency settings.

I have been working with doctors in Portugal to produce and present a letter to the Ministry of Health and the Drug Authorities and supporting Spain in preparing for the annual meeting and patient courses, which we hope will commence after the summer. Work is also progressing in setting up the HAE group in **Tunisia** and creating their website.

In June, the 12th Euro-African Congress of Allergy and Clinical Immunology took place in Algiers, **Algeria**, with a session on HAE in Children and Adults, with Professor Laurence Bouillet from France.

Lastly, I am pleased to announce that Ruconest has been accepted by the Commission of Pharmacists from Hospital La Paz in Spain and will be available in Madrid soon. Working with the pharmaceutical company, we are hoping that shortly this will be available in other regions too.

MICHAL RUTKOWSKI
CENTRAL EASTERN EUROPE, BENELUX AND MIDDLE EAST

I am so happy to catch up with you again and share what happened over June, July, and August. It has been a hectic period, full of advocacy activities and crucial successes.

First, I would like to share with you some wonderful news about the situation of HAE patients in my home country, Poland. I can proudly announce that the first preventative therapy has been approved and reimbursed in **Poland**. This is a great and unprecedented achievement of the entire Polish HAE community, the patient organization, and expert physicians, who together with Takeda for over 18 months undertook various activities to raise awareness of the need to reimburse long-term prophylaxis. You can read more about this under "Poland" in the section with news from the national organizations.

June was dominated by activities focusing on preparations for the HAEi Virtual Workshop for the Middle East, North Africa, and Sub Sahara Africa. Together with other Regional Patient Advocates and the HAEi Team, I recorded video presentations with representatives of HAEi member organizations and physicians from the regions. Also, we edited all the videos and prepared them in a form to be sent for transcript and translation. One of the elements of preparations for the virtual workshop is the launch of a website dedicated to patients from the Middle East and North Africa. We expect to have this website ready before the workshop launches.

Furthermore, in June, I continued my bi-monthly zoom meetings with my member organizations. I had the opportunity to catch up with patient leads from **Hungary**, **the Netherlands**, **Kazakhstan**, **Russia**, **Belarus**, **Georgia**, and **Ukraine**. Moreover, I enjoyed attending the Takeda Gulf Countries and Lebanon Patient Webinar, where I introduced HAEi and its values for the Global patients' community. And finally, in June, the HAE TrackR app became available in Polish.

On 8 July, I was privileged to attend the Ukraine and CIS cluster HAE Patient Advisory Board organized by Takeda, where I shared the experience and achievements of the work done by the patient organizations in Belarus, Kazakhstan, and Ukraine. Plenty of great initiatives have been organized in these countries, and many more are to come. Also, in July, I attended virtual meetings with BioCryst Pharmaceuticals to discuss the needs of the patients' community in the Middle East.

In July and August, I was in constant contact with the Ministry of Health in Poland. I participated in meetings with the Deputy Health Minister and provided materials and data relevant to approval for long-term prophylaxis for HAE patients.

As always, I constantly work on implementing HAEi resources and projects in the countries I cover. In the recent period, I have focused on the HAE TrackR app and HAEi Advocacy Academy – and I hope that these resources can be valuable assets for all users.

PATRICIA KARANI
SUB SAHARA AFRICA

A team of doctors dedicated to raising awareness in **Zimbabwe** have opened a Facebook page to share more information with the public and fellow health care professionals. They have invited patients and caregivers to join the support group and are sharing vital information on HAE. Have a look at www.facebook.com/HAE-Zimbabwe-106229328431928. Also, Dr. Careen – a lead dermatologist in Zimbabwe – has put up the HAEi Emergency Department posters in local hospitals to create more awareness on HAE.

I have partnered with the Rare Disease **Ghana** Initiative and held an HAE training seminar for doctors and clinicians. It was well attended with over 40 participants who engaged the doctor panelists from Kenya and South Africa.

The first HAE training has been held in **Tanzania**, and it was well attended by doctors and clinicians. Dr. Bowry from Kenya presented on a diagnostic approach to HAE, while Dr. Peter from South Africa engaged the audience with treatment and management of HAE.

I am in contact with HAE patients in **Sudan**, and we have been able to refer them to the HAE knowledgeable doctor, Prof. Nahla Erwa, for better management and care.

JAVIER SANTANA
CENTRAL AMERICA AND CARIBBEAN

For several months, HAE patients in **Costa Rica** have conducted interviews with the media to denounce the situation they are experiencing as the Government has not heard their claims. Several patients have been hospitalized with severe HAE attacks, one has been intubated to save his life, and according to HAE Costa Rica, three patients diagnosed with HAE have died from severe attacks. For the past years, doctors working for the Government have rejected the introduction of effective drugs for attacks, alluding that they did not recognize their effectiveness or that they were not used in first-world countries, despite the claim of specialist doctors in Costa Rica and the international community.

After numerous media reports, meetings with government officials, and a letter from the HAEi Board of Directors addressed to the Ministry of Health in Costa Rica asking for fair treatment and access to HAE treatment, new conversations with the Ministry have emerged to resolve the current crisis. We are hopeful that in a short time, the Costa Ricans will finally be able to have access to treatments that guarantee them a better quality of life.

In countries such as **the Dominican Republic**, **Guatemala** and **Panama**, representatives of the patient organizations and groups continue to work hard to achieve greater access to treatment. More doctors treating new patients with HAE have been identified.

Finally, more patients in Central America and the Caribbean use HAE TrackR, the new app to track your HAE attacks and have your personal log.

FERNANDA DE OLIVEIRA MARTINS
SOUTH AMERICA AND MEXICO

I have been in contact with Lisa Facciolla from HAEA regarding the Brady Club. I've reached out to the member organizations in my region asking who are interested in receiving the kids' material in Spanish. These countries have demonstrated interest: **Argentina**, **Brazil**, **Chile**, **Colombia**, **Ecuador**, **Mexico**, **Paraguay**, **Peru**, **Uruguay**, and **Venezuela**. I am coordinating with Lisa on the best way to make the material available to the countries. They will get an online version of the material as well as printing one in case they want to have it printed locally. Also, I have connected Lisa with João from HAE Brazil (ABRANGHE) to have the Brady Book available in Portuguese.

I have supported with the translation into Portuguese of the HAEi TrackR, and I have informed by email and WhatsApp to the leaders of the member organizations about the launch of the HAE TrackR app, and I have collected feedback on the app in my region.

HAEi Connect is now implemented in Peru and Colombia. I have followed the implementation up with the leaders in Peru and Colombia and am supporting them with the use of the tool.

Furthermore, I have recorded a video for the HAEA Summit, talking about access to HAE medication in Brazil.

The member organization leaders have been informed on the HAEi Advocacy Academy Exclusive Area, and I have provided them with the exclusive codes – and obviously encouraged the leaders to do the courses. I have joined the Advocacy Academy and trained myself in topics like hosted website and HAEi Connect. The translation into Portuguese seems to be good.

Also, there have been posts on Instagram - feel free to follow at @haei_sudamerica_y_mexico.

NATASA ANGJELESKA
SOUTH EASTERN EUROPE

I have informed the patient representatives in my region about the HAE TrackR app and sent them the files for translation. So far, we have the app translated into Serbian and Turkish – and expect to have it available in Macedonian very soon.

HAE **Greece** has received its registration documents and is now an official organization. I was asked to support in re-accessing the HAE Greece website hosted with HAEi so that the Greek organization can start announcing its initiatives.

A press conference titled "Equal chances of treating patients with a rare disease" was held on 15 June 2021, organized by the National Organization for Rare Diseases of Montenegro and HAE **Montenegro**. The conference addressed (1) Rare diseases in Montenegro from the point of view of oncologists and the importance of modern therapy, (2) Rare diseases in Montenegro from the point of view of allergists and the importance of modern therapy, (3) Equal treatment opportunities for people with rare diseases, (4) Rare diseases from the patient's point of view, and (5) Legislation. The event was one in a series organized to change the legislation and enable re-gaining access to modern therapies for HAE patients alongside other rare disease patients.

HAE **Macedonia** has received preventive treatment for pediatric patients for the first time. Hopefully, this will open the door for other patients to gain access to preventative therapies.

HAE **Croatia** is proud to announce that due to intensive media coverage in the light of the **hae day :-)** the organization has assisted in one more patient being diagnosed with HAE. The patient read a newspaper interview and was diagnosed after 40 years of having symptoms.

I have been invited to and participated in two sessions of Takeda's 10th meeting for nurses from Europe and Canada, "Connect for care: The evolution of rare disease nursing: Patient perspectives" (6 July) and "The impact of COVID-19 on HAE nursing and patient care" (7 July). Also, I presented about "Unmet needs in HAE care – patient perspective" (7 July).

Before the end of the summer period, I informed patient organizations and patient groups in my region about all the interesting training courses made available by HAEi through HAE Advocacy Academy. Each country received their unique code to access training courses that will enable them to read and learn about different advocacy tools.

FIONA WARDMAN
ASIA PACIFIC

Happy birthday to HAE **Hong Kong**! Congratulations to the team at HAE Hong Kong for their 2nd year of dedication to improving the quality of life for patients in Hong Kong.

During the last few months, I have participated in meetings with various pharmaceutical companies to move forward access to modern therapies in the Asia Pacific region. There have been Zoom meetings with the member organizations in the region on things like the burden of illness study as well as general catchups for patients and their family members.

I was invited to be an Honorary Lifetime Member on behalf of the HAE (Physicians) Society of **India**. I was asked to contribute to the newsletter on the importance of collaboration.

Australia and **New Zealand** have some large projects going on – information on these can be found in the country section.

The Regional Medical Advisory Panelists who were unable to participate in the first round of meetings have submitted their answers via email.

The TrackR app information has been sent out to all countries in my region and posted on social media platforms within the region. The app works well and is helpful and easy for patients to record their attacks, treatments, and quality of life.

The Chinese Organization for Rare Disorders (CORD) invited me to participate in the 10th CORD Summit.

HAEi provided letters of support for HAE Hong Kong addressed to contacts within the health ministry and other offices. The purpose of the letters was to gain support for funded access to modern therapy. Patients can currently buy their own supply of on-demand treatment. Information has been given to HAE Hong Kong on administering the product, and information on HAE management plans have been shared.

HAE **China** is looking to roll out the Burden of Illness survey that HAEi has offered to them.

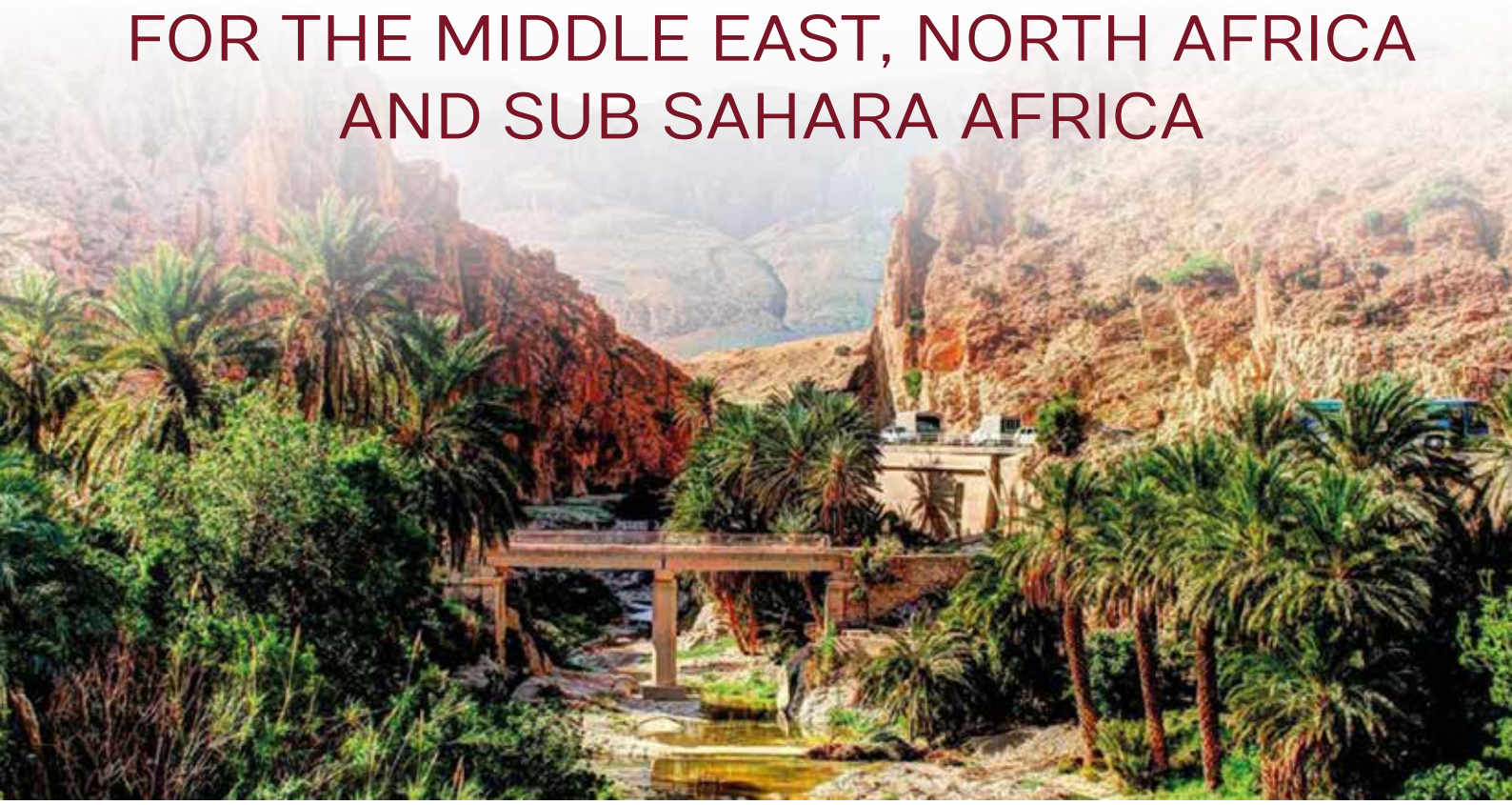
Currently, there are no known HAE patients in **Sri Lanka**. However, I have been in touch with a physician who wrote a paper on HAE; hopefully, this connection can assist with progress in this country.

Information and a link to an important workshop on "Importance and role of patient organizations in shaping health systems" were shared amongst the Asia Pacific countries. A whitepaper from the Asia Pacific Patient Innovation Summit which aims to serve "as a blueprint to help patient organizations improve their approach to sustainable funding, digitalization, and multi-stakeholder partnerships". The whitepaper is very much in line with my work as a Regional Patient Advocate for the region.

I am also delighted that the HAEi Advocacy Academy has excellent content for member organizations, the exclusive access codes have been shared with each country. The content in these courses provides information and templates to overcome the unmet needs and challenges that the countries face, as noted during the Regional Advisory Group meeting. There is also general content on advocacy for anyone to access.

HAEi
HAE International
Sub Sahara Africa
Middle East and North Africa

HAEi ANNOUNCES THE FIRST HAEi VIRTUAL REGIONAL WORKSHOP FOR THE MIDDLE EAST, NORTH AFRICA AND SUB SAHARA AFRICA



The upcoming HAEi Virtual Regional Wokrshop brings together, for the first time, HAEi friends from the Middle East, North Africa, and Sub Sahara Africa.

The meeting will feature HAE experts, member organizations, and youngsters from each country in the region. The interesting, informative, and targeted content will be provided in English, French, and Arabic.

The workshop will include presentations on diagnostics, the HAE treatment landscape, women and pregnancy, the HAEi Youngsters program, and living life to the fullest with HAE.

