European Rett Syndrome Association, Conference Maastricht: Research Update and Preventative Management

This report is my personal perspective and journal of the 3rd European Rett conference, which was attended by nearly 330 people. The conference was held in the city of Maastricht in the Netherlands, from the 17th to 19th October 2013. The opening speech, accompanied by a rotating globe with Google Earth, showed the broad coverage of Rett Syndrome Associations across the world that results in the “small world of Rett Syndrome.”

As a SLT practicing in UK, my comments relate to the British Isles.

Sally-Ann Garrett, 22 October 2013

***************

Congratulations to the organising committee who put together a full programme about developments in research and management strategies in Rett Syndrome. The conference also touched on the related conditions of CDKL5 and MECP2 Duplication syndrome. The two and half days were packed with exciting new information, with presentations by and for scientists, clinicians and therapists, and workshops with very practical ideas for parents and support workers. There were a host of posters on a wide range of topics, including information about the European Associations working hard to support families. The conference programme was very full; it was difficult to decide which session to attend. There were times when a presentation on the latest thinking about how to deal with things like breathing regulation, scoliosis or nutrition clashed with discussions about communication or the social and emotional lives of girls with Rett. I know that I missed vital information, but I’m sure everyone who attended went home with new insights to share with family, friends and colleagues. The opportunities for networking with stimulating discussions and exchange of ideas were fantastic as well as the chance to meet up with friends and contacts from around the world. Speakers came from Australia, Europe, Japan, South America, UK, and USA.

The social side of the conference was also very interesting and provided further opportunities for those all-important discussions. There were two evening receptions, one in the beautiful old City Hall on Thursday, and the second one on Friday in the Limburg Provincial Building, where the Treaty on European Union was signed 20 years ago. The third event was a stand up dinner held in the Grand Café Maastricht Soiron on Friday evening, which included the auction of a painting.

- The Keynote speaker on the first day was Dr. Harry Steinbusch who is Professor of Neuroscience at Maastricht University. He provided the opening speech entitled Moving from the Forebrain to the Brainstem; and presented complex information on neurodevelopmental and neuropsychiatric disorders. He observed the similarity and relationships in brainstem dysfunction between Alzheimer Disease, Parkinsonism, Rett syndrome, and depression that he felt might help in the understanding of MeCP2-mediated autonomic dysfunction and therefore provide possible future therapeutic strategies. There are indications that the prevalence of stress related symptomology is increased in RTT. The complex structures in the brainstem, and the neurotransmitter nature of the Dorsal Raphe Nucleus and the brainstem in general stress its role as a key target for research into RTT and autonomic dysfunction. I’m glad I have a knowledge of Neurology already that enabled me to understand some of these concepts.
There were a number of subsequent presentations by other researchers, which I did not attend, on brainstem dysfunction in Rett syndrome, particularly in relation to respiration, sleep, and locomotion, and one talk on bone marrow transplantation. These talks were given by Willem Voncken, Nicoletta Lansberger, Hilda Van Esch, and Jan Eike Wegener, and after lunch, Diethelm Richter, Peter Julu, and Masaya Segwa. I attended the parallel session for Parent Associations which was well attended and each association had the opportunity to comment on a consistent set of headings, including thinking about the future. The variability in support for people with RTT was huge; I was concerned that Slovakia has no centre of expertise and no clinicians with an interest in Rett Syndrome.

After the break, the three parallel streams provided a dilemma for me, about which sessions to attend, but I selected five presentations:

- **Professor Angus Clarke from Cardiff** gave an excellent presentation “Promising Cures” for Rett Syndrome: he spoke of the potential hazards associated with research, the issues of raising hopes and having to manage unrealistic expectations if unsubstantiated claims were being made regarding cures. He emphasised the responsibility researchers face when recruiting families to clinical trials, especially regarding the potential hazards that a particular treatment approach might present. He spoke of the importance of measuring quality of life and outcomes of interventions.

- **Meir Lotan** presented on Enhancing Walking Ability in an individual with Rett Syndrome through Applied Behaviour Analysis.

- **Gunilla Larsson** followed with a stimulating presentation on Orthostatic Reactions and the related areas of motor development and mobility.

- **Alexander Pfaff** talked about Anaesthetic Implication for Rett Syndrome.

