CONGRESS A NURSING PERSPECTIVE

The WFH 2018 World Congress in Glasgow was attended by 11 haemophilia specialist nurses from Australia. This included a Haemophilia Foundation Australia education grant, CSL Behring's Dawn Thorp Award, and The Royal Children's Hospital, Melbourne Continuing Professional Development Fund for Allied Health and Nursing Staff, as well as funding to several nurses from CSL Behring, NovoNordisk, Pfizer and Shire. This support to attend provides opportunities for Australian nurses to learn about new advances in treatment and care and to bring these back to their clinical settings. The impact this can have on practice change to benefit patients and families along with networking opportunities is invaluable.

Having attended a number of international congresses over the past few years, we noticed a heightened level of excitement with presentations of new treatments that would improve outcomes and the quality of life of patients and families. It is going to be a difficult task to remain patient for these products to be approved and accessible but hopefully they will be made available as soon as practical.

Specialist haemophilia nurses from around Australia have provided the following points of interest from sessions attended. Please do not hesitate to contact your own Haemophilia Treatment Centre if you have any specific questions.

A Longer Acting Factor VIII In Development

Janine Furmedge
Haemophilia Nurse Coordinator, Henry Ekert Haemophilia Treatment Centre, The Royal Children's Hospital, Melbourne

BIVV001 – a novel, weekly dosing, VWF-independent, extended half-life FVIII therapy: first-in-human safety, tolerability, and pharmacokinetics

Joachim Fruebis, USA

Research continues to be directed towards extending the half-life (how long factor stays in the body) of factor VIII (8) and factor IX (9). Current Extended Half-Life products (EHLs) can increase the half-life of factor IX by up to 5 times. However the increase in half-life for factor VIII products has been less pronounced (approximately 1.5 times) meaning it still needs to be given approximately twice per week. In human plasma, most factor VIII is paired with von Willebrand factor and one of the challenges in extending the time factor VIII lasts in the circulation has been its dependence on von Willebrand factor.

Joachim Fruebis, Senior Vice President of Development at Bioverativ, presented early study results of a new recombinant Factor VIII called BIVV001 in a 'late-breaking session'. BIVV001 fuses four different proteins together, including factor VIII and von Willebrand factor and reportedly makes a product that is more stable and with a longer half-life than current factor VIII EHLs.

A preliminary study (Phase 1/2a) has recently commenced in the USA looking at safety and half-life of BIVV001 in adults with severe haemophilia A. Participants receive a single intravenous dose of standard factor VIII and 4 days later a low dose of BIVV001. Blood tests are taken to measure the half-life of both products and to also test for FVIII inhibitor after 14 and 28 days.

Fruebis presented results from the first 4 participants:

- A single, low dose of BIVV001 extended the half-life of factor VIII to 37 hours, a substantial increase compared to the 13 hours seen in the standard recombinant factor VIII
- Five days after the dose of BIVV001 the average factor VIII level was 13%, and after seven days was 5.6% (factor VIII level after standard products would be expected to be 0% after 5 and 7 days)
- BIVV001 was generally well tolerated and with no development of inhibitors
- Based on these results there is the potential for once weekly or longer dosing.

BIVV001 has shown promising results in early studies. New products such as BIVV001 are subject to rigorous further study before establishing they are safe and effective and ultimately becoming available for use.

Australian nurses at Congress,
Photo: Robyn Shoemark

Childhood Obesity And Haemophilia

Jaime Chase
Haematology Clinical Nurse Specialist, John Hunter Children's Hospital, NSW

Obesity

Kuixing Li, China

As part of my experience at the WFH 2018 World Congress, I was privileged to attend many thought-provoking and practice-changing sessions. One of these was about the effect of childhood obesity on the child with haemophilia.

Obesity is abnormal or excessive fat accumulation that can or will affect a child's or adolescent's overall health. Childhood obesity is a medical condition that affects children and teenagers.

A healthy weight and height is very important for children and adolescents with haemophilia (just as it is for adults). When children and adolescents are not within a healthy height to weight ratio, this can negatively affect their healthy development. Children and adolescents with haemophilia who are obese or weigh well above their age group are at a very high risk of developing cardiovascular issues and arthropathy later in life. This can have a profound effect on the person with haemophilia as they move through their life journey.