In addition, participants will hear from the HAEi member organizations, and HAEi will discuss the tools and resources available to support the local advocacy efforts.

The 2021 HAEi Virtual Regional Workshop Middle East, North Africa and Sub Sahara Africa will go live on 1 October 2021.

You can follow the HAEi social media channels for updates and register for the virtual workshop at haei.org/haei-virtual-regional-workshops/

HAEi
ADVOCACY
ACADEMY

NEW HAEI ADVOCACY ACADEMY COURSES NOW AVAILABLE FOR THE HAEi COMMUNITY

HAEi's popular, free, online, cloud-based virtual training platform has been expanded to include a range of new educational modules on advocacy, disease related information, and HAEi resources.

HAEi has also added an area exclusively for member organizations that offers training on how to start and build an HAE organization, and best use HAEi's tools and resources. HAEi Advocacy Academy can be accessed anytime and from anywhere in the world.

"The HAEi Advocacy Academy is the premier online learning platform for the HAE Community", says Fiona Wardman, HAEi Chief Regional Patient Advocate. "It is designed to support people living with HAE in their everyday life as well as help HAEi member organizations to sharpen their advocacy skills. After listening to our member organizations, we have introduced the Member Organization Exclusive Access area that offers skills courses, tutorials, downloadable templates, and case studies concentrating on topics member organizations

have asked us to address. We will continue responding to the needs of the global HAE community by adding courses to both the exclusive and open-access areas."

Kate Foenander, Administration Assistant for HAE Australasia, is a recent recruit to the organization and is responsible for maintaining the membership database in HAEi Connect. Kate visited the Member Organization Exclusive Access area in HAEi Advocacy Academy for training on how to use HAEi Connect:

"As a first-time user of HAEi Advocacy Academy, signing up via the specific link and Exclusive Access code was straightforward. The HAEi Connect course was great. The instructions were easy to follow, the diagrams and tips were useful in each tutorial, and it was simple to navigate between the different topics. I found answers to lots of my questions without having to bug colleagues at HAE Australasia, and I can always go back and check the tutorials if I need to. I now feel confident navigating HAEi Connect and using the different functions."

Member organizations can start using the HAEi Advocacy Academy Exclusive Access courses by contacting their Regional Patient Advocate and requesting the access code and specific sign-in link.

CURRENT OPEN-ACCESS COURSES:

HAE Advocacy Workshop: Understand it

HAE Advocacy Workshop: Plan it

HAE Advocacy Workshop: Do it

HAEi Resources

HAE TrackR

HAE Youngsters Toolkit: School & Parents

HAE Youngsters Toolkit: Teens 12–16

HAE Youngsters Toolkit: Young adults 16–25

Leadership of the member organization can use these details to create a profile and gain access to all courses.

Anyone else can register today at academy.haei.org to take the open-access courses.

Kate has also taken the open access courses in the HAE Youngsters Toolkit. She adds: "I've had a great experience all round using HAEi Advocacy Academy. The courses are a fantastic source of information and reference. They're easy to follow and a great tool for organizations, patients and carers."

Anthony J. Castaldo, HAEi President and CEO, says: "Effective patient advocacy is at the heart of delivering positive change for people with HAE. We are excited to see HAEi Advocacy Academy grow and become a practical resource to support our HAE family and especially our member organizations. Whether you are an established organization or just starting out, HAEi Advocacy Academy will be able to help you."

CURRENT MEMBER ORGANIZATION EXCLUSIVE ACCESS COURSES:

HAEi Resources Summary

HAE TrackR

Regional Patient Advocate (RPA) Program

HAEi Connect

HAEi Connect: 'How To' Tutorials

HAEi Hosted Websites

Building Your Organization Getting Started

Building Your Organization Fundraising Basics

Working with Pharmaceutical Companies

Why wait? Start using **HAE TrackR** today and get a full overview of your HAE.

HAE TrackR available in 13 languages and counting

HAE TrackR is HAEi's proprietary app, designed by and for patients, that provides a user-friendly platform for recording attacks, treatments, emergency room visits, and more.

The objective has always been to provide **HAE TrackR** in as many languages as needed to accommodate the entire community. The app is now available in Arabic, Brazilian Portuguese, Danish, English, German, Macedonian, Norwegian, Polish, Portuguese, Romanian, Serbian, Spanish, Swedish, and Turkish.

"I am particularly pleased with the fact that **HAE TrackR**, with its right-to-left language support, is now available to serve our Arabic speaking community. The right-to-left functionality will enable **HAE TrackR** to be translated into a wide variety of other languages", says Henrik Balle Boysen, HAEi Executive Vice President and COO.

HAEi is constantly working on delivering features that will help users managing their HAE. The next version of **HAE TrackR** will improve the reporting functionality and offer a notification feature that reminds the user when a prophylactic treatment is due.

Henrik Balle Boysen continues: "We are very grateful for the support we have from our global HAE community, and we look forward to continue working with you to improve **HAE TrackR**. If you are interested in helping with the translation of the app to your preferred language, please contact your Regional Patient Advocate."

HAE TrackR is available as a Progressive Web Application (PWA). A PWA is a type of application software delivered through the web, built using standard web technologies. It is intended to work on any platform that uses a standards-compliant browser, including desktop and mobile devices. Since a PWA is a type of webpage or website known as a web application, they do not require separate bundling or distribution.

HAE TrackR is available at app.haetrackr.org

HAEi YOUNGSTERS

CONNECTED BY HAE.

UNITED AS A FAMILY.

Two of the HAEi Youngsters Community members have recently joined the Board of their national member organization, HAE Scandinavia. Nevena Tsutsumanova, HAEi's Operations Manager, had a Zoom sit down with Nanna (20) and Victoria (21) to ask them about how their participation on the HAE Scandinavia board will bring an important perspective to the organization as well as the local youth advocacy movement.

I have to say it is amazing that the two of you are now on the Board of HAE Scandinavia! How did that happen?

Victoria: I think I can speak for both of us when I say that being on the Board is fantastic! We have been active members of HAE Scandinavia for years. Nanna is a patient, and I am a caregiver for my dad and brother. It was very exciting for us to be asked to join the board!

What was your initial reaction?

Nanna: I think I was surprised, but at the same time very excited. Not so much for calling myself a Board member, but for the fact that our member organization recognizes the young people and wants to get them more involved.

What was your biggest motivation to join the member organization in the first place?

Victoria: HAE is kind of our family affair. I grew up looking at my loved ones' struggles, and I just knew I wanted to help. I want to use my voice and experience to help others and raise awareness.

Nanna: Indeed, HAE is a family affair. I am an HAE patient, and I share my superpower with my dad, uncle,

grandmother, and cousin. It was scary growing up with HAE and missing out on being a "normal" kid, and now when I look back at all those tough moments, I can see that I am a strong person today because of them. My biggest motivation to join the member organization was to finally find other people outside my family who have the same experiences and learn how to be more in control.

I love how you look at HAE as a superpower that you share with your family. Can you tell me more about the things you are working with as part of HAE Scandinavia?

Nanna: Victoria and I have the goal to find more young people in the Scandinavian countries and involve them in our member organization. We have been working with our social media account and helping the rest of the Board plan our HAE Scandinavia meeting in November 2021.

Victoria: We are thrilled to finally be able to meet face-to-face with our community. But most of all, we are looking forward to meeting other young people living with HAE in any form – patients, siblings, caregivers, partners.

Nanna: Another thing we are very happy about was the online activities we had for the hae day :-) 10th anniversary this year. We were organizing online workouts with the global community and with the HAE Scandinavia community, and it was a lot of fun.

Victoria: Yes, it was very empowering to see our ideas come to life and how we can create awareness together.

Great job, ladies! I see that you are not wasting any time, and you have ideas flowing all around. What do you hope to achieve, and what are your hopes for the future?

Victoria: I like new challenges, and I found this great opportunity to get more knowledge about how an organization like HAE Scandinavia works. How they help people, work with doctors, plan and execute events. I also love helping other people! I am a people's person, and my main goal is to create a space for young patients and caregivers where they can share everything, they have in mind about living with HAE freely. My hopes for the future are that we get to a point globally where HAE patients will have access to medication, and young people will grow up knowing more about HAE and not feel defined by it!

Nanna: I want to help create a space for young people in Scandinavia, where they feel safe to share their thoughts and experiences. HAE can be lonely sometimes; I have felt it, even though I am lucky to have the support of my family. I hope other young people won't have to feel lonely anymore. I hope that we can, at some point, see HAE as a positive thing, something that does not control you because you are in control instead. I really hope that we have more young patients and caregivers join our meetings, and together we can work towards advocating for a better quality of life.

Wow! It makes me very happy to see young people like you two becoming strong advocates. I look forward to seeing what you come up with when you put your minds together. A final message to the youngsters around the world?

Nanna: Guys, get in touch with your national member organization. Get involved, learn new skills, be creative – that is how change happens!

Victoria: Use your voices, be fearless, and know you are not alone! There is a global HAE family you are born into. Reach out to your member organization; you never know the impact you can make until you try!

Nanna Maria Boysen and Victoria Schultz-Boysen both just recently joined the board of their national member organization, HAE Scandinavia.

Five back-to-school tips for the new school year

Getting back to school year routine is always a challenge after enjoying the summer months. However, for many, this fall will be the first time back in school for full days, five days a week, since March 2020.

In-person school is therefore likely to be a distant memory. On top of that, COVID-19 related concerns must be dealt with as we return to in-class learning.

Here are five tips when going back to school.

Please note!
HAEi is not providing medical advice. This article has the sole purpose of sharing tips on going back to school. If you have any concerns about your HAE or other medical questions, please contact your physician.

Stay safe, everyone!

Tip #1: Set Expectations

Set realistic expectations for yourself. Avoid stressing over the things you cannot control and be open to your family and friends if you have questions or worries.

Tip #2: Set Standards

While remote learning had its drawbacks, there are benefits that will most likely be missed – such as rolling out of bed two minutes before virtual school started, as that was a convenient and comfortable way to begin the day. Many will also miss the comfort of their home when they start feeling an HAE attack coming up or lying down once the medication is taken. Try to revisit the emergency plan you and your family had before and see if it fits your country's current situation. We need to remind ourselves that there is currently a new normal and that we can work with what we have.

Tip #3: Get a Solid Morning Routine

If possible, aim to get a more structured and formal morning routine a couple of weeks before the school season begins. You might want to start waking up earlier and going through your to-dos before heading out the door.

This also applies if you're still doing remote education. Try finding a new space for yourself in your home or dorm. Changing small things in your surroundings can give you a whole new motivation and focus. And try to wake up earlier than two minutes before the learning begins.

Make sure you pace yourself and avoid stressing out as much as you can. As you know, stress is one of the most common triggers for HAE, so the more you can control your routines, the less space you leave for stress.

Tip #4: Create an Evening To-Do List

The best way to make your morning blissful and stress-free is to take care of any time-consuming activities the night before. If you are a visual person, write down your evening to-do list and place it somewhere you can easily follow it through:

- Preparing your lunch for the next day is always a great idea and a very healthy option. Pack your lunch with all the greens, proteins, and fibers! And yes, some sweets are always a good idea.
- Pack your bag – books, pens, notepads, and medication! If you have access to HAE medication and can self-administer, make sure you have it with you and store it correctly (remember to check with your physician on how to do it correctly). Don't worry if you don't have access to HAE medication or know how to self-administer your medication. Make sure you know your symptoms and always have your emergency plan close by. And remember the HAEi Emergency Card (https://haei.org/resources/emergency-cards/) containing clear and simple information about HAE and the treatment required in case of an attack.
- Plan your outfit for the day and lay it out somewhere. If you are wearing a school uniform, make sure it is all ironed and tidy for the next day. A fresh look is always a good look.
- Setting the alarm clock (and no more than one snooze in the morning).

Tip #5: Schedule in Plenty of Family Time

During this past year, many families had the opportunity to spend much more time together than before. Suddenly, having the option to spend hours away from home every weekday may cause some anxiety for both you and your family. So, make sure to plan a movie night occasionally or spend a few minutes talking about your day with the family. If you have experienced any HAE symptoms, or you are simply worried about HAE, share those worries and thoughts with your family. Make a plan to cope with those worries together.

Whether you are thrilled to go back to school or anxious about the many changes ahead, know you can do this. HAEi is here to let you know you are not alone in this new adventure.

PATIENT STORY

Michelle V. Cornonado, Panama:

MOST OF ALL I WANT FELLOW PATIENTS IN PANAMA TO HAVE A GOOD QUALITY OF LIFE

I remember that my first manifestation of HAE was on a Saturday in 2008 when I was 16. I woke up that morning with a swollen hand. I attributed it to a night of bad sleep or that an insect bit me. I remember that it did not hurt or itch. I think the next day it disappeared. Months later, I woke up again with a swollen hand, and after a few days, a knee, or a foot with edema. And so, it kept happening, but it was very sporadic and happened only once or twice a year.

Did your HAE continue getting more severe?

Yes, when I was in college from 2010 to 2014, I remember that I frequently had abdominal edema. I was always in the emergency room with abdominal pain, vomiting that did not stop and sometimes diarrhea. It became more and more painful. I remember how my abdomen became inflamed. Vomiting decreased when they put me on some intravenous medicine, and the intestinal discomfort went away in a couple of days. It really is an unbearable pain that does not let you move because you feel that everything inside you is going to break.

In those years, the edemas in the joints were already stronger; they took more days to disappear, and each day they were more uncomfortable. However, as time went by, I got used to the fact that a hand or foot, knees, elbows would swell up from time to time.

MICHELLE'S STORY IN BRIEF

- Born 1991 in Panama Province, Panama – still living in Panama Province.
- Studied Early Stimulation and Family Orientation at Universidad Especializada de Las Americas in Panama; currently doing a master's degree.
- Nursery teacher at Instituto Panameño de Habilitación Especial.
- HAE symptoms registered at 16. Diagnosed at 25.
- Other HAE patients in her family: None.

How did you find out what it was?

Well, for the next many years, I didn't. Whenever an edema appeared, I went to the general practitioners, and they told me that I was allergic to something. I even wrote down everything I ate for a couple of months to see if, in that way, I could detect the allergen that caused the edemas. They did some tests of allergies, and everything was normal. At some point, they did tests because they suspected that I could have lupus or some immune disease, but everything was negative; there was no response to the edema.

On one occasion, I hit my mouth with a bottle, and I had a strong edema on the lips. I was taking anti-inflammatories, and I noticed that it was not decreasing. The same happened when I swelled up elsewhere. They provided me with allergy medications, but it didn't go down. I was already noticing that these swellings disappeared in at least three days.

During that time, I always said that I suffered from cystitis, but after being diagnosed, I knew that it was bladder edema. This edema would normally happen to me when exposed to heat or when I had a lot of stress. Over time, I have found that stress is a very strong trigger. That is why I have tried to have a relaxed life so as not to stress over nonsense. I would say to myself: "I know I have a disease, I have something, but I don't know how to find out."

Years passed, and I couldn't find an answer. It was now eight years since the first crisis, and there I was still without an explanation.

In 2016, my interest in becoming a mother awakened, but suffering from polycystic ovarian syndrome was not going to be easy. Therefore, my gynecologist decided to give me contraceptives to regulate my periods. I used them for six months, and in those months, I noticed that the edema was more frequent – now two or three times a month. Then luckily, I decided to suspend them. Weeks later, I went to an allergist, and when he saw my photos of the edema, he suspected the disease. He told me it could be Hereditary Angioedema. After some weeks, we had the results, and so it was – I was diagnosed with HAE. I had never heard of this disease in my life, and in all these years, no doctor suspected that I had it.

Then you began to investigate.