- The final session of the first day was by **Ingegerd Witt-Engerstrom** who spoke eloquently on the steps towards a clinical management programme.

On Thursday evening, we were left to our own devices after the reception, selecting from the vast range of restaurants in the town, followed by intense discussion (and a lot of fun) in the bar!

On Friday, the second full day, I tried to attend the sessions that had anything to do with speech, language, communication, and eye gaze:

- I really enjoyed the talk by **Peter Marschik**, Associate Professor Psychologist from Graz University who presented “What lies beneath: early speech-language and communication development”. He provided information about the subtle differences in the early development of babies who were later found to have Rett Syndrome. Retrospective analysis of audio and video tapes demonstrated that Rett babies make different sounds to typical babies - long before anyone knows they have any kind of neurological problem. They don't coo or babble in quite the same way as most infants. It's interesting that, in retrospect, there are so many things that aren't quite 'right' about the girls, which does confound the diagnostic criterion of a period of normal development.

- This is an area that has always interested me, and I wonder if these differences could be used to aid early diagnosis. I made the plea many years ago for parents to share their video and cassette recordings, and it was great to finally meet Bill Callaghan, President of the
Australian Rett Syndrome Association, who sent me a cassette tape of his daughter 20 years ago! Peter has kindly offered to discuss the work I am doing on girls with preserved speech variant Rett Syndrome.

- **Judy Vine** from Israel made a presentation that I found incredibly reassuring as it was word for word the kind of presentation I give about AAC! She talked of the need for different communication tools with different people, or different tools at home and at school. She also talked about 'device abandonment'. She does not use PODD, but displayed a format for sheets she calls navigational charts.

- After coffee, **Theresa Bartolotta** showed us how she had used communication coaching to enhance interactions between individuals with Rett Syndrome and their communication partners. The before and after coaching videos were very revealing.

- **Hans Van Balkom** talked about a model of communication competence, using neuro-linguistic concepts to obtain a profile. I will be in touch with him to see if this model could be used in UK to support the work of SLTs with people who have Rett Syndrome.

- **Helena Wandin**, SLT from Sweden presented on early intervention in RTT with an emphasis on emotional expression.

- **Elnat Saraf** from Israel gave a presentation called “We talk AAC” about their practice in the Israel Rett Syndrome Centre to provide the essential path to verbal expression. She said there is no question that the girls must learn to express themselves, at a minimum, through the use of choice making, yes/no responses, single and multiple message speech output devices, and dynamic communication displays. They are beginning to use eye gaze technology.

- **Jose Salomao Schwartzman** showed us a Brazilian eye tracking study (to find out how girls with Rett syndrome use their eyes and what they look at on a computer screen) which found that their social patterns and preferences, as shown by tracking heat maps, are very similar to neurotypical children - and completely different to children with an autistic spectrum disorder, supporting the concept that Rett syndrome is a completely different disorder to autism.

- Last, before lunch, **Hector Minto and I** presented on the results of our UK study looking at the eye gaze skills of more than 100 girls and women with Rett Syndrome. We believe that eye gaze technology is a viable means of access that can lead to assessment of cognitive and language development. This study (which was also presented in a longer session at Communication Matters in September) has been written up as a file for Facebook, and will be submitted to Communication Matters for publication.

After lunch on Friday, the Communication sessions continued with presentations by:

- **Patricia Remshifski** who talked about the experiences of parents of adults with Rett Syndrome: providing insights into communication, feeding and swallowing. Patricia used a questionnaire to obtain information from the families.
• **Anna Urbanowicz** who presented on her study of the speech and language abilities before and after regression in 802 girls and women with Rett Syndrome. She used the Australian database and Inter-Rett data, which revealed relationships to the specific mutations. Anna talked of the need for longitudinal studies, something I have always suggested, and hope to support with research over the next few years.

• **Marith Bergstrom-Isacsson** who presented on her study of how to recognise and interpret physiological responses to music and vibroacoustic stimulation.

• I was not able to attend the next two sessions in this stream because I attended a parallel workshop session supported by **Tijs van Halteren and Hector Minto**, which provided information on how eye gaze works and how to carry out calibration and early assessment and interaction using Tobii equipment. Thanks Paul Beaumont for being a willing guinea pig!