The question is asked - why are children and adolescents obese or in an unhealthy weight range? A simple answer would be eating too much and not exercising enough. This is a very simple way of looking at an issue that is affecting the whole of the world's population of children and adolescents- not just children with haemophilia. There are very complex and interacting systems of factors within our society that contribute to this issue. These include access to calorie rich foods, increased portion sizes and increased fast food availability. These trends also include a decrease in outdoor play and sport. There is also the increased dependence on electronic devices.

What can parents and caregivers do to encourage healthy weight gain and maximise joint health through childhood, adolescence and beyond? There is a simple phrase to remember: LIVE 5, 2, 1 and 0.

5 - Have five serves of vegetables and fruit per day.
2 - No more than two hours of screen time a day
1 - One hour of physical activity per day.
0 - No sugary drinks.

There are many websites and programs available if you think your child or adolescent is overweight or obese. Talk to your HTC if you have concerns - your treating team will be able to provide referrals to appropriate services and further information if required.

Prosthetic Joint Infection In Patients With Haemophilia

Andrew Atkins
Nurse Consultant, SA Adult Haemophilia Treatment Centre, Royal Adelaide Hospital

Prevention of late infection of prosthetic joints in patients with hemophilia

James Luck, USA

The main cause of failure of a total joint replacement (TJR) is possibly infection. Prosthetic joint infection is much more common in people with haemophilia, and is a very serious complication requiring multiple operations, with prolonged disability and discomfort.

A literature review of infection in haemophilia TJR surgeries showed an average rate of infection of 8.6% in over 550 surgeries after an average of 7.6 years follow-up, with no difference in rates between HIV- and HIV+ patients. This compared to an average rate of infection in the general population of 1.5%.

The presenter recapped his own research from 1975-2001 of 90 TKRs in the US where there were reported joint infections in 16% of cases. It was posed that the joint infections were due to the introduction of pathogens through self-injection of factor in the weeks and months following surgery, and this prompted a prospective 12 year study (2005-2017) of 49 TJRs. Patients were advised of the high rate of infections in haemophilia TJR surgeries, and of the suspected cause being self-injecting. They were given education/training in self-injecting pre-operatively by HTC nurses, and reminded at every post-operative visit. Results: zero primary (unknown source) infections, with 2 secondary (known source) infections.

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1. The SSE Hydro arena Photo: Hayley Coulson
2. The Scottish Event Centre, venue for the World Congress
3. BBC Scotland, Glasgow
4. Highland Pipers outside the Congress Civic Reception

Take-home message: Vigilance in maintaining good practice is always needed when self-injecting, but especially so after major surgery, and even long after the post-operative period. Pre-operative reinforcement of technique may well be worthwhile, even after a life-time of self-injecting.

Rare Bleeding Disorders

Megan Walsh
Clinical Nurse Consultant, Ronald Sawers Haemophilia Centre, Melbourne

Overview of clinical assessment and diagnosis

Flora Peyvandi, Italy

Rare bleeding disorders have always been group where there is sparse information: numbers of patients affected are low and bleeding symptoms are slightly different and vary depending on what specific factor is missing or reduced.

Rare bleeding disorders include factor VII (7), factor X (10), factor XI (11), factor XIII (13), factor II (2), factor V (5) and fibrinogen deficiencies.

When I saw Professor Flora Peyvandi, a world expert in rare bleeding disorders, was presenting a session, I was keen to attend.

She explained that the rarity of rare bleeding disorders limited proper randomised studies into individual disorders. Treatment is often based on expert consensus rather than evidence-based guidelines. She gave some insight into treatment regimes. Rare bleeding disorders are sometimes difficult to diagnose due to technical limitations in laboratory testing.

Usually both men and women are equally affected, i.e. there is no sex-linked inheritance and the inheritance pattern is usually recessive.

Prof Peyvandi explained the bleeding pattern in rare bleeding disorders differs from haemophilia: bleeding problems are often seen at labour and delivery in affected women and also during menstruation and pregnancy, and bleeding is often seen after circumcision in affected boys, or umbilical stump bleeding after birth in male and female newborns. Bleeding often happens at time of invasive procedures and bleeding is common from mucosal surfaces, e.g., mouth, gut, vagina, etc.