Yes, I read about the disease and became a member of support groups. In that way, I informed myself and learned more about the condition. The doctor who diagnosed me did not know much about it, and the only thing he told me was that there was no treatment available in our country. Only an androgen had been used, but it was no longer in Panama. Those days full of questions because I did not know what to do, nor what was next, nor what was going to happen to me.

Five months after the diagnosis, my dream "I am pregnant" came true. During the first months, I realized that angioedema and pregnancy are not compatible, or at least not in my case, because hormones trigger attacks. I had many attacks during the first months, even in places where I had never had them – face, throat, lips. Being pregnant and having abdominal edemas was very depressing.

The difference during pregnancy was that the edema disappeared in hours, not days. In the following months during the pregnancy, I almost did not have edema, but later again, I had a lot of edemas when breastfeeding. The most exasperating moment was when I had tonsil edema while pregnant but thank God the edema did not progress.

What would you say was the breakthrough for you?

It was in 2018 when I met Dr. Olga Barrera, an expert in HAE in our country. She diagnosed me with the type of angioedema that I suffer, which is type 1. Thanks to her, I have learned much more about the disease. Now I know how to handle it and how to control myself. Living with this disease is not easy and even less so if you don't have the right medication. We still do not have HAE medications in Panama, but I know that soon with God's favor, we will have injectable drugs.

Only those of us living with HAE know how disabling, disfiguring, and difficult it is. Even our closest relatives sometimes don't understand. When a crisis comes, it is always accompanied by sadness, even depression. To be fine at one moment and then suddenly, out of nowhere, everything is not fine. This disease does not respect date, time, or place.

I just want the scientific community to continue researching the disease, learn more, and continue developing more drugs so that we all have a better quality of life.

Speaking of children: How would you describe your childhood and adolescence as a patient with HAE? Did your condition keep you from doing the things your friends did or doing a sport or other favorite activities?

That part of my life was completely normal, like any other girl my age, because I never had an HAE crisis. It was after the age of 16, when my adolescence was coming to an end, that I had the first attacks. During attacks, it felt uncomfortable to write or walk, but I've never been a sports fan that part of it didn't affect me.

Later, I studied Early Stimulation and Family Orientation at Universidad Especializada de Las Americas in Panama City, and I am currently doing a master's degree. I work at Instituto Panameño de Habilitación Especial as a nursery teacher with two-year-old children. The institution is dedicated to empowering people with special needs. People with different disabilities also work there, from which I have also received support and understanding.

When I was in university, everything was normal since my seizures were more frequent after 25. As for work, it has affected my performance, sometimes if I have an abdominal crisis or an easy crisis, I will not go to work, and if a situation starts at work, I try to relax and rest a little.

Would you say that the people around you have understood your condition: close relatives, other family members, friends from school, other friends?

When you have HAE, only you can understand what happens and the people who have it. Pain is often unbearable, and only you understand that pain. When a crisis comes, depression is immediate, which will always be difficult for others to understand.

I have always received 100% support from my family, my husband, and my sister. Much more since I was a mother because many times, I cannot even move when I have an abdominal crisis, and they are my support. There has always been understanding from my co-workers and my boss when I can't do an activity or don't go to work.

So far, I am the only one in my family to have HAE.

Are you involved with the awareness and education work of HAE Panama?

Yes, I am the secretary of the Panamanian Association of patients with Hereditary Angioedema. Together with Dr. Olga Barrera, our guardian angel, I raise awareness so that more people know about the disease.

I was recently present at a conference given on HAE and pregnancy, held by a specialist doctor, HAEA Puerto Rico and the HAEi Regional Patient Advocate, Javier Santana. I found it very interesting and important because they talked about experiences that I had while pregnant. Also, they provided other important information that I did not know, just as I learned about all the currently available treatments and how they are used.

What is your main when it comes to HAE treatment in Panama?

I most of all want to obtain the appropriate medications to have a good quality of life and more people to know about the disease.

Free, secure and easy to use
app.haetrackr.org

Track your HAE with HAEi's new app!

Introducing HAE TrackR

- ✔ An easy-to-use electronic diary to track your HAE.
- ✔ Developed by patients for patients and is product and company neutral.
- ✔ Enables inputting, storing, and sharing data about your HAE with your physician.
- ✔ Fully EU-GDPR compliant, protecting your data and privacy – all data is the sole property of yourself.
- ✔ Endorsed by the ACARE network (Angioedema Centers of Reference and Excellence)
- ✔ Can be accessed from a computer, tablet, or smartphone.

Start using HAE TrackR today: **app.haetrackr.org**

NEWS FROM MEMBER ORGANIZATIONS AROUND THE GLOBE

ARGENTINA

The number of ACARE centers in Argentina has doubled as two more centers have been added to the HAEi world map. The new centers are Centro Médico Vitae in Buenos Aires and Instituto de Asma, Alergia y Enfermedades Respiratorias in Corrientes. For contact information, please see the map of Argentina at https://haei.org/hae-member-countries/argentina.

HAEi has just added 10 HAE knowledgeable hospitals in Argentina to the world map. The hospitals are: Hospital General de Agudos Dr. Carlos G. Durand, Hospital de Niños Dr Ricardo Gutiérrez and Hospital de Pediatría Prof. Dr. Juan P. Garrahan (all in Buenos Aires), Hospital Universitario Austral in Pilar, Hospital Publico Materno Infantil de Salta in Ciudad de Salta, Hospital Aeronáutico de Córdoba, Hospital Privado Universitario de Cordoba, Hospital San Juan de Dios in La Plata, Hospital de la Madre y el Niño in La Rioja and Hospital Interzonal General de Agudos "Dr. Oscar E. Alende" in Mar del Plata. For contact information please see the map of Argentina at https://haei.org/hae-member-countries/argentina.

AUSTRIA

There are now two ACARE centers in Austria: The Department of Dermatology at the Medical University of Vienna and the Kepler Universitätsklinikum/ Universitätsklinik für Dermatologie und Venerologie in Linz. Please see contact information at https://haei.org/hae-member-countries/austria.

UNITED STATES

From Ianice Viel, Digital & Social Media Manager, US HAEA:

2021 US HAEA Virtual Summit Series: In light of the COVID-19 restrictions, the HAEA reimagined and designed an innovative alternative to the in-person Summits we had held every other year over the past two decades.

The 2021 US HAEA Virtual Summit featured four live events that took place in May, June, July, and August, as well as pre-recorded videos of important HAE topics. All live events were recorded and are available for viewing along with the pre-recorded videos throughout September. Over 1,200 friends from across the United States connected with each other to learn more about all things HAE-related through our innovative Virtual Summit Platform.

The Virtual Summit Series kicked off on **hae day :-)** 2021, with US HAEA President, Anthony J. Castaldo, discussing the remarkable improvements in the HAEA community's quality of life and the importance of ongoing advocacy to protect access to HAE medicines.

This first Series event also showcased a variety of on-demand sessions that included a conversation with renowned psychologist Dr. Jennifer Hartstein, who discussed how to cope during a pandemic and manage stress and anxiety, all while having an HAE diagnosis. Also, legislative experts shared ways in which the HAEA community can inform policymakers about the importance of charitable financial assistance and advocate on behalf of patient protection policies. The

first Virtual Series event concluded with a virtual launch party and the exclusive reading of the third book in the US HAEA Children's Book Series, "Nico's Story".

The second Series event featured an "Ask the Experts, Physician Q&A" with members of the HAEA Medical Advisory Board. The HAE expert physicians answered our community's most pressing questions. In addition, Dr. Sandra Christiansen, Dr. Aleena Banerji, and Dr. Tukisa Smith provided insight and answered questions regarding the unique circumstances faced by women and HAE.

The HAEA Medical Advisory board also came together for a panel discussion on the new 2020 Medical Advisory Board Guidelines for the Management of HAE and emphasized the importance of the patient voice in determining an optimal treatment approach. In a separate session, Medical Advisory Board members discussed the latest scientific information regarding diagnosing and treating people with HAE Normal C1-Inhibitor.

Also, expert physicians from the US HAEA Angioedema Center addressed pressing questions regarding how HAE is affected by COVID-19 and communicated results from the HAE and COVID-19 survey conducted by the US HAEA Angioedema Center at UCSD.

The third Series event showcased HAE expert physicians Dr. Marc Riedl and Dr. Raffi Tachdjian discussing the latest in HAE therapies and what the community can expect soon. This third session ended with an informative Q&A session.

On-demand sessions for this third event included a conversation with speaker Robyn Bent, RN, MS, from the FDA, discussing the Agency's process for reviewing and approving a new medication. Also, HAEA's Youth Leadership council provided insight on how the youth HAE community can advocate for and spread HAE awareness.

Finally,the last live event of the Summit series presented a vitally important topic -- emerging challenges with insurance reimbursement for HAE Medicines. This live event featured representatives from major health insurers who provided the payers' perspective on how people with HAE and their doctors can successfully address delays and denials.

On-demand sessions included a conversation with US HAEA Health Advocates as they discussed the services and support provided by the US HAEA. In addition, HAEi members provided a global perspective on challenges faced gaining access to and reimbursement for HAE medications. Finally, the cast of "Special Blood", the documentary film featuring children with HAE, joined together for a long-awaited reunion.

Throughout the rest of September, all the Virtual Summit Series Programs are available to view by visiting the HAEA Virtual Summit Portal. You don't want to miss out on viewing these highly informative sessions.

Advances in HAE Research: The US HAEA continues its robust research program and is embarking on timely and relevant projects that will focus on the unique needs of the HAE community, including:

- An HAEA/HAEi-initiated study, published on 1 March 2021 in a peer-reviewed medical journal that demonstrated the clear economic value and improvement in quality of life offered by HAE medicines. The data from this study revealed that the new preventive therapies yield 1) substantial economic value considering remarkable decreases in attack frequency and 2) statistically significant improvements in patient quality of life.
- A study submitted to a medical journal that included

1,600 participants and assesses how the COVID-19 virus affects individuals with HAE. The study is designed to 1) help determine if people with HAE are at greater risk of contracting COVID-19 or if infected by the virus, manifest symptoms different from those seen in the general population, and 2) provide data regarding the impact, if any, of HAE medicines on the susceptibility to, or course of, a COVID-19 infection. The ultimate goal of the study is to safeguard our community's well-being by understanding the interaction between HAE and the virus. The results of this study will help medical professionals develop the best treatment options and protocols for people with HAE who are afflicted with the virus.

Moving into 2022, the US HAEA plans to continue to actively pursue innovative and ground-breaking research. This includes:

- Launching an Epidemiological Study to establish the true prevalence of HAE in the US. The HAEA believes that past estimates underestimate the true incidence of HAE. We are applying a unique methodology to find people with HAE within the largest medical databases available anywhere in the world to determine the true prevalence of HAE in the US. We aim to publish the findings from this study in the Spring of 2022.
- A study on HAE in Aging, which will help to better understand the demographic and clinical characteristics, HAE treatment patterns, HAE impact and burden, and perceived health-related quality of life (HRQoL) of the aging HAE population. This study is being designed with a comparator population of people without HAE, and we plan to have these results published in a manuscript when complete in early 2022. This research project is uniquely important to the HAEA community, as current data on HAE in Aging does not exist.
- Finally, we are conducting a research study to validate a new Quality of Life tool for people with HAE. The aim of the study is to develop and validate a more broad-based HAE QoL instrument that more accurately depicts disease burden. Based on concepts derived from behavioral economics, this tool will be more sensitive than any that are currently being utilized. We believe that this cutting-edge project could revolutionize quality of life measurement of HAE and other chronic conditions.

US HAEA Healthcare Hero Recognition Program: Healthcare professionals who go out of their way to provide an extraordinary level of kind and compassionate care are helping to transform the health and well-being of individuals with HAE. These healthcare heroes deserve recognition for their consistent and positive impact on improving our quality of life.

The US HAEA has developed the HAEA Healthcare Hero Recognition Program to recognize and thank these healthcare professionals. This program allows members of the HAE community to acknowledge and thank the healthcare heroes who have provided them with exceptional care and made a lasting impact on their HAE diagnosis. These HAEA Healthcare Heroes will be recognized on our social media platforms, as well as receive a personalized award as a certificate of appreciation for their dedicated service to the HAE community.

So far, the US HAEA has recognized more than 15 healthcare professionals that go above and beyond to care for HAE community members and continues to accept submissions.

US HAEA Podcasts: The HAE Speaks Podcast features adults with HAE or their caregivers who speak about topics such as learning to come to terms with your

diagnosis, mastering travel with HAE, how HAE can affect pregnancy, and gaining a sense of purpose through advocating for HAE. There are sixteen informative episodes of the HAE Speaks podcast.

The #BeyondHAE Podcast presents stories from the youngest members of our community. Young people with HAE can face a series of unique challenges when it comes to their diagnosis, so the HAEA has created the #BeyondHAE podcast to unite the youth community through shared experiences. Topics featured in the #BeyondHAE podcast include understanding anxiety and how it relates to HAE, facing the fear of needles, speaking to classmates about HAE, and creating a strong support system. There are thirty-one illuminating episodes of the #BeyondHAE podcast.

These podcasts are available on Spotify, Apple Podcasts, and many other platforms.

US HAEA Youth Programs: "Nico's Story" is now available on the US HAEA Vimeo channel as a downloadable Audiobook. In the third book of the HAEA Children's Book Series, Nico cannot wait to get on the plane and head to Washington, D.C. He and his family will join other HAE advocates for Capitol Hill Day. Nico is excited to visit Congress and talk about what it's like to have HAE. Best of all, he will get to see his good friends, Jay and Kai. He has not seen them since the surprise visit to the lake house last summer. Will Nico make new friends at Capitol Hill Day? What will he discover when he explores the nation's capital?

If you are interested in ordering a copy of "Nico's Story" or any of the books in the HAEA Children's book series, you can listen to the audiobooks on the US HAEA Vimeo channel (ushaea).

Breaking news: The Brady Club is now available to kids from member organizations from all around the world. The Brady Club is an online safe space customized for children diagnosed with HAE and their siblings (ages 3-13). The club is designed to help the youngest HAE patients to better understand, manage, and cope with their disease while offering fun ways for them to feel inspired, empowered, and connected to other kids who share their diagnosis and stories #BeyondHAE. The US HAEA partners with HAE UK, HAE Australasia, HAE Canada, HAE Spain, HAE South Africa, HAE Poland, and several countries in South America to provide access to the Brady Club material.

The first ACARE center has been registered in the USA: The Department of Asthma and Immunology at Penn State University in Hershey, Pennsylvania. You will find contact information at https://haei.org/location/acare-center-hershey-pa-usa.

JORDAN

HAEi is happy to inform you that the first two HAE knowledgeable hospitals in Jordan have been added to the world map. They are the Dar Al-Salam Hospital and the Queen Rania Children's Hospital, both located in Amman. Please see contact information via the Jordan map at https://haei.org/hae-member-countries/jordan.

Also, there is now a HAEi hosted website for Jordan – please see https://haejordan.haei.org.

SWITZERLAND

From HAE Switzerland:

The Swiss HAE Association turned 20 years of age on 2 September 2021. An anniversary excursion with our members and our HAE network was planned. However, due to the spread of the coronavirus and the difficulties in assessing the situation, we had with a heavy heart to cancel this trip already back in March.

We have, after all, been able to celebrate the anniversary properly by surprising our HAE members and our HAE

network with an HAE anniversary biscuit tin. This HAE anniversary biscuit jar is a special limited edition printed with this picture especially for us. We asked our HAE members and our HAE network to review the last 20 years with us over coffee or tea and, of course, with the delicate biscuits.