The two sessions I missed in this stream were

• **Cindy-Jo Morison** – an evaluation of early and continuing music therapy

• **Carla Vlaskamp** – Emotional Sensitivity in individuals with RTT: the parents view.

After a break, the communication stream was supported by a “**Meet the Communication Experts**” and I was honoured to be invited to be on the panel. Parents and others had the chance to pose questions. Two themes emerged from this, one being the need to include symbols for expression of feelings and emotions, and the other how to move from the intuitive understanding of the parents to more definite answers including yes and no, especially when supported by different carers.

• **Yoshiko Nomura** provided an update on the pathophysiology of Rett Syndrome, with an emphasis on stereotypy and dystonia.

On Friday evening, following the reception in the Provincial Building, I had a stimulating discussion with Theresa Bartolotta and Patricia Remshifski during the dinner, about the need for joined up thinking in research aimed at extending the practice of Speech and Language Therapy in Rett Syndrome, so watch this space for information on collaboration with the USA!

On Saturday morning, despite only a few hours sleep, I attended five sessions:

• **Helen Leonard** presented on translating research findings into improved outcomes for those affected by RTT. She provided the history of Rett Syndrome from Andreas Rett’s first publication and the work of Hagberg, through to the current data bases which have been used to provide consensus guidelines for a number of conditions associated with RTT: dysphagia, fractures, seizures, breathing abnormalities, and sleep. For all these manifestations, they have collected evidence and developed practice guidelines. They have found that behaviour and mood needs a better instrument for evaluation, and more work needs to be done on quality of life and life expectancy. Her final comment is one that will resonate with many, about the need for “maintaining the rage about Rett Syndrome”.

• I attended a short meeting with others involved in research, to talk about how we can work together in the future, and this discussion continued into the coffee break, where small tables provided the ideal place for small groups to get together.
• **Andrea Nissenkorn** gave a talk, “The characteristics of epilepsy in RTT- lessons from the European Rett Database”

• **Alison Anderson** talked about the MECP2 duplication syndrome international database project. I have her contact details if any of the UK parents would like to participate.

• **Monica Coenrads** from the USA Rett Syndrome Research Trust gave the final presentation, *Curing Rett Syndrome: How do we get there?* Using some very detailed and helpful slides, she set out her vision of where treatments - and potentially a cure - will come from. She explained the research strategies that are happening in parallel to try to find the breakthrough:
  - reactivating the silent, healthy copy of the MECP2 gene that every girl with Rett syndrome has in every cell of her body
  - delivering a healthy copy of the gene successfully through gene therapy to humans as well as mice
  - Identifying 'modifier genes' that can protect girls against the effects of a mutated MECP2 gene
  - Identifying drugs that, while not curing the condition, could treat Rett symptoms more effectively than anything currently available.
  - Her talk provoked some interesting questions, and it felt like these discussions would continue long after the conference ended.

The final remarks and messages were provided by Rob van der Stel, Chairman of ERSCM. He told us that the next major event will be the IRSA Symposium in June 2014 in Washington, followed by the 8th World Congress which will be held in Russia in May 2015. A joint statement has been given to the European Union from the Congress to express the support on the European policy on rare disorders and to define more specific wishes from parent organizations related to care and cure for Rett Syndrome. He kindly mentioned the two pages on Facebook that I started which focus on Speech and Language Therapy in Rett Syndrome.

Words of thanks to everyone were provided along with a video composite of photographs of the girls and women who tell us every day why we do what we do, to make the world a better place for them all. It was impossible not to shed a tear.

I was very stimulated by this conference. The concept of inviting clinicians, researchers and families to the same meeting works very well, and provides an excellent opportunity for families to ask questions, discuss ideas, and learn from the experts. For all of us who have Rett syndrome at the centre of our world - the scientists who are tackling it in the lab, the clinicians and therapists who are dedicated to improving our children’s lives right now, the parents who believe so strongly in their girls and know they are ‘in there’ - we can all have real hope. Parents have always recognised the intelligence of their daughters and I believe we are on the brink of showing the range of cognitive and linguistic abilities of people with Rett Syndrome. I look forward to being part of the research community that will bring the techniques and systems to common use. We have a goal: we want the girls and women, boys and men who have Rett Syndrome to be the best they can be. How wonderful to be part of that.

I am grateful to Tobii UK, and the Royal College of Speech and Language Therapists for sponsoring me to attend.