The good news is there are now 22 countries contributing data to a rare bleeding disorder network on the treatment of rare bleeding disorders. So some guidelines for treatment can be formulated that will be evidence-based.

Gene mutations that cause specific rare bleeding disorders are now starting to be identified, which will assist in diagnosis and genetic counselling of families.

Currently there are only specific concentrates to treat fibrinogen, factor VII, factor XI and factor XIII deficiencies, with the majority of these still being plasma-derived. The only recombinant concentrates are for factor VII and factor XIII deficiencies but are very expensive and not available to the majority of patients worldwide.

Disappointingly there are still no available specific factor concentrates for patients with factor V or factor II deficiencies.

There has been some work on gene therapy for factor VII in animals which has been published recently.

Some of the new novel therapies in the pipeline for treatment in haemophilia may also be of use in treating rare bleeding disorders if their safety and efficacy are established in clinical trials. These include extended half-life factor VIIa; and also gene therapy, monoclonal antibodies (anti-TFPI), and small interference RNAi (siRNA) because they have an effect on the coagulation pathway rather than being specific factor replacements. These are already in clinical trial in Australia for haemophilia. If successful, they may then be trialled in rare bleeding disorders. This may result in breakthroughs for treatment of patients with rare bleeding disorders in the future, which is exciting.

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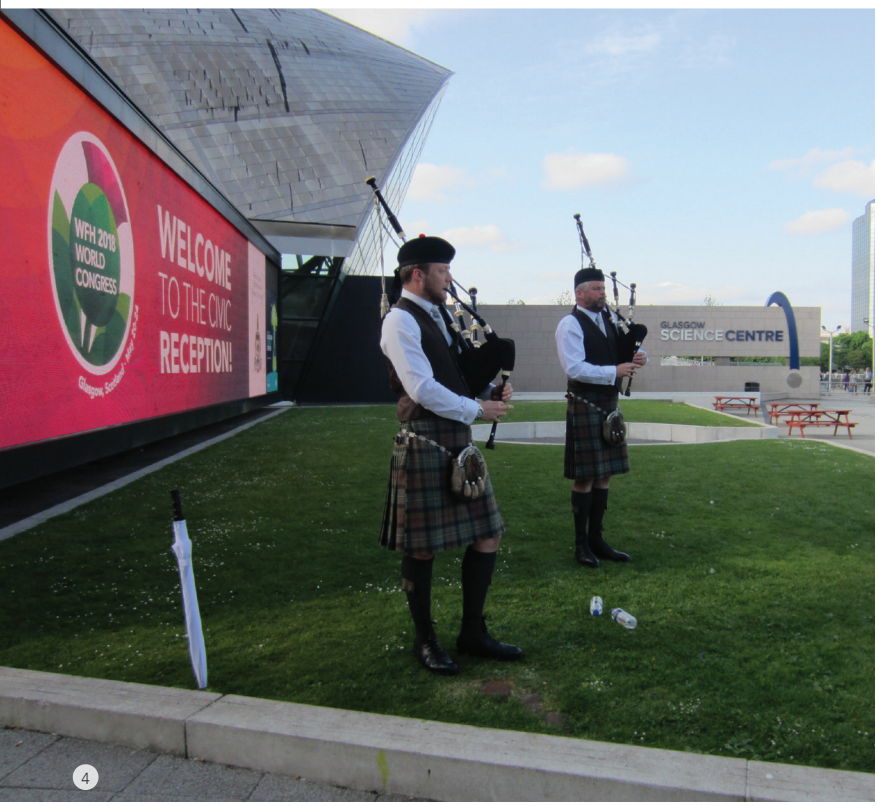

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Pain In People With Haemophilia

Natalie Gamble–Williams
Haematology Clinic Nurse, Perth Children's Hospital

Pain

Greta Mulders, The Netherlands

One of the many sessions I attended that I found interesting was the session, 'Pain in people with haemophilia', which also gave me some insight into how I can better incorporate a structured way to address pain in my patients with haemophilia A and B.