The best thing that could ever happen for the Swiss HAE patients was that on 2 September 2001, the HAE Switzerland was founded by Paula and André Hunkeler, Pia Wyss, Pascal Gisi, and Helene Saam. Life with HAE has improved a lot for Swiss HAE patients over the past 20 years as they are now nationally and internationally networked through HAE Switzerland.

There are finally many HAE experts in Switzerland who are very familiar with the clinical picture of HAE. Ten HAE centers have been founded, and today, Swiss HAE patients have six different HAE drugs available that greatly improve life with HAE. Another HAE drug – that is Berotralstat (Orladeyo) – is awaiting approval for Switzerland from Swiss-Medic. This is very good news!

At this point, we would like to thank everyone who has contributed over the last 20 years to making life with HAE so much better for Swiss HAE patients. And now we wish that we can meet again soon and that we can finally exchange ideas again.

PAKISTAN

HAEi has added the first two HAE knowledge hospitals in Pakistan to the world map. They are the National Hospital in Faisalabad and Lady Reading Hospital in Peshawar. Have a look at the Pakistan map here for contact information: https://haei.org/hae-member-countries/pakistan.

MOROCCO

HAE Morocco now has a website hosted with HAE – please have a look at https://haemorocco.haei.org.

RUSSIA

From the HAE Russia Team:

In the summer of 2021, HAE Russia held several meetings with patients – both in-person and remotely. We assisted our members with legal issues and arranged consultations with physicians, psychologists, and lawyers while young patients with HAE attended another series of meetings under the "Call a Friend" project.

On 17 July 2021, HAE Russia hosted a webinar on issues regarding the process of receiving Lanadelumab, a long-term therapy. HAE patients enrolled in Takeda's Early Access to Lanadelumab charity program described their personal experience participating in the project. All speakers noted that receiving the new medicine changed their lives dramatically so they could work, study, and travel. The HAE Russia Chairman Elena Bezbozhnaya introduced the statistics of the use of the new medicine to the members of the organization. Almost 70 percent of HAE patients – participants of the early access program – experienced no attacks for 12 months, and for 93 percent the number of attacks decreased by 70 percent. The overall average incidence of edema was reduced by 87.4 percent. Illya Ushankov, the Legal Advisor of the Federal State Budgetary Institution "Dmitry Rogachev Scientific Research Center of the Russian Academy of Medical Sciences", Candidate of Law, Associate Professor of the Graduate School of Law at the Institute of Law and Public Administration under the President of the Russian Federation, focused on the procedure to receive Takhzyro.

On 24 and 25 July 2021, HAE Russia carried out another series of meetings for juvenile patients with HAE within the "Call a Friend" project. Online meetings gathered children and adolescents from different regions of Russia. The series started with a career guidance meeting for teenagers over 14 years old. Along with the leader – the head of the Moscow regional branch of HAE Russia, psychologist and HAE patient Yulia Faikova – the children examined their abilities, determined the

prospects of various areas of study, and chose spheres of activity of their interest and safety to work in the future. Two Art-meetings were held for children with HAE of middle and younger age groups: 5 to 8 years old and 9 to 12 years old. The facilitator encouraged the children to share their emotions. The fragments of the favorite cartoon about Winnie-the-Pooh and his friends provided a perfect visual illustration for this discussion.

On 24 July 2021, Ulyanovsk hosted a full-time session of the "Future of HAE Therapy" Patient School. The event brought together HAE patients from Ulyanovsk and the Ulyanovsk region, Penza, and the Chuvash Republic. The school facilitated a forum to discuss the prospects of therapy and prevention of HAE, along with efficient modes of interaction between patients, the medical community, and health care authorities. Tatiana Latysheva, Head of the Immunopathology and Intensive Care Department of the Clinic of the Federal State Budgetary Institution "Institute of Immunology" of the Federal Medical and Biological Agency of Russia, allergologist-immunologist, honored doctor of Russia, professor of the Department of Clinical Allergology and Immunology of Moscow State Medical University, presented methods of basic therapy existing today in Russia and abroad. She also described promising and traditionally used treatment and prevention schemes for HAE. Dr. Alexander Cherdantsev, Chief Freelance Allergist-Immunologist of the Ulyanovsk Region, addressed vaccination issues while lawyer Ilya Ushankov delivered a presentation on legal support for patients diagnosed with HAE.

On 29 July 2021, HAE Russia offered a webinar on "Effective Health Care. Icatibant Generics." Lawyer Ilya Ushankov presented "Medicine Safety. Patient Reporting of Side Effects". He reported on how a patient should act in case a generic turned out to be ineffective and advised to report any complications to his physician and the Roszdravnadzor service. In the final section of the online meeting, participants could ask questions to Elena Bezbozhnaya.

On 14 August 2021, we held an online meeting, "The Future of HAE Therapy", within the HAE Patient School. The webinar involved members of HAE Russia from Moscow, Kamchatka, the Far East, Siberia, and other regions of Russia. The discussion covered issues of drug supply for patients with HAE, advanced therapy, and prevention of the disease. The meeting proceeded as an interactive workshop. The participants could ask questions to the speakers, represented by Elena Bezbozhnaya, Professor Tatiana Latysheva, and lawyer Ilya Ushankov. The patients discussed the therapy methods used in different regions of Russia and shared their concerns regarding preferential drug provision. During the meeting, the participants touched on premedication before surgeries and examinations, when visiting the dentist, and giving birth. Many questions concerned the diagnosis, building the interaction with the attending physicians, basic and emergency therapy, and vaccination safety. The speakers provided patients with detailed answers to all these questions.

BRAZIL

The ninth ACARE Center in Brazil has been added to the HAEi world map. The addition is the Clínica Médica at the Faculdade de Ciências Médicas in Campinas. Please visit this page for contact information: https://haei.org/location/acare-center-campinas-brazil.

DENMARK, NORWAY, AND SWEDEN

HAE Scandinavia will be hosting the fourth Scandinavian conference 12-14 November 2021 in Copenhagen, Denmark, this time with the theme "The Power of Prophylaxis". HAE Scandinavia is celebrating its 20th anniversary this year, and there will therefore be a few surprises for all participants at the conference.

Three more Norwegian hospitals have been added to the HAEi world map. They are Haugesund Sykehus in Haugesund, Sykehuset i Vestfold in Tønsberg, and Haukeland Universitetssykehus in Bergen – please see contact information via the Norwegian map at https://haei.org/hae-membercountries/norway.

POLAND

From HAE Poland:

We can proudly announce that the first preventative therapy has been approved and reimbursed in Poland. This is a great and unprecedented achievement of the entire Polish HAE community, a patient organization, and expert physicians, who, together with Takeda, for over 18 months have undertaken various activities to raise awareness of the need to reimburse long-term prophylaxis. Eventually, the Minister of Health approved access to and reimbursement for lanadelumab (Takhzyro) for a group of approximately 50 patients. The approval will be valid until 1 September 2023, and we hope it will be extended thereafter. The HAE community also managed to extend reimbursement indications for icatibant (Firazyr) for the pediatric population. This means that patients under the age of 18 from now on would be able to treat their attacks with this therapeutic option. HAE Poland continues to work intensively to guarantee patients access to another treatment option, recombinant C1-INH (Ruconest).

There are now five ACARE Centers in Poland. The most recent addition to the list is the Department of Internal Diseases at the University Hospital in Opole and the Department of Immunology and Allergy and Department of Psychodermatology at the Central Teaching Hospital under the Medical University of Lodz. For contact information, please see https://haei.org/hae-member-countries/poland.

EGYPT

From Co-Patient Lead Mohamed Osman, HAE Egypt:

HAE Egypt has recently launched a proactive initiative, "We're Stronger Together", to strengthen communication with the HAE patients in Egypt and enhance the service level agreement provided to them. We would like to thank our HAE experts Professor Elham Hossny, Dr. Walaa Shoman and HAEi, for their continuous support to HAE Egypt and HAE patients. For more information about the "We're Stronger Together" initiative, kindly contact us through our Facebook page at www.facebook.com/HAE-Egypt-374132739770843.

CANADA

From President Jacquie Badiou and COO Daphne Dumbrille, HAE Cananda:

Over the summer, we received the news that our abstract titled "Hereditary angioedema in Canada: Changes in medication use and untreated attacks between the 2017 and 2020 surveys" was accepted to the Canadian Society of Allergy and Clinical Immunology (CSACI)'s Annual 2021 Scientific Virtual Meeting. The abstract drew from data collected from HAE Canada's National Report Card surveys, and we are thrilled to share this information at the annual meeting in October 2021. A huge thank you goes to Dr. Suzanne Kelly at Red Maple Trials, who always produces top quality abstracts on behalf of HAE Canada. We are grateful that HAE specialists across Canada have contributed their expertise to the abstract. Thanks also to our Advocacy Committee, who reviewed the abstract. We have a great team in Canada to help us submit quality abstracts, and we appreciate the assistance we receive.

HAE Canada understands the importance of staying connected with volunteers who selflessly offer their support when needed. While in British Columbia, Jacquie was fortunate to connect with volunteers Karen Wakita, an Emergency Department nurse, Jacob Collins, the Canadian representative on HAEi's Youth Advisory Group, and the Pacific Regional Director, Lorraine Coumont. Together they discussed future HAE Canada goals and projects over a lovely lunch.

Lorraine Coumont, Karen Wakita, Jacob Collins, and Jacquie Badiou

Jacob enjoys being involved with HAEi's Youth Advisory Group, and we are very proud to report that Jacob helped facilitate the HAEi Youngsters Online Meet Up "Back to School" on 11 September 2021. During the Meet Up, the group discussed how to have a successful and safe return to school after experiencing extreme disruptions due to COVID-19. We are sure it was an interesting and helpful discussion for young HAE patients across the globe. We encourage all young Canadian HAE patients

to join HAEi Youngsters; they are an enthusiastic group of well-informed young people who always welcome new members to their group.

Our Board will be busy this fall connecting with our membership to share HAE Canada projects. Our Regional Directors and volunteers will encourage further participation in our 2020 National Report Card Survey and let people know about the HAE Canada Café, an online members-only forum launched this fall. Also, we will be asking members with HAE normal C1 their interest in genome sequencing, which we hope will ultimately lead to better diagnosis and access to effective, accessible treatments.

At the end of August, we learned that Orladeyo (berotralstat) was accepted for review by Health Canada. Orladeyo is an oral treatment used daily to prevent HAE attacks in patients 12 years old and older. HAE Canada is thrilled to receive this news as it is the first step towards Canadian patients gaining access to this new treatment.

After over a year in the making, the Canadian Angioedema Scholarship Program (CASP) Foundation has launched thanks to the hard work and dedication of the CASP Board of Directors. The CASP Foundation was established to fund research to help find a cure for HAE and related angioedema in Canada and will begin initiating partnerships for potential research projects.

GERMANY

The seventh ACARE center in Germany has been added to the HAEi world map. It is the Department of Dermatology at the University of Erlangen. You will find contact information at https://haei.org/location/acare-center-erlangen-germany.

AUSTRALIA & NEW ZEALAND

From CEO Fiona Wardman, HAE Australasia:

HAE Australasia is excited that the Pharmaceuticals Benefit Advisory Committee in Australia has recommended lanadelumab be listed on the pharmaceuticals benefits scheme (PBS), making this treatment available to patients in Australia. We look forward to this treatment being officially listed towards the end of the year.

HAE Australasia is involved in some significant and exciting projects. One of these is the rolling out of the pharmaco and socioeconomic survey previously run in the UK, the USA, and the Nordic countries. The survey questions have been adapted to suit the health system and settings within New Zealand and Australia. Once ethics approval has been received, we look forward to as many patients and family members taking part as possible.

HAE Australasia has been organizing patient and carers conferences for Australia and New Zealand. We have been fortunate to be able to utilize the HAEi Event Zoo platform for these meetings. Event Zoo has been a great way to keep our conferences organized and updated. Unfortunately, due to the outbreak of COVID-19, both the Australian and New Zealand patient and carers conferences have been postponed. We plan to hold the Australian meeting in November and the New Zealand conference in February 2022.

We are also excited that the virtual angioedema center project is taking shape. Our center doctors and nurses are now in the testing phase, and we hope to roll out this fantastic initiative very soon. More information to come!

Our patients have been notified of the HAEi TrackR app, and many are making good use of this handy and easy to use tool.

HAE Australasia welcomes Kate to our team as the administrative assistant to the CEO and CFO. Kate is a welcome addition to our active patient group.

HAE Australasia's is ten years old! We are so proud that our organization has been around for such a significant amount of time and achieving so many substantial milestones improving the lives of people living with HAE in Australia and New Zealand.

SERBIA

The first two Serbian HAE knowledgeable hospitals have been added to the HAEi world map. They are the General Hospital Subotica and Užice General Hospital. For contact information please see the map of Serbia at https://haei.org/hae-member-countries/serbia.

TUNISIA

The first two HAE knowledgeable hospitals in Tunisia – both in Ariane – have been added to the HAEi world map. They are the Abderrahmane Mami Hospital and Ariana Hospital. For contact information please see https://haei.org/hae-member-countries/tunisia.

TURKEY

The fourth ACARE center has been added to the HAEi world map, this time the Dermatology Department and the Pediatric Allergy Unit at Koç University Hospital in Istanbul. Please see contact information at https://haei.org/location/acare-center-istanbul-turkey-2.

PERU

There are now nine HAE knowledgeable hospitals and two ACARE centers in Peru. The most recent additions of hospitals to the HAEi world map are the Hospital III Yanahuara and the Hospital II de Mollendo, both located in Arequipa. For contact information please see the Peru map at https://haei.org/hae-member-countries/peru.

SOUTH KOREA

Until now South Korea has had three HAE knowledgeable hospital but recently HAEi added the Seoul National University Bundang Hospital (Seoul National University) in Seongnam, Seoul to the organization's world map. Please see contact information at https://haei.org/location/hospital-seongnam-seoul-south-korea.

UNITED KINGDOM

From CEO Laura Szutowicz, HAE UK:

Over the summer, the UK has seen some changes as the COVID-19 vaccine rollout gathered pace and the weather improved. Children have gone back to school after the holidays, and many members are taking up the reins of life before the pandemic.

HAE UK is also seeing some changes in our Trustee Board this autumn:

Ed Price, who took over as Chair of Trustees when his father, John Price, stepped down in 2017, has himself now resigned. Ed is a very senior civil servant in the UK and has steered HAE UK to grow and improve our service to patients and families affected by HAE. Ed spearheaded the development of exciting initiatives such as the Expert Nurse Training Course, improvement of the website and general comms, expansion of the Medical Advisory Panel, the Young Advocates (including the wonderful Percy the Pufferfish), the merchandise shop, and several exciting Patient Days including the last one in 2020. Owing to COVID-19, this had to be virtual but is an amazing resource available on our website. Ed is a talented violinist and plays in a London orchestra, and we do hope he will occasionally come to Patient Days and catch up with us all.

We are delighted that Ann Harding, despite her demanding career as Road Services Director of Quattro Plant Ltd, is to step up as Chairman of Trustees. Ann has been involved with HAE UK since the start in 2010 when Ann Price initiated the organization. Until that time, she had spent much of her time repeatedly fighting in a battle for diagnosis and treatment for her child, Sian, now 30. This is a resume of what made Ann so driven to work for HAE UK. Sian says:

"My mum noticed that from birth, I was always ill. My stomach was swelling; I was vomiting and in excruciating pain; totally dehydrated. She would rush me to A&E, and it became the norm for me to be there twice a week. The doctors didn't know what was wrong with me. They thought it was appendicitis, maybe some form of cancer. They kept pointing to blanks. It felt like someone was stabbing me in the stomach; like somebody was grabbing and twisting my insides. It was unpredictable and would happen anywhere; foot, arm, four times the size. Then one day, I was lying in the children's ward on a drip and getting pumped full of steroids, and a Chinese doctor was on call. He came to see me and said he had seen this same illness in another country he had worked in. By fluke, he just said, 'Test her for this', and they found out what was wrong."

Ann continues:

"You have no idea what it's like seeing your child so ill. It breaks your heart; it just isn't fair. Sian was very sick, and I felt in a helpless situation. We were going A&E a lot, at any time… Christmas, birthdays. She would be vomiting and swelling, and they'd put it down to a stomach bug or allergy. It's so hard to diagnose. At one point, they thought it was appendicitis, and when they took her down for the operation, they found nothing wrong with her appendix. I knew something was wrong, and I was not going to take no for an answer. I was relieved when she was diagnosed, but there was no help, and still a long way to go. The first step was to get hospitals to recognize HAE, as many hadn't heard of it. Sian was given open access to a children's ward, which meant the nurses and doctors knew her and knew what was wrong with her, and we could visit without having to explain the history to an A&E doctor or nurse repeatedly. But even so, she's had a lot of operations. I would wait until she was in surgery before I cried; I never wanted her to see me upset. Great Ormond Street was fantastic. The doctors and nurses were amazing, but sometimes I didn't know whether she'd survive. I didn't think she would ever have a job. I just tried to keep being positive about it and keep moving ahead. My mum helped me. If Sian was in hospital, I'd stay with her, but I was a single mum juggling a job to pay the bills. I did have a tough time. Sian has a sister, Keighly, four years older, who doesn't have HAE. Keighly was a ballroom and Latin dancer; she was amazing and came second in the UK. But I was managing family, work, house, travelling, bills, and my children all the time. I just kept facing battle after battle, and I felt like I had nowhere to turn."

Sian was finding life even harder as she went through adolescence:

"It came to a point where my veins collapsed from being used too often when I was 12 or 13, so they put Hickman line into my neck, a line that comes out the side you can feed drugs into. After a while, the Hickman line got infected, so I was back in hospital to have another Hickman line operation, then a third one got really badly infected, and I was in the hospital for three months. Eventually, they took it out, but by this time, I was 18. There was a lot of back and forth because I was now an adult and had to go to an adult hospital."

After the Hickman Line was removed, the veins had a chance to recover, so Ann pushed for Sian to become the first person in the UK to be trained to self-medicate. Sian explains:

"It changed my life! I never thought I'd be able to do it myself, but now I inject myself every three days. Since I was 18, I have been doing it in my veins. I mix a powder and liquid in a glass vile and then put it into a syringe. I put a butterfly needle into the vein over 20 minutes. I have my one good vein that never lets me down. I've done it in an airplane, I've done it in a car, you name it. My medication is delivered to my home, and they send me what I need, prescribed by the hospital."

HAE UK is very fortunate to have such an energetic and driven Chair of Trustees. Ann's final comments:

"It's not a question of whether I want to do it; I'm doing it because I need to. I want to help people not have to suffer. They need help to live a normal life. I'm a fighter, and I don't take no for an answer. You tell me what's more important than a sick kid."

The last word must go to Ann's boss, John Murphy, Quattro MD:

"Ann Harding has every possible quality needed to make this Chairmanship a success. She is tenacious, passionate, and driven; a warrior both as a mother and a Quattro employee. Her vital yet unenvied and difficult thirty years' experience combined with a dogged determination will lead her through any challenge. The Quattro Group congratulates her, and I'm extremely proud to support her leadership of HAE in any way I can. Never has a person been more right for a job."

HAE UK is sorry to say goodbye to two Trustees who have generously given their time over the past years: Sam Oxley, herself with HAE and mother of our karate black belt trainer Youth Ambassador, Alex. Sam has many family commitments, and we are sorry to see her go but thank her very much for all her help and support over the years. Thank you also to Tom Pickering, who came in as a Trustee in order to provide us with legal advice as he was a solicitor specializing in charity work. He has married, had a baby, and changed jobs since then. He is very busy but has been of great help to us since he came on the Board.

We are very excited to welcome June Cole onto the Board of Trustees. Many of you will be aware of June, who is a keen singer and, as part of the Rock Choir, has been involved in a chart-topping record. She also organized a flash mob with the Rock Choir in a busy shopping centre to raise funds and awareness for HAE UK. June is a passionate educator and advocate and is our key person for presenting about HAE in Emergency units.

MEDICAL PAPERS

Here are summaries of some of the recently published HAE related scientific papers:

Clinical manifestations of HAE and a systematic review of treatment options – *by Mattie Rosi-Schumacher, The State University of New York, USA, et al.:*

Progressively distal involvement of the upper airway, especially the larynx, has been shown to pose an increased risk of asphyxiation and death in the acute presentation of HAE. Evaluation by an otolaryngologist is often sought during the emergent clinical management of HAE. Thus, it is prudent that the consulting physician is well-versed in the prompt recognition, triage of patients, and appropriate treatment modalities.

eCollection, June 2021

Consensus on treatment goals in hereditary angioedema: A global Delphi initiative – by Marcus Maurer, Charité - *Universitätsmedizin Berlin, Germany, et al.:*

The burdens of disease and treatment should be considered when assessing disease control and normalization of patients' lives. The ultimate goal for HAE treatment is to achieve no angioedema attacks. The availability of improved treatments and disease management over the last decade now makes complete control of HAE a realistic possibility for most patients.

J Allergy Clin Immunol, May 2021

COVID-19 vaccination and the risk of swellings in patients with HAE – *by Lauré M. Fijen, University of Amsterdam, the Netherlands, et al.:*

Disruption of the vascular endothelium has been recognized as a crucial factor in angioedema formation, and triggers for these attacks include febrile illness, medical procedures, pain, fatigue, psychological stress, and physical trauma. Short-term prophylaxis with C1-INH concentrate has shown to effectively prevent HAE attacks following invasive medical procedures, but current guidelines do not particularly mention

prophylaxis before intramuscular injections. Between December 2020 and March 2021, the European Medicines Agency approved four COVID-19 vaccines directed against the SARS-CoV-2 spike glycoprotein: two nucleoside-modified RNA vaccines, a recombinant chimpanzee adenoviral vector, and a recombinant adenovirus type 26 vector. To date, it is unknown whether short-term prophylaxis before COVID-19 vaccination should be considered, since these vaccines may cause side effects including fatigue, fever, and pain even more frequently than other vaccines. Furthermore, the new mRNA vaccines may additionally increase the risk of angioedema attacks because RNA is a potent activator of the contact system. We performed a prospective cohort study to assess the angioedema attack rate following COVID-19 vaccination in HAE patients.

A total of 93 out of 96 eligible patients consented to participate. A total of 48 patients received a mRNA vaccine and 15 patients a vector vaccine. Eleven angioedema attacks were reported following the administration of 111 COVID-19 vaccines. Nine of these attacks occurred following the first vaccine, all were of mild or moderate severity, and most were treated with on demand medication. There were no laryngeal attacks or hospital admissions. A total of 48 patients had received a second COVID-19 vaccination, two of whom developed an angioedema attack. Of the total of 11 attacks, six arose more than 48 hours after vaccination. Of 63 vaccinated patients, four had used short-term prophylaxis, and three of these used C1-INH concentrate and were attack-free. The last patient had an angioedema attack despite deciding to use danazol for short-term prophylaxis.

90% of our HAE population did not experience an attack, even though the majority did not use short-term prophylaxis. Almost all attacks occurred following mRNA vaccine administrations, but it is notable that these vaccines accounted for most administered vaccines. Two patients noticed erythema marginatum after vaccination, which they successfully treated with C1-INH concentrate before further symptoms emerged.

We recognize that the generalizability of this study may be affected by the availability of the various vaccines and prophylactic therapies. Indeed, some of the reported HAE therapeutics (including danazol and tranexamic acid), are no longer recommended as first-line treatment options. However, the decision to use these treatments was based on patients' preference, earlier experiences, and the lack of non-intravenously administered prophylactics in the Netherlands. It is notable that the attack rate post vaccination was also low in patients without any prophylaxis. Furthermore, the non-randomized design of our study and the small sample sizes of some vaccine groups does neither allow reliable subgroup analyses on patient characteristics nor on vaccine types. Therefore, the signal that attacks only occurred after mRNA vaccination requires confirmation from larger cohorts.

Currently, the COVID-19 vaccine landscape is rapidly evolving and vaccines with new mechanisms of action have become available to increasing numbers of people globally. Our findings reassure that adult patients with HAE due to C1-INH deficiency can be safely vaccinated against COVID-19 without short-term prophylaxis, provided that effective on demand treatment is available.

JACI: In Practice, September 2021

Effect of COVID-19 on HAE activity and quality of life – *by Ozge Can Bostan, Marmara University Faculty of Medicine, Turkey, et al.:*

Although the sample size was small, analysis of the data supported that the symptoms of COVID-19 were not more severe in HAE. Also, there was no significant difference in the AE-QoL Questionnaire scores, the frequency, and severity of angioedema attacks during the course of COVID-19 in the patients with HAE.

Allergy Asthma Proc, September 2021

High Estrogen States in HAE: a Spectrum – *by Maansi Kulkarni, Wright State Physicians Health Center, USA, et al.:*

Over the past several decades, sex differences have been well documented within HAE. Women often experience more frequent and intense attacks compared to men. Elevated estrogen levels as seen in pregnancy and use of oral contraceptives is a widely known trigger for angioedema attacks. Women affected by estrogen-dependent HAE only experience attacks when under "high estrogen states" such as during pregnancy and when taking exogenous estrogens. This unique phenotype has been documented in individuals with an activating Factor XII mutation. Based on this clear genotype-phenotype relationship, we conclude that Factor XII may be key in our understanding of estrogens' role in HAE.

Clin Rev Allergy Immunol, June 2021

Letting the patients speak: an in-depth, qualitative research-based investigation of factors relevant to health-related quality of life in real-world patients with HAE using subcutaneous C1 inhibitor replacement therapy – *by John Anderson, Clinical Research Center of Alabama, USA, et al.:*

From patient interviews, a large number of common themes and concepts emerged: a greater sense of freedom and normalcy, increased productivity, and improved interpersonal relationships while using convenient and effective prophylaxis.

Allergy Asthma Clin Immunol, June 2021

Mitigating Disparity in Health-care Resources Between Countries for Management of HAE – *by Ankur Kumar Jindal, Postgraduate Institute of Medical Education and Research, India, et al.:*

HAE patients in low-income countries do not have access to life-saving acute drugs or recently developed highly effective prophylactic medications. Most such countries do not have specialized HAE services or diagnostic facilities, resulting in consequent long delays in diagnosis. There is an urgent need to improve HAE services, diagnostics and treatments currently available to lower-income countries. We recommend that all HAE stakeholders support the need for global equity and access to these essential measures.

Clin Rev Allergy Immunol, June 2021

National Audit of a Hereditary and Acquired Angioedema Cohort in New Zealand – *by Karen Lindsay, Auckland City Hospital, Australia, et al.:*

In 2019, the total number of known adult (48) and children (3) HAE and Acquired Angioedema (3) patients was 54. Icatibant, available since 2016, is now used in 73% of HAE patients. Androgens are used in 50% of the patients as prophylaxis. Tranexamic acid is used as prophylaxis in one fifth of patients.

Intern Med J, August 2021

Obstetric Anesthetic Management for Parturients with HAE: A Case Report and Suggested Protocol – *by Kathryn J Clark, Departments of Anesthesiology and Perioperative Medicine, USA, et al.:*

Pregnancy has been shown to have a variable effect on triggering HAE episodes. First-line treatment includes C1 esterase inhibitor concentrate, which can also be used for prophylaxis in high-risk patients. Neuraxial analgesia is recommended to avoid general anesthesia. Vaginal delivery was well tolerated without need for emergent treatment for angioedema symptoms.

Pain Med, August 2021

Patient perspectives on the treatment burden of injectable medication for HAE – *by Cristine Radojicic, Duke University School of Medicine, USA, et al.:*

An US online survey to better understand patients' experiences with prophylactic medications and the associated treatment burdens suggest that most patients are satisfied with their therapies but desire novel medications with a simpler route of administration, Also, although most patients experience significant treatment-related burdens, they learn to cope with these challenges over time.

Allergy Asthma Proc, May 2021

Physician and patient perspectives on the management of HAE: a survey on treatment burden and needs – *by Marc A Riedl, University of California, San Diego, USA, et al.:*

We conducted surveys of HAE patients and physicians who treat HAE patients to identify prescribing trends for prophylactic treatments and the impact such treatments have on patients. Newer, subcutaneous therapies are prescribed for HAE prophylaxis more frequently than other therapies in the US and treatment burdens still exist for HAE patients. Physicians and patients were not always aligned on how treatment choices affect patients' lives, which may mean that there are opportunities for enhanced patient-physician dialog and shared decision-making in HAE management in the US.

Allergy Asthma Proc, May 2021

Racial and Ethnic Disparities in the Research and Care of HAE Patients in the United States *– by Sebastian Sylvestre, Penn State University, USA, et al.:*

Clinical trials for FDA-approved HAE medications underrepresent minority patients. HAE remains underdiagnosed in Hispanic patients. Other than lower prevalence of anxiety disorders among Black patients relative to White patients, the mental health impact of HAE is equally distributed across the different racial/ethnic groups.

J Allergy Clin Immunol Pract, August 2021

Unnecessary Abdominal Surgeries in Attacks of HAE with Normal C1 Inhibitor – *by Marcel Gutierrez, Centro Universitario Saude ABC, Brazil, et al.:*

Many HAE patients with coagulation factor XII mutation were misdiagnosed with acute abdomen and subjected to unnecessary invasive procedures. It is critical to disseminate information about this rare mutation in patients with otherwise normal C1-INH activity, to speed up diagnosis and avoid misconduct.

Clin Rev Allergy Immunol, August 2021

Variability of disease activity in patients with HAE type 1/2: longitudinal data from the Icatibant Outcome Survey – *by Marcus Maurer, Charité - Universitätsmedizin Berlin, Germany, et al.:*

Icatibant Outcome Survey data collected between 2009 and 2019 shows that at the population level, attack frequency was generally consistent over seven years. At the small group level, 28.8-34.5% of patients reported a change in attack frequency of ≥5 attacks from Year 1 to 2; up to half of these patients continued to experience this magnitude of variation in disease activity in later years, reflecting high intra-patient variability.

J Eur Acad Dermatol Venereol, September 2021

CLINICAL TRIALS

According to clinicaltrials.gov under the U.S. National Institutes of Health, the EU Clinical Trials Register, and the International Clinical Trials Registry Platform under World Health Organization (WHO) the following trials should be recruiting at this moment:

Assessment of the State of Health, Quality of Life and Expectations of Patients with HAE

– recruiting in France

Biomarker for HAE Disease

– recruiting in Armenia, Georgia, India, Peru, Poland, Romania, and Turkey

C1 Inhibitor Registry in the Treatment of HAE Attacks

– recruiting in Bulgaria, Croatia, Czech Republic, France, Germany, Hungary, Italy, North Macedonia, Norway, Poland, Slovakia, Slovenia, and Sweden

CLOUD-R HAE REGISTRY

– recruiting in France

CSL312 (Garadacimab) in the Prevention of HAE Attacks

– recruiting in Canada, Germany, Hungary, Israel, Japan, the Netherlands, and the United States

Dose-ranging Study of Oral PHA-022121 for Acute Treatment of Angioedema Attacks in Patients with HAE

– recruiting in Bulgaria, Canada, Czech Republic, France, Germany, Hungary, Israel, Italy, the Netherlands, Poland, Spain, and the United Kingdom

Efficacy and Safety of Lanadelumab (SHP643) in Japanese Participants with HAE

– recruiting in Japan

Epidemiological Analysis for HAE Disease

– recruiting in Germany, Italy, Japan, Poland, Turkey, and the United Kingdom

Expanded Access Program with Lanadelumab for Japanese People With HAE

– recruiting in Japan

FIRAZYR General Drug Use-Results Survey (Japan)

– recruiting in Japan

Firazyr Patient Registry (Icatibant Outcome Survey - IOS)

– recruiting in Australia, Austria, Brazil, Czech Republic, Denmark, France, Germany, Greece, Ireland, Israel, Italy, Spain, Sweden, and the United Kingdom

Global Registry to Gather Data on Natural History of Patients with HAE Type I and II

– recruiting in Italy

HAE Kininogen Assay

– recruiting in Germany

Long-term Safety and Efficacy of CSL312 (Garadacimab) in the Prophylactic Treatment of HAE Attacks

– recruiting in Australia, Canada, Germany, Israel, New Zealand, and the United States

Patient Registry to Evaluate the Real-world Safety of Ruconest

– recruiting in the United States

Quantifying the burden of disease and perceived health state in patients with HAE in Japan: Patient-Reported Outcomes study

– recruiting in Japan

Stopping androgen treatment in patients with HAE - characterization of reasons and protocols and development of advice for patients and physicians

– recruiting in France, Germany, and Hungary

Study to Evaluate the Real-world Effectiveness of Lanadelumab in Participants with HAE

– recruiting in Canada, Puerto Rico, and the United States

Study to Evaluate the Real-World Long-Term Effectiveness of Lanadelumab in Participants with HAE

– recruiting in Austria, Germany, Israel, Switzerland, and the United Kingdom

The Role of the Coagulation Pathways in Recurrent Angioedema

– recruiting in France

Furthermore, these clinical trials are expected to be recruiting soon:

A clinical study to assess the safety of Lanadelumab to prevent episodes of severe swelling in children

A Study in Teenagers and Adults with HAE Type I or Type II Who Use Lanadelumab as Long-Term Prophylaxis

A Study of Lanadelumab in Teenagers and Adults with HAE in Argentina

A Study of the Burden of Illness and Treatment Patterns in Teenagers and Adults With HAE

A study to investigate CSL312 in subjects with HAE

Efficacy and Safety of GNR-038 vs Berinert in Patients With HAE

Human pasteurized C1 esterase inhibitor concentrate (CE1145) in subjects with congenital C1-INH deficiency and acute abdominal or facial HAE attacks – C1-INH HAE study

Long Term Safety Study of BCX7353 in HAE

Open-label Berotralstat Access to HAE Patients Previously Enrolled in Berotralstat Studies

Pharmacokinetics and Safety of Human Pasteurised C1-Inhibitor Concentrate (Berinert/CE1145) in Subjects with Congenital C1-INH Deficiency

Read more about these and other clinical trials at:

- clinicaltrials.gov
- clinicaltrialsregister.eu
- apps.who.int/trialsearch

NEWS FROM THE INDUSTRY

1 July 2021

Orchard Therapeutics and **Pharming Group N.V.** enters a strategic collaboration to research, develop, manufacture, and commercialize OTL-105, a newly disclosed investigational ex vivo autologous hematopoietic stem cell (HSC) gene therapy for the treatment of HAE.

OTL-105 is an investigational HSC gene therapy designed to increase C1 esterase inhibitor (C1-INH) in HAE patient serum to prevent HAE attacks. OTL-105 inserts one or more functional copies of the SERPING1 gene into patients own HSCs ex vivo, which are then transplanted back into the patient for potential durable C1-INH production. In pre-clinical studies, to date, OTL-105 demonstrated high levels of SERPING1 gene expression via lentiviral-mediated transduction in multiple cell lines and primary human CD34+ HSCs. Furthermore, the program achieved production of functional C1-INH protein, as measured by a clinically validated assay.

Under the terms of the collaboration, Pharming has been granted worldwide rights to OTL-105 and will be responsible for clinical development, regulatory filings, and commercialization of the investigational gene therapy, including associated costs. Orchard will lead the completion of IND-enabling activities and oversee the manufacturing of OTL-105 during pre-clinical and clinical development, which will be funded by Pharming. In addition, both companies will explore the application of non-toxic conditioning regimen for use with OTL-105 administration.

"Given the combination of our expertise in HSC gene therapy with Pharming's long-standing legacy and experience, we have the potential to reinvent the treatment paradigm for HAE by providing people living with this life-threatening disorder a sustained therapy with a single administration," says Bobby Gaspar, M.D., PhD, CEO of Orchard Therapeutics: "This collaboration demonstrates the promise of the HSC gene therapy platform and how it can be applied to new therapeutic areas with larger patient populations. We believe the HSC gene therapy pipeline we are building could continue to be a source of future partnerships in areas where biology supports our approach."

"Pharming has been committed to the HAE community for more than two decades," says Sijmen de Vries M.D., MBA, CEO of Pharming: "We have partnered with Orchard Therapeutics, a leader in the development of autologous HSC gene therapy, to develop a potentially curative treatment for HAE. Based on Pharming's experience in HAE, we believe that HSC gene therapy has the potential for the highest probability of success. This confidence is based on the durability of effect and safety observed in approved treatments from Orchard's HSC gene therapy portfolio and positive clinical data in several other programs. This a significant first step in developing a potentially transformative one-time treatment for HAE."

"Great progress has been made in HAE treatment over the last 15 years. However, HAE remains a severe, debilitating disease with an ongoing burden of angioedema attacks or chronic medication use," says Dr. Marc Riedl, Professor of Medicine and Clinical Director of the U.S. Hereditary Angioedema Association Center at the University of California, San Diego: "This promising work toward treatment with the potential for durable long-term clinical benefit is encouraging and signifies an ongoing commitment to the HAE community. I look forward to these efforts to identify and carefully advance a potential cure for HAE."

(Source: Pharming)

11 July 2021

At the EAACI Hybrid Congress 2021, **BioCryst Pharmaceuticals, Inc**. announced that HAE patients who were randomized to receive 150 mg of oral, once-daily Orladeyo (berotralstat) at the start of the APeX-2 trial had an 80 percent average reduction in their mean attack rate per month during weeks 25-96 of the trial, compared to baseline. Median attack rates also decreased from 2.7 attacks/month at baseline to 0.0 attacks per month in 16 of 17 months through the same period.

Orladeyo was generally well-tolerated during the treatment period, with fewer drug-related adverse events reported in part 3 (weeks 49-96) as compared to part 1 (weeks 0-24) and part 2 (weeks 25-48). Eighty-one percent of the patients who entered part 3 completed the trial.

"The long-term data we now see from two years of therapy in the clinical program reinforces the substantial, sustained reduction in HAE attacks patients experienced with Orladeyo. These results are consistent with the experience many patients are having in the real world since we launched Orladeyo, which is a key driver for the strong patient demand we are seeing as patients switch from injectable prophylactic agents and injectable acute-only therapies to oral, once-daily Orladeyo for control of their HAE attacks," says Dr. William Sheridan, Chief Medical Officer of BioCryst.

Additional Presentations of New Orladeyo Data at EAACI:

On-demand medication use was reduced in HAE patients treated with Orladeyo (150 mg) in APeX-2: In HAE patients taking oral, once-daily Orladeyo 150 mg who had a ⩾50 percent reduction in their rate of investigator-confirmed attacks relative to their baseline attack rate, there was a 78 percent reduction in the use of on-demand medication (doses/month) from baseline to week 24, leading to 2.1 fewer doses of on-demand medication per month. In patients who had a ⩾70 percent reduction in their rate of investigator-confirmed attacks relative to their baseline attack rate, there was an 85 percent reduction in the use of on-demand medication (doses/month) from baseline to week 24, leading to 2.2 fewer doses of on-demand medication per month.

Orladeyo demonstrated consistently low attack rates in adolescent patients in APeX-S: In an analysis of adolescent patients (ages 12-17) treated with oral, once-daily Orladeyo 150 mg in the open-label safety study, APeX-S, the mean (SEM) attack rate at week 4 was 0.4 attacks/month, which was generally sustained through week 48. Median attack rates in these adolescents were 0.0 attacks/month throughout the 48 weeks of treatment.

Greater than 70 percent of patients were attack-free in weeks 4 to 48. Orladeyo was generally well-tolerated in APeX-S.

Orladeyo demonstrated consistently low HAE attack rates during COVID-19: Stress is a documented trigger for HAE attacks, and recently published physician and patient survey data shows an increase in patient-reported HAE attack rates due to an increase in stress related to the COVID-19 pandemic (pre-COVID 19: 1.5 attacks/3-months vs during COVID 19: 4.4 attacks/3-months). In an analysis of HAE patients taking oral, once-daily Orladeyo 150 mg in the APeX-S trial, monthly HAE attack rates, pre-COVID 19 and during COVID 19 remained consistently low, <1 attack/month, for patients treated with Orladeyo. Patients receiving Orladeyo maintained low attack rates during this time of high societal stress and disruption.

(Source: BioCryst)

11 July 2021

At the EAACI Hybrid Congress 2021, **Takeda Pharmaceutical Company Limited** presented results from two final analyses from the Phase 3 HELP (Hereditary Angioedema Long-term Prophylaxis) Study Open-label Extension (OLE), which evaluated the long-term safety (primary endpoint) and efficacy of Takhzyro (lanadelumab) 300 mg every two weeks for up to 2.5 years. In the first analysis, the mean (min, max) reduction in the attack rate compared to baseline observed in the study population (N=212) was of 87.4 percent (-100; 852.8), and the median reduction was 97.7 percent, and patients received treatment for a mean (standard deviation) duration of 29.6 (8.2) months. At steady state – day 70 to the end of the treatment period – attack rates were further reduced to a mean of 92.4 percent and a median reduction of 98.2 percent. An additional analysis further suggests Takhzyro was a well-tolerated treatment that prevented HAE attacks over an extended planned 132-week treatment period across specific HAE patient demographic and disease characteristic subgroups.

"HAE is a lifelong condition, and research shows that concerns about another attack can limit the way patients lead their lives," says Prof. Markus Magerl, M.D., Department of Dermatology, Venereology and Allergology, Charité – Universitätsmedizin in Berlin, Germany. "The efficacy of Takhzyro to prevent HAE attacks over the long term will be an important consideration for patients and physicians as they

develop a treatment plan for patients that is focused on reducing the number of HAE attacks."

The original Phase 3 HELP Study was conducted in 125 patients aged 12 years and older over 26 weeks, making it the largest randomized, controlled prevention study in HAE, with the longest active treatment duration, to date. The HELP Study OLE was designed to evaluate the long-term safety (primary endpoint) and efficacy of Takhzyro for up to 2.5 years. The complete results were based on data collected between May 2016 and October 2019 and included 109 rollover patients who were originally evaluated in the HELP Study and 103 eligible non-rollover patients who did not participate in the initial study but had experienced at least one HAE attack within the previous 12 weeks.

Other Takeda presentation at the 2021 EAACI Hybrid Congress:

Attack-free status during steady state of lanadelumab treatment in patients with HAE: findings from the HELP open-label extension study: Results from the HELP Study OLE found that Takhzyro sustained efficacy in the prevention of HAE attacks by reducing attack rates in a treatment period of up to 132 weeks. Takhzyro, which has a half-life of approximately 14 days, is expected to reach a steady state at approximately 70 days. The HELP Study OLE analysis of attack-free status during the steady state period showed that the efficacy of Takhzyro 300 mg administered subcutaneously every two weeks in rollover patients was consistent with the original findings from the HELP Study.

The mean (min, max) reduction in the attack rate compared to baseline observed in the study population (N=212) was of 87.4 percent (-100; 852.8), and the median reduction was 97.7 percent (98.0 percent rollovers, 96.9 percent non-rollovers). At steady state, attack rates were further reduced to a mean of 92.4 percent (-100, 0.44) comprised of 92.7 percent rollovers (-100, -40.9) and 91.9 percent non-rollovers (-100, 0.44) and a median reduction of 98.2 percent (98.4 percent rollovers, 97.3 percent non-rollovers). During the first six months of treatment after day 70 during the steady-state period, 58.6 percent of patients (n=119) were attack-free, 54.7 percent rollovers and 62.9 percent non-rollovers. The maximum duration of the attack-free period after day 70 ⩾ 6 months was 83.7 percent, and ⩾ 12 months was 70 percent. The means of the average and maximum duration of the attack-free period during steady state were 14.8 and 18.6 months, respectively, with 70.0 percent of patients (n=142) having a maximum duration of attack-free period greater than 12 months.

Long-term prevention of attacks with lanadelumab across subgroups of patients with HAE: final results from the HELP open-label extension study: In a further HELP Study OLE analysis, treatment with Takhzyro 300 mg every two weeks was well-tolerated and effectively reduced attack rates over an extended treatment period across different patient demographic and disease characteristics, including patient age, gender, race, HAE type, body mass index, history of long-term prophylaxis use, and baseline attack rate.

The safety profile of Takhzyro was comparable across all evaluated subgroups, with treatment-related TEAEs occurring in 54.7 percent of patients (n=116) and the most common being injection-site pain.

"For more than a decade, we've listened to the HAE community to further understand the need for long-term, preventive targeted therapies and have committed our resources to develop treatment options," says Neil Inhaber, M.D., Vice President, Global Medical Head, HAE and Transplant at Takeda. "These analyses further assert the important role Takhzyro can play in the lives of people who live with HAE."

(Source: Takeda)

12 July 2021

At the EAACI Hybrid Congress 2021, **KalVista Pharmaceuticals, Inc.** presented its oral drug candidates. Data presentations included a late-breaking poster for the Phase 2 data for KVD900, KalVista's lead drug program for oral on-demand treatment of HAE attacks, two posters on the prevalence and clinical management of normal C1-INH HAE in the US, and two posters on the Company's earlier stage research assets.

"HAE patients continue to seek an oral option for on-demand treatment of their disease, to fully manage their disease or for breakthrough attacks for those on prophylaxis," says Dr. Emel Aygören-Pürsün, Principal Investigator for the KVD900 Phase 2 Clinical Trial and Head of the HAE Center at the University Hospital

Frankfurt. "As KVD900 halted attack progression and resolved attacks more quickly in patients with HAE while demonstrating a good safety and tolerability profile, it could be a valued choice for physicians and patients in managing HAE."

The late-breaking poster, titled ***A single on-demand treatment with orally administered KVD900 significantly slows progression and accelerates resolution of attacks in patients with HAE: results of a phase 2, placebo-controlled, double-blind cross-over trial***, contains the comprehensive data set from the Company's Phase 2 clinical trial of KVD900 in HAE patients. The presented data supports the topline results reported in February 2021.

- Early use of KVD900 halted attack progression.
- Use of KVD900 significantly shortened the time to improvement of attack symptoms.
- KVD900 accelerated attack resolution.
- KVD900 was generally safe and well-tolerated in the study.

KalVista presented four other posters at EAACI related to the HAE clinical landscape and unmet needs, as well as preclinical data from other oral molecules.

Prevalence of HAE with normal C1-inhibitor (nC1-HAE) in the United States: results from a nationwide survey of HAE-treating physicians:

- While patients with nC1-HAE require similar care to those with C1INH-HAE (type I and II), the population prevalence of this condition is unknown.
- This study aimed to estimate the prevalence of nC1-HAE in the US based on physician-level prescription data and responses to an internet-based survey which yielded 113 survey responses.
- Respondents were required to have seen at least 5 HAE patients in the prior 12 months and treated at least one nC1-HAE patient in that timeframe.
- The estimated prevalence for nC1-HAE was 0.44 per 100,000, accounting for up to 16.4%-22.7% of the total HAE population.
- Patients with nC1-HAE may represent a more sizeable population of patients with HAE in the US than previously suspected.

Current management of HAE with normal C1-inhibitor (nC1-HAE) in the United States: results from a nationwide survey of HAE-treating physicians:

- Robust study data are lacking on the management of patients with nC1-HAE.
- The study included a 10-minute online survey of specialist practices managing HAE who commonly evaluate and treat patients with HAE and nC1-HAE.
- Patients are currently managed and treated with medications studied in patients with HAE types I and II, with icatibant being the most commonly used treatment for acute attacks and lanadelumab most preferred for prophylaxis.
- The highest-ranked unmet need in acute treatment and preventative care was for an oral, FDA-approved, nC1-HAE-specific treatment.

Oral plasma kallikrein inhibitor KV998052 improves arterial blood oxygenation in a murine model of acute respiratory distress syndrome (ARDS):

- Recent data from published sources support the association of kallikrein-kinin activation and bradykinin generation with SARS-CoV-2 induced acute respiratory distress syndrome (ARDS).
- Pretreatment of mice with orally administered KV998052 was associated with significantly improved blood oxygenation in mice with HCl induced ARDS compared with mice receiving vehicle.
- Pharmacological inhibition of plasma kallikrein (PKa) provides a therapeutic opportunity to improve arterial blood oxygenation in ARDS.

Selective oral Factor XIIa inhibitor KV998083 protects mice against captopril induced vascular leakage and cleavage of high molecular weight kininogen:

- In the study, FactorXII knockout mice were fully protected against captopril-induced leakage.
- KV998083 achieved protection of kininogen (HK) in plasma.
- These preclinical results suggest that Factor XIIa inhibition may prevent bradykinin-induced angioedema.

(Source: KalVista)

KalVista Pharmaceuticals

14 July 2021

In an operational update released together with the financial results for the fiscal year ended 30 April 2021, **KalVista Pharmaceuticals, Inc.** CEO Andrew Crockett says:

"This past fiscal year, we made great strides in providing data to support the development of the candidates in our oral HAE franchise. Now we are at an important inflection point as we work with regulatory agencies to both finalize the Phase 3 program for KVD900 and begin the Phase 2 clinical trial of KVD824. With our financing earlier this year, we are well-capitalized to focus on execution of these activities, and we look forward to providing additional details on the trials later this year as they begin."

Fiscal 2021 and Recent Business Highlights:

- Reported positive results for KVD900 in a Phase 2 clinical trial demonstrating statistically and clinically significant responses across primary and secondary endpoints as an oral on-demand treatment for HAE attacks. An end-of-Phase 2 meeting has been scheduled late in the third quarter of the calendar year 2021 with the Food and Drug Administration (FDA) to review the planned KVD900 Phase 3 program.
- Provided data on KVD824 as a twice-daily oral candidate for prophylactic treatment of HAE. Work to optimize the exposure profile of KVD824 yielded a formulation that maintained the plasma concentrations that KalVista believes are required to compete with approved injectable therapies while showing an encouraging safety and tolerability profile in up to 14 days of dosing.
- Announced a novel oral Factor XIIa inhibitor program as the next area of focus. KalVista's internal research team has discovered multiple series of oral Factor XIIa inhibitors, initially being advanced with the potential to provide the next generation of HAE therapeutics. Investigational New Drug (IND)-enabling studies for oral Factor XIIa inhibitor candidates are expected to commence in calendar year 2021.
- Submitted an IND for a Phase 2 clinical trial to evaluate KVD824 as a potential prophylactic treatment for the prevention of HAE attacks. The U.S. FDA notified the Company in a letter that it has placed a clinical hold on the proposed Phase 2 clinical trial of KVD824. The FDA letter requested further information and analysis related to certain preclinical studies of KVD824 submitted to support the planned Phase 2 trial, as well as refinements to the intended KVD824 Phase 2 study protocol. The Company intends to submit its response to the FDA during the third quarter of 2021. KalVista also continues to progress regulatory filings for other countries where it plans to initiate sites for the KVD824 Phase 2.

(Source: KalVista)

KalVista Pharmaceuticals

20 July 2021

Pharming Group N.V. has entered into an exclusive license agreement with **NewBridge Pharmaceuticals** for the distribution of Ruconest (conestat alfa) in the Middle East and North Africa.

NewBridge, headquartered in Dubai, United Arab Emirates, is a regional specialty company with a comprehensive pharmaceutical platform of services and expertise, established to bridge the access gap and partner with global pharma and biotech companies to in-license and commercialize U.S. Food and Drug Administration (FDA) or European Medicines Agency (EMA) approved innovative therapeutics that address unmet medical needs into the Middle East and North Africa.

Under the terms of the agreement, NewBridge will work closely with Pharming to provide access for Ruconest for the treatment of acute HAE in the Middle East and North Africa. NewBridge will be responsible for the named patient supply and, where applicable, marketing of Ruconest in the region.

Ruconest is a plasma-free recombinant human C1 esterase inhibitor (rhC1INH) protein replacement therapy approved to treat acute attacks of HAE in adults and children aged two years and over. Ruconest is approved by the FDA and EMA and commercialized in over 20 countries.

Sijmen de Vries, CEO of Pharming Group, comments: "Pharming is committed to supporting patients with HAE, along with their caregivers, as they live with this debilitating disease. We are therefore delighted to enter into this agreement with NewBridge to ensure access to Ruconest in new geographies. NewBridge's extensive experience in the Middle East and North Africa, along with their strategic focus on rare diseases,

make them an ideal partner for Pharming in the region. We look forward to continuing to expand the global reach of Ruconest, in line with our growth strategy, to serve HAE patients with unmet medical needs."

(Source: Pharming)

2 August 2021

At the presentation of the financial results for the second quarter ended 30 June 2021, **Pharvaris** co-founder and CEO Berndt Modig says:

"We made significant clinical advancements this quarter as we seek to offer novel treatments to HAE patients that are both convenient and efficacious. The data presented recently at two medical meetings continue to demonstrate the compelling PK/PD and safety profiles of PHA121, which is the active ingredient in PHVS416 and PHVS719. Regarding RAPIDe-1, our Phase 2 on-demand study of PHVS416, we are encouraged by positive feedback from clinical sites and look forward to expanding this study to provide the opportunity for US patients to participate. We also expect to initiate our prophylactic study this year and report topline data for both patient studies in 2022."

(Source: Pharvaris)

4 August 2021

From the **Ionis Pharmaceuticals, Inc.** financial results for the second quarter of 2021 and recent business achievements:

"Since our last quarterly update, we continued to execute on our strategic objectives to prepare for multiple commercial launches, expand our drug delivery capabilities and advance new products towards the market. Looking ahead, we expect data from multiple pipeline programs, including additional data supporting the potential for our IONIS-PKK-LRx program to change the standard of care for patients with HAE", says Brett P. Monia, PhD, CEO of Ionis. (Source: Ionis)

4 August 2021

CSL Behring receives U.S. Food and Drug Administration (FDA) approval for its supplemental request for co-packaging of a convenience administration kit along with its product Berinert, indicated for the treatment of acute abdominal, facial, or laryngeal attacks of HAE in adult and pediatric patients. Combination product packaging will improve the patient experience by providing ready-to-go, essential infusion supplies that are more efficiently packaged. This will also reduce the burden and responsibility on distributing specialty pharmacies in supplying separate administration materials.

"HAE affects my life daily; with the concerns and stress of not only maintaining my own health as a patient but also that of my child who also has HAE," says Machelle, a person living with HAE. "Regardless of being on a preventive therapy or not, being prepared to treat an HAE attack rapidly is of the utmost importance".

Berinert is the only C1 esterase inhibitor (C1-INH) approved to treat acute abdominal, facial, or laryngeal HAE attacks in adults and pediatric patients. In accordance with the World Allergy Organization Guidelines for the Management of HAE, it is recommended that all patients have sufficient medication for on-demand treatment of two attacks and carry on-demand medication at all times.

Combination product packaging will now include a 10 mL silicone-free syringe as well as an IV set and butterfly needle and is anticipated to be in-market within the third quarter of 2021.

(Source: CSL Behring)

6 August 2021

At the presentation of the **Pharming Group N.V.** preliminary (unaudited) financial report for the first six months of 2021, CEO Sijmen de Vries comments:

"Post period, we delivered on one of our strategic objectives to strengthen our longer-term HAE pipeline, through a collaboration with Orchard Therapeutics, to develop and commercialize the pre-clinical ex-vivo autologous hematopoietic stem cell therapy product

OTL-105, which has the potential to become a curative treatment for HAE. We remain focused on the positive progress against our three-pillar strategy of sales, R&D and acquisitive growth."

(Source: Pharming)

6 August 2021

"BioCryst is in an outstanding position, both near-term and long-term, with growing revenue from a strong Orladeyo launch in the U.S. and more approvals and launches of Orladeyo around the globe", says President and CEO Jon Stonehouse at **BioCryst Pharmaceuticals, Inc**.'s presentation of the financial results for the second quarter ended 30 June 2021.

Program Updates and Key Milestones for Orladeyo:

"The Orladeyo launch is off to an excellent start because HAE patients want a safe and effective oral medicine to control their attacks and reduce their burden of therapy, and switching to Orladeyo meets these needs for them," says Charlie Gayer, Chief Commercial Officer of BioCryst.

- Patient switches continue to drive the launch with 60 percent of patients who were new to Orladeyo in the second quarter switching from other prophylactic medicine to Orladeyo and the remainder from acute-only treatment.
- The number of physicians prescribing Orladeyo grew by approximately 50 percent in the second quarter.
- The majority (approximately 70 percent) of HAE patients in the U.S. now have access to Orladeyo through insurance policies.
- Through the launch thus far, patient retention on therapy remains consistent with the one-year patient retention rate observed in the APeX-2 clinical trial.
- On 10 July 2021, the company announced data presented at the European Academy of Allergy and Clinical Immunology Hybrid Congress 2021. HAE patients who were randomized to receive 150 mg of oral, once-daily Orladeyo at the start of the APeX-2 trial had an 80 percent average reduction in their mean attack rate per month during weeks 25-96 of the trial, compared to baseline. Median attack rates also decreased from 2.7 attacks/month at baseline to 0.0 attacks per month in 16 of 17 months through the same period. Orladeyo was generally well-tolerated during the treatment period, with fewer drug-related adverse events reported in part 3 (weeks 49-96) as compared to part 1 (weeks 0-24) and part 2 (weeks 25-48). Eighty-one percent of the patients who entered part 3 completed the trial.
- On 16 June 2021, the company announced that the Israeli Ministry of Health had accepted the regulatory submission of Orladeyo for the prevention of recurrent attacks in patients with HAE 12 years and older. In addition, BioCryst entered into a distribution and supply agreement granting Neopharm Ltd. the exclusive rights to commercialize Orladeyo in Israel.
- On 3 June 2021, the company announced the launch of Orladeyo in Germany.
- On 12 May 2021, BioCryst announced that the United Kingdom's Medicines and Healthcare products Regulatory Agency has granted marketing authorization for Orladeyo for the routine prevention of HAE attacks in HAE patients 12 years and older.
- On 30 April 2021, the company announced that the European Commission (EC) had approved Orladeyo for the prevention of recurrent HAE attacks in HAE patients 12 years and older. The EC approval of Orladeyo is applicable to all European Union member states plus Iceland, Norway, and Liechtenstein.
- On 14 April 2021, the company announced that the Japanese National Health Insurance System (NHI) approved the addition of Orladeyo to the NHI drug price list on 21 April 2021.

(Source: BioCryst)

9 August 2021

At the presentation of the financial results for the second quarter ended 30 June 2021, **Intellia Therapeutics, Inc.** President and CEO John Leonard, M.D., says:

"This quarter marked an exciting new chapter for Intellia. We presented the first clinical data in history supporting precision editing of a disease-causing gene within the body following a single, systemic dose of CRISPR/Cas9. These data open a new era of medicine – one that holds the potential of curing genetic disease. In addition, together with Blackstone and Cellex, we launched a new company combining our allogeneic cell engineering platform with a clinically validated switchable, universal CAR-T construct. This new venture confers numerous benefits to Intellia, extending the reach of our technology beyond our core internal focus

and giving us a meaningful stake in the company's success, even as we retain our rights across a diverse ex vivo landscape. This transaction also fortified our leading cell engineering capabilities by securing access to high-quality donor cells and dedicated manufacturing capacity to support the development of our wholly owned ex vivo programs.

We are well-positioned to build on this quarter's momentum as we close in on a number of upcoming milestones. We look forward to initiating Phase 1 trials this year for our candidate NTLA-2002 for HAE."

In June, Intellia announced that it had submitted its first Clinical Trial Application (CTA) to the New Zealand Medicines and Medical Devices Safety Authority for NTLA-2002 to initiate a first-in-human study. The company expects to enroll the first patient by year-end and is also submitting additional regulatory applications to enable enrollment in other countries. The first-in-human trial is expected to evaluate safety, tolerability, and activity in patients with HAE and will continue to leverage insights gained from the development of NTLA-2001.

(Source: Intellia)

10 August 2021

Catabasis Pharmaceuticals, Inc. reports financial results for the second quarter ended 30 June 2021 and provides a corporate update.

"We are focused on advancing the development of our lead program, QLS-215, as a differentiated and potentially the most patient-friendly treatment option for the chronic treatment of patients with HAE to prevent attacks," says Jill C. Milne, PhD, CEO of Catabasis: "We anticipate that our first clinical trial with QLS-215 could demonstrate clinical proof of concept of its differentiated profile and long antibody half-life. Initial results from this trial are anticipated by the end of 2022."

QLS-215 for the Treatment of HAE:

- The vision for the lead program, QLS-215, is to develop a monoclonal antibody inhibitor of plasma kallikrein for HAE with dosing once every three months or longer and sustained inhibitory blood levels. QLS-215 has the potential to be the most patient-friendly chronic treatment option, based on the data generated to date and the existing HAE treatment landscape.
- QLS-215 is a humanized monoclonal antibody targeting plasma kallikrein that has demonstrated potent inhibition of plasma kallikrein as well as a long plasma half-life in non-human primates.
- Recent discussions with physicians and patients confirm the need for effective treatments that reduce HAE attacks as well as reduce the burden of treatment.
- Catabasis expects to file an Investigational New Drug application for QLS-215 in mid-2022 and plans to initiate a Phase 1 clinical trial with initial results anticipated by year-end 2022. Catabasis expects that the results of this trial, if positive, could provide clinical proof of concept for the activity and plasma half-life improvements for QLS-215.

(Source: Catabasis)

11 August 2021

Takeda Pharmaceutical Company Limited announces the publication of the final results from the Phase 3 HELP (Hereditary Angioedema Long-term Prophylaxis) Study Open-label Extension (OLE) designed to evaluate the long-term safety (primary endpoint) and efficacy of Takhzyro (lanadelumab) 300mg every two weeks for up to 2.5 years. The study results show that preventative treatment with Takhzyro markedly reduced the frequency of HAE attacks in patients 12 years of age and older who received treatment for a mean duration of almost 2.5 years (29.6 months; 8.2 standard deviation). The data were published online this month in the journal Allergy.

Secondary endpoints of the study showed the mean (min; max) HAE attack rate observed in the study population (N=209) was reduced by 87.4 percent (-100; 852.8) overall versus baseline, and attacks requiring acute treatment (N=106) were reduced by 93.4 percent (-100; -52.8). Reductions were also shown (N=209) in the rate of moderate or severe attacks (84.3 percent). Patients treated with Takhzyro 300 mg every two

weeks reduced the HAE disease burden by being attack-free for a mean (SD) of 97.7 percent (6.0 percent) of days during treatment and the average duration of the attack-free period was 14.8 months. Nearly 7 out of 10 patients (68.9 percent) experienced an attack-free period of more than 12 months (n=209). Treatment-related treatment-emergent adverse events (TEAEs) were reported by 54.7 percent of patients (N=116), most commonly injection site reactions. There were no reports of serious treatment related TEAEs.

The validated Angioedema Quality of Life Questionnaire (AE-QoL) was among the patient-reported outcome tools used to evaluate patients' quality of life (QoL). Both rollovers and non-rollovers achieved the minimal clinically important difference for the AE-QoL total score: the mean (SD) change in total score from baseline was –10.2 (17.9) and –19.5 (21.3) for rollovers and non-rollovers, respectively. Most improvements in AE-QoL scores were observed during the early follow-up period (from day 0 to 56) before reaching a plateau, and scores were generally maintained during subsequent visits.

"Effective prevention backed by clinical evidence is critical for healthcare professionals who treat patients with HAE," says Aleena Banerji, M.D., Division of Rheumatology, Allergy and Immunology, Department of Medicine, Massachusetts General Hospital, Harvard Medical School, and principal investigator for the HELP Study. "The potential to be attack-free for periods of time can help to provide an additional sense of assurance for those living with this chronic and unpredictable disease."

The original Phase 3 HELP Study was conducted in 125 patients aged 12 years and older over 26 weeks, making it one of the largest randomized, controlled prevention studies in HAE, with the longest active treatment duration, to date. The HELP Study OLE was designed to evaluate the long-term safety (primary endpoint) and efficacy of TAKHZYRO for up to 2.5 years. The complete results were based on data collected between May 2016 and October 2019 and included 109 rollover patients who were originally evaluated in the HELP Study and 103 eligible non-rollover patients who did not participate in the initial study but had experienced at least one HAE attack in 12 weeks. The complete results from the HELP Study OLE showed that the safety profile of TAKHZYRO was consistent with the original findings from the HELP Study, with treatment-related treatment-emergent adverse events (TEAEs) occurring in 54.7 percent of patients (n=116) and the most common being injection-site pain, upper respiratory tract infection, or headache.

"This study supports the use of Takhzyro as a long-term preventative treatment option for those 12 years of age and older living with HAE who are seeking a preventative treatment option that is proven to reduce HAE attacks," says Neil Inhaber, M.D., Vice President, Global Medical Heald, HAE and Transplant at Takeda. "Takeda has more than ten years supporting people with this rare disease across the HAE portfolio, and we are committed to providing these patients with effective treatment options that may help them experience periods of time without attacks. Our legacy and dedication to HAE hopefully empower patients to confidently navigate their HAE journey."

(Source: Takeda)

23 August 2021

KalVista Pharmaceuticals, Inc. provides an update on clinical trial progress for KVD824 in development for oral prophylactic treatment of HAE.

"Over the past month, we have made substantial progress in commencing Komplete, our worldwide Phase 2 clinical trial of KVD824 as a potential oral prophylactic therapy for HAE," says Andrew Crockett, CEO of KalVista. "The regulatory submissions have been approved in Canada, Australia, and the UK, with patient enrollment expected to begin this quarter. We also submitted our clinical hold response to the FDA related to the US IND filing for KVD824 and will provide further updates once we have additional information."

Komplete is the Phase 2 clinical trial of KVD824 and is a randomized, double-blind, parallel-group design evaluating twice-daily dosing of 300 mg, 600 mg, and 900 mg KVD824 against placebo for 12 weeks. The trial will enroll 48 HAE patients randomized into four equal arms after they report experiencing a minimum of three attacks in an eight-week run-in period. The primary endpoint of the trial is the rate of investigator confirmed HAE attacks during the treatment period. Secondary endpoints include the proportion of

participants without investigator confirmed HAE attacks and the rate of investigator confirmed HAE attacks that require conventional treatment. Komplete will be conducted at more than 30 sites in 13 countries.

To date, a total of 121 subjects have been exposed to treatment with KVD824 as single doses up to 1280 mg and up to 14 days of twice-daily dosing of 600 mg and 900 mg. The formulation of KVD824 maintains the plasma concentrations that we believe are required to deliver efficacy consistent with approved injectable therapies. Twice-daily dosing of KVD824 up to 14 days has demonstrated an encouraging safety and tolerability profile.

(Source: KalVista)

25 August 2021

BioCryst Pharmaceuticals, Inc.'s new drug submission for Orladeyo (berotralstat) has been accepted for review by Health Canada for the prevention of recurrent attacks in patients with HAE 12 years and older. Swissmedic has also accepted BioCryst's marketing authorization application for Orladeyo for review.

"We are making significant progress with our goal to bring Orladeyo to HAE patients around the world," says Jon Stonehouse, President and CEO of BioCryst. "Currently, there are no targeted oral HAE therapies available in Canada or Switzerland for patients living with HAE. If approved, Orladeyo has the potential to be an important new treatment option for Canadian and Swiss HAE patients and physicians."

(Source: BioCryst)

8 September 2021

Catabasis Pharmaceuticals, Inc. announces a new company name, **Astria Therapeutics, Inc.** The name Astria originates from the Greek word for star, reflecting the Company's commitment to having patients serve as guiding stars. Astria's mission is to bring hope with life-changing therapies to patients and families.

"The name Astria embodies our commitment to put patients first in all that we do," says Jill C. Milne, Ph.D., CEO of Astria Therapeutics. "Following the acquisition of Quellis earlier this year, our company is focused on tackling the debilitating disease HAE, with the broader goal of addressing the unmet needs of patients with rare and niche allergic and immunological diseases. We are advancing STAR-0215 as a differentiated and potentially the most patient-friendly preventative treatment option with dosing once every three months or longer. We are proud to launch Astria Therapeutics and bring our team's combination of experience, passion, and compassion to our future vision and our commitment to patients and their families."

Astria's lead program, STAR-0215 (formerly QLS-215), was named to reflect the goal of having patients at the forefront of Astria's scientific development. STAR-0215 is currently in preclinical development for the treatment of HAE. Astria is developing STAR-0215 to be a long-acting monoclonal antibody inhibitor of plasma kallikrein, dosed once every three months or longer, with the goal of providing the most patient-friendly preventative treatment option for people living with HAE. The company expects to file an Investigational New Drug (IND) application for STAR-0215 in mid-2022 and plans to initiate a Phase 1 clinical trial with initial proof of concept results anticipated by year end 2022.

(Source: Catabasis/Astria)

9 September 2021

The Ministry of Health and Prevention in the United Arab Emirates has granted marketing authorization for oral, once-daily Orladeyo (berotralstat) for the prevention of recurrent attacks in patients with HAE 12 years and older. To support commercialization efforts in the United Arab Emirates, BioCryst Pharmaceuticals, Inc. has entered into a supply and distribution agreement with NewBridge Pharmaceuticals, which also covers the Gulf Cooperation Council and Iraq.

"As the first targeted oral, once-daily treatment, Orladeyo provides an important new treatment option for patients and physicians," said Henrik Balle Boysen, Executive Vice President and COO of HAEi. "While there is still more work to be done to raise awareness to support earlier diagnosis and treatment, the approval

of Orladeyo is an important advancement for HAE patients in the United Arab Emirates."

"With many prevalent rare diseases in the Middle East and North Africa region, I am personally inspired, and we at NewBridge are proud, to be part of this partnership with BioCryst for the United Arab Emirates and a number of other markets in the Gulf Cooperation Council. This partnership supports our mission by providing access to an important new therapy for HAE patients in a hope that we can help ease their suffering and support them to live better lives," says Joe Henein, President and CEO of NewBridge Pharma.

"NewBridge is the right partner for BioCryst as they share our vision to bring innovative medicines to patients living with rare diseases," says Charlie Gayer, CCO of BioCryst. "With experience across regulatory, medical and commercial, and strong local relationships with key stakeholders, NewBridge will help accelerate our efforts to bring Orladeyo to patients across the globe by providing a much-needed new option to HAE patients in the United Arab Emirates."

NewBridge Pharmaceuticals, headquartered in Dubai, the United Arab Emirates, is a regional specialty company with a comprehensive pharmaceutical platform of services and expertise, established to bridge the access gap and partner with global pharma and biotech companies to in-license and commercialize U.S. Food and Drug Administration or European Medicines Agency approved innovative therapeutics that address unmet medical needs into the Middle East and North Africa regions.

(Source: BioCryst)

9 September 2021

At the presentation of KalVista Pharmaceuticals, Inc.'s financial results for the first fiscal quarter ended 31 July 2021, CEO Andrew Crockett says:

"We have made excellent progress in the rollout of our Phase 2 Komplete clinical trial for KVD824. Site initiations are underway, and patients are being enrolled in the trial to evaluate KVD824 as a potential oral prophylactic treatment for HAE. We will be having an end-of-Phase 2 meeting with the FDA later this month regarding KVD900, our oral on-demand candidate for treatment of HAE attacks and are ready to initiate the Phase 3 study quickly afterwards. We look forward to advancing both of these compounds as we continue with our strategy of bringing a full spectrum of oral treatment options to HAE patients."

(Source: KalVista)

14 September 2021

Pharming Group N.V. announces the topline results from two randomized, open label, controlled, pilot clinical trials of patients hospitalized with COVID-19 treated with Ruconest (recombinant human C1 inhibitor) for the prevention of severe SARS-CoV-2 infection. The primary endpoint in both studies was disease severity on the 7-point WHO ordinal scale on Day 7.

In the US study, conducted under a Pharming IND, which had included 32 patients at the time of the interim analysis, patients treated with Ruconest plus standard of care had statistically significant lower WHO disease severity scores at Day 7 (mean 1.83, SD 0.65) as compared with those patients who received standard of care alone (mean 3.22, SD 1.86; p=0.0056). Data on secondary endpoints and biomarker evaluations were concordant with the primary endpoint findings.

In the investigator-led study, conducted in Switzerland, Brazil and Mexico and part of the National Research Program "COVID-19" (NRP 78) of the Swiss National Science Foundation (SNSF), which included 83 patients by the time of the interim analysis, no difference in the primary variable was observed between the treatment groups. However, there was a significant difference in disease severity at baseline, i.e., prior to treatment, between the groups. Specifically, patients in the Ruconest arm had statistically significant more severe disease than those patients in the standard of care arm (p=0.0324).

Although the two studies used a similar design and both enrolled patients who were being admitted to the hospital with severe pneumonia due to COVID-19 infection, different dosing regimens of Ruconest were used. In the Investigator-led study Ruconest was dosed in addition to the standard of care for three days, whereas in the US study it was four days. Also, there

were differences in the patient populations enrolled and in the standard of care regimens administered.

The primary endpoint in both studies was disease severity on the 7-point WHO ordinal scale on Day 7. This endpoint has been suggested by WHO for clinical trials in patients with COVID-19 as it measures illness severity over time.

The trials were conducted following a compassionate use program, which saw encouraging results in patients who were administered Ruconest following hospitalization with COVID-19-related severe pneumonia. The results were first announced in April 2020 and subsequently published in Frontiers in Immunology in August 2020.

Anurag Relan MD, Pharming's Chief Medical Officer comments: "These results indeed support our initial hypothesis on the need to control the hyperinflammatory process in patients with severe COVID-19 infection. It is unfortunate we cannot draw many conclusions from the investigator led study, due to the imbalance between the Ruconest-arm and the control group at the start of the trial. We, however, thank all of the principal investigators and their staff for conducting this important research in an extremely challenging environment. We will analyze the full results of these studies as we design future clinical trials with Ruconest for the treatment of COVID-19, as well as other serious conditions."

Ruconest was well tolerated and no drug-related serious adverse events were observed in either study.

Both studies have now concluded, and the results will be published in peer-review medical journals.

(Source: Pharming)

14 September 2021

The U.S. Food and Drug Administration (FDA) has lifted the clinical hold on **KalVista Pharmaceuticals, Inc.**'s Phase 2 clinical trial of KVD824 for oral prophylactic treatment of HAE.

"The execution of Komplete, our Phase 2 clinical trial for KVD824 as a potential oral prophylactic therapy for HAE, is expected to accelerate now that we can also proceed at our U.S. trial sites," says Andrew Crockett, CEO of KalVista: "Progress continues worldwide, with regulatory submissions complete in all of the countries where the trial will be conducted."

The previously announced clinical hold was removed after FDA review of KalVista's responses to the FDA request for further information and analysis related to certain preclinical studies of KVD824. Refinements were also made to the KVD824 Phase 2 Komplete protocol. The company is working closely with study investigators and clinical trial sites to proceed with all study activities as soon as possible.

KalVista has previously reported data from first-in-human and formulation studies of KVD824 that were conducted in the UK. To date, a total of 121 subjects have received KVD824 as single doses up to 1280 mg and up to 14 days of twice-daily dosing of 600 mg and 900 mg. Data from the Phase 1 studies indicate that KVD824 maintains the plasma concentrations that we believe are required to deliver efficacy consistent with approved injectable therapies. In both studies adverse event rates were similar in placebo and active arms, no subjects withdrew, and no serious adverse events were reported.

(Source: KalVista)

16 September 2021

The United Kingdom National Institute for Health and Care Excellence (NICE) recommends Orladeyo (berotralstat) for preventing recurrent attacks of HAE in eligible patients 12 years and older if they have at least two attacks per month. With this recommendation, HAE patients in England, Wales and Northern Ireland will have access to the first oral, once-daily therapy for routine prevention of recurrent HAE attacks.

"HAE UK welcomes the NICE decision on berotralstat, which means that eligible patients and clinicians have another choice of treatment for this lifelong condition", says Laura Szutowicz, CEO of HAE UK.

"We are excited for HAE patients that this recommendation from NICE provides access to the first oral, once-daily treatment for UK patients to achieve symptom control and experience relief from the burdens of HAE. The positive NICE recommendation also expands access to modern prophylaxis with Orladeyo, compared to the attack frequency requirements from NICE for injectable options," says Charlie Gayer, CCO of **BioCryst Pharmaceuticals, Inc**.

A decision from the Scottish Medicines Consortium for use of Orladeyo for HAE patients in Scotland under NHS is anticipated in the first half of 2022.

The NICE recommendation was based on findings from the Phase 3 APeX-2 trial, in which Orladeyo met its primary endpoint, significantly reducing HAE attacks vs placebo at 24 weeks. This reduction was sustained through 96 weeks, with an 80 percent average reduction in patients' mean attack rate per month during weeks 25-96 of the trial, compared to baseline. Orladeyo was generally well-tolerated during the treatment period with fewer drug-related adverse events reported in part 3 (weeks 49-96) as compared to part 1 (weeks 0-24) and part 2 (weeks 25-48).

"The impact of HAE on patients goes beyond the potentially life-threatening swellings. It can also have a long-term effect on patients' self-esteem and quality of life," says Dr. Sorena Kiani, consultant immunologist at Barts Health NHS Trust: "The NICE recommendation of berotralstat is great news for clinicians and eligible patients who now have access to the first oral preventive treatment for HAE that could significantly reduce the number of attacks and may improve quality of life."

(Source: BioCryst)

HAEi AROUND THE WORLD

Currently there are HAE member organizations in **93** countries. You will find a great deal of vital information on the HAE representations around the globe at **haei.org** – and the world map will provide you with contact information for the member organizations as well as ACARE centers, hospitals, physicians, and available medication.

The information on **haei.org** is being updated as soon as HAEi receives fresh data from the national member organizations.