OSKAR HANSSON TAKES HOME PRESTIGIOUS PRIZE

BAGADILICO’s Oskar Hansson has just been awarded the Inga Sandeberg prize of 125 000 SEK. The prize is awarded for his internationally acclaimed clinical research on molecular disease mechanisms in Alzheimer’s disease.

Why do you believe that you were awarded this prize?
Our previous research on development and validation of biomarkers for early diagnosis of Alzheimer’s disease has already influenced the diagnostic work-up of Alzheimer’s disease in clinics and is likely to benefit drug development.

What are the most exciting research projects that you are currently involved in?
We have preliminary data showing that individuals with Alzheimer-pathology, who do yet not exhibit any measurable cognitive deficits, exhibit functional changes in the caudate nucleus and thalamus, indicating that these regions are involved in the very early stages of Alzheimer’s disease. We have also recently shown that cerebrospinal fluid biomarkers can reliably detect amyloid pathology in the brain when measured as part of clinical routine assessment and that these measures are not affected by potential confounding factors such as age, disease stage or APOE genotype. The findings are soon to be published in JAMA Neurology and JAMA Psychiatry, respectively.

You are one of very few who have been awarded this prize under the age of 40. How does that make you feel?
I am very honoured to receive a prize that many of my role models in Alzheimer’s disease research have previously received.
PARKINSON CAFÉ EXPLORES THE ARTS

ART ENGAGEMENT BOOSTS CREATIVITY AMONG CAFÉ GUESTS

TEXT: JENS PERSSON

On May 26th, BAGADILICO hosted yet another Parkinson Café. This time around the focus was geared towards ‘Arts & Quality of Life’. What initiated this, perhaps unexpected, theme is a project at Malmö Konsthall where Alzheimer’s patients have been encouraged to communicate through art. The speakers that gathered at the Parkinson Café hope to introduce a similar experience for people with Parkinson’s, starting early next year. Judging from the level of participation expressed by café guests, it is an idea that carries a lot of promise. Here, the moderator of the evening, Johanna Rosenqvist, speaks about her first Parkinson Café experience.
What was your overall impression of the Parkinson Café?

- First off, I was surprised that there were so many visitors. But more than anything, I was amazed by the degree of interactivity. It was very easy to get a discussion going, even a fairly abstract one about the general role of art in society. Pretty much everybody took part and shared their views.

- For example, Mats Fastrup, who is an art educator and has led the project at Malmö Konsthall, conducted a test where the participants got to react to a number of works of art as a starting point for a broader discussion. It’s the same kind of exercise that has been done in collaboration with Alzheimer’s patients in Malmö. This is something that we are hoping to repeat for people with Parkinson’s in the coming year. Café guests immediately caught on and kicked off a very informed debate. In addition, it turned out that there were many participants who had pedagogical experience in some form. That helped raise the debate further on the role of art and aesthetics in society. It seemed that many had come because the topic interested them specifically.

Where there any particular themes that kept popping up in discussion?

- One thing we talked about recurrently was the fact that it is likely that it will be some time before there is a cure around. What should we do in the meantime to promote quality of life in an everyday situation? The basic idea behind this project is that we must complement traditional health care with activities that stimulate patients in other arenas of life. That’s where art comes into the picture.

- A question from one of the visitors that really sparked a discussion was “can you tell us what art is?” It may sound as a cliché but it was put forth in a very spontaneous and sincere way. Basically we used this evening to address that question in different ways and give various examples. The way the question was asked and the conversation that ensued suggested that people with Parkinson’s perhaps have a more spontaneous and direct way of discussing matters of this nature. At least, that’s what they themselves believed. Naturally, this excites me further to pursue our upcoming project.

What do you hope to achieve with your future project?

- The project performed at Malmö Konsthall with people with Alzheimer’s is designed to discuss the immediate experiences and feelings manifested when you engage in a work of art. These are situations that do not necessarily appeal to rational thinking but instead can help explore your aesthetic imagination. This is done with an experienced educator, in this case Mats Fastrup. Based on the works viewed, participants later join to explore their own creativity in a joint workshop. We hope to build on that experience for next year when we invite people with Parkinson’s disease.

How did the concluding discussion session pan out?

- Several of the participants underlined that they really wanted to be a part of our project and that this had inspired them to explore other aesthetic venues. One guest said it felt like a new aspect of reality had just opened up which was truly inspiring for us.

- It was also great to get people with Parkinson’s perspectives and it is fascinating to see the level of knowledge that they possess, not only about their disease but on education and art in general. Many concrete ideas were expressed about how health promotion and health services could work better in today's society. I think it is refreshing and freeing for them to meet in a context that is outside the traditional health care arena.

- Axel Holmbom Larsen, a young M.D. who held one of the talks, underlined that our healthcare system must become better at taking care of the whole person and that you cannot solely focus on treating individual symptoms. There is already so much research that shows that you can stimulate the brain towards a greater well being through many different activities. There are examples of this even from the project at Malmö Konsthall, which has shown that Alzheimer’s patients have strengthened their communication skills for example.

- Sometimes you can dance past an obstacle instead of tripping over it.
ow stepping down as BAGADILICO Coordinator, Angela Cenci Nilsson takes the time to reflect on the trials and tribulations she encountered during her spell at the helm of S/S BAGADILICO. Though she may have faced a curve ball or