The Global Haemophilia Nurses Support Committee (GHNSC) undertook the Snap-shot Pain Survey study to establish a baseline knowledge of pain experience, investigate the annualized pain ratio and determine the efficacy of pain therapies in patients with haemophilia A and B. 53 nurses and 24 Haemophilia Treatment Centres participated. Questionnaires about pain, medications and other methods for pain relief in the last 28 days were given to patients.

There were some interesting results from the study, such as that people with haemophilia in western countries have greater pain than those from the rest of the world. Could this be because of the activities of patients in the western countries? Yet patients from western countries have better access to prophylaxis, so how can this be?

Patients with inhibitors had greater pain than those without and there was no difference in pain experience for patients on prophylaxis versus on-demand.

Lastly, they found that patients using pain medications at least once a week had greater pain than those who used pain medications on a yearly basis.

From this study we can conclude that pain management in haemophilia patients is a global issue and we need a structured way to address pain. We need to focus on both acute pain with bleeds, as well as chronic pain and follow up with the patients. The current treatment strategies for pain in haemophilia patients seems inadequate and haemophilia patients have pain regardless of treatment regime, age, or ethnicity.

As nurses we should take all these factors into consideration and advocate for our patients, involving the appropriate members of our medical team to address pain issues in our patient cohort and provide better treatment plans and strategies to alleviate their pain. Working in the paediatric setting, it is vital that we use the correct pain assessment tools for the appropriate developmental age. Maintaining consistent pain assessments of all the patients is important for their quality of life and psychological wellbeing.

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This presentation highlighted the continued need to evaluate our programs and services to empower young people to become independent and confident in managing their own health.

VWD Clinical Conundrums

Sue Webzell,
Haemophilia Nurse, Hollywood Private Hospital Haemophilia Centre, WA

Overview: Current approaches to diagnosis and treatment

Frank Leebeek, The Netherlands

I found the session on von Willebrand disease (VWD) clinical conundrums very interesting. Leebeek described VWD as the most common inherited bleeding disorder with 0.5% to 1% of the population affected. He outlined the difficulties in type classification of VWD due to inconsistency in diagnosis, and that specific mutations can result in different outcomes of various tests and added that more research needs to be done to optimise assays. He suggested bleeding scores can be helpful but may not always correlate with the patient's VWF (von Willebrand factor) levels.

This absence of correlation is particularly apparent in patients with a low VWF level. He noted that individuals who have low levels of VWF that are between 30% - 50% can show significant bleeding related to their phenotype, so they may require treatment despite their levels being above the 30% used for VWD diagnosis. These individuals can be safely treated with DDAVP to increase their factor levels; there should be no requirement for factor replacement products.

He also discussed how VWF levels rise with increasing age and comorbidities. Interestingly, the greater the number of comorbidities a patient has, the higher their VWF levels can rise, often into levels of low to normal VWF ranges. He advised that these increases in levels do not prevent bleeding. In spite of higher VWF levels, the bleeding tendency will remain the same, and treatment is still appropriate in these patients. Treatment with DDAVP or von Willebrand factor or factor VIII is still required; however, lower doses may be needed. It is important not to treat by the VWF level but according to the patient's bleeding history.

Challenges Of Ageing, Dental Care And Health Economics

Beryl Zeissink, Clinical Nurse Consultant – Haemophilia Queensland Haemophilia Treatment Centre, Royal Brisbane & Women's Hospital

Understanding ageing – a nurse's perspective

Cathy Harrison, United Kingdom

To open her presentation on understanding ageing, Cathy Harrison quoted statistics from the UK Haemophilia Centre Directors Organisation Annual report for 2015/ 2016, which demonstrated that people with haemophilia are reaching ages of 60–75 years more so now than they did 40 years ago. Important factors for this are healthy diet, maintaining physical activity, good sleeping patterns, maintaining social networks, and looking after ones' mental health. Maintaining a healthy weight decreases the stress applied to the joints, especially knees, and this helps with bleed prevention. Good fluid intake assists with venous access. Keeping up a relationship with your primary care team, i.e. your General Practitioner (GP), enables a team approach with you and your GP to perform regular health checks including blood pressure checks, cancer screening, and diabetes screening. 1 in 3 cancer deaths are preventable with earlier detection. Your GP is in a good position to recognise red flags to maintain your physical and mental health.

Healthy ageing - getting long in the tooth

Alison Dougall, Ireland

Alison Dougall challenged the audience with the importance of oral health. She stressed that oral health is not just the absence of disease but influences many aspects of general well-being – our ability to speak, smile, smell, taste, touch, chew, swallow and convey our emotions through facial expression. You need 20 functional teeth to be able to eat.

Bleeding from the gums is a symptom of inflammatory disease, so treating with factor should not be the only management. If you have bleeding gums you should see a dentist to assist with management of gingivitis. Long-term gingivitis in the elderly can affect dentition as a result of receding gums. In the elderly haemophilia patient restriction of joint movement can also affect the quality of teeth-brushing. Also as we get older, it is more likely that individuals take more tablets. Taking many tablets can increase dry mouths in the elderly, and the saliva therefore does not protect the mouth. Broken teeth also need intervention as early as possible.

Regular visits to the dentist helps to catch not only gingivitis but prevent dental decay. In the elderly oral cancers may also be identified by a dentist. Early detection improves survival rates.

The value and cost analysis of innovative therapies: the Canadian experience

David Page, Canada

Also of interest was David Page's presentation in a session on health economics, where he spoke of the complications in Canada's health system in relation to accessing extended half-life (EHL) products. Quebec has had difficulty accessing these products with different access criteria to the remainder of Canada (9 provinces and 3 territories). Quebec has 3 patients approved for EHL, whereas the rest of Canada has 150 to 200 patients who have switched to EHLs. For me, this highlighted the importance of a national approach to funding of treatment, as we have in Australia with the National Blood Authority, to ensure equity in access to new treatments.

Transforming Transition

Anne Jackson, Nurse Consultant - Haemophilia
The Michael Rice Centre for Haematology/Oncology, Women's & Children's Hospital, Adelaide

Transforming transition toolbox

Susan Hook, United Kingdom

Susan Hook, Advanced Nurse Specialist from Edinburgh Haemophilia Centre in Scotland, presented on the topic of young people with inherited bleeding disorders transitioning to adult services in the UK. Susan identified a model of care that was reflective of the model in Australia which typically:

- transferred patients from the paediatric setting to the adult setting between the ages of 16 to 18
- the local paediatric team was responsible for preparing the young person
- the focus was on the young person becoming independent, proficient at self-treatment and developing knowledge of their bleeding disorder
- and has been carried out over many years.

Her presentation then focussed on new resources that had been identified and developed to assist and improve transition for young people. With the support from Haemnet, an online community that connects healthcare professionals who manage people with bleeding disorders, and with guidance from National Institute for Health Care Excellence (NICE), a 'Transforming Transition' nurse-led initiative was developed. This involved reviewing current practice, agreeing on outcome measures, delivering and evaluating a patient-led development program.

The initiative developed a shared understanding of the life stages and the steps leading to independence. She highlighted that documentation was seen as an indicator of effective transition practice, and the initiative developed documentation materials to assist the transition program. This included the 'Ready, Steady, Go – Hello' framework designed specifically for people 11 years and upwards, which covers knowledge of the condition, self-advocacy, and health and lifestyle. It set out a clear checklist of steps and what was to be achieved that would help design a program to suit the individual.

To assist with developing resources and identifying areas for improvement, they held a workshop with young people and a parent and identified what they thought would improve their transition to adult service. One key theme was empowerment to becoming the expert patient; and they also identified the need for further resources, including animations and educational apps. Some of these have now been developed by Haemnet including a YouTube channel with animations that can be accessed by health professionals. An educational game app for young people called *Haemic's Challenge* developed by Cardiff & Vale Local University Health Boards can be down loaded for free. This game allows the young person to explore the life of someone with haemophilia.

Susan concluded with the note that further work needs to be done, including piloting and evaluating the tools with small groups.

This presentation highlighted the continued need to evaluate our programs and services to empower young people to become independent and confident in managing their own health. At the Women's & Children's Hospital we have followed a transition program which highlights the transfer of knowledge and care to the individual through targeted age related milestones, but tailoring to the individual is becoming a priority. The resources developed in the 'Ready, Steady, Go – Hello' program could assist with this process as well as providing innovative online resources for education instead of the traditional educational resources we are currently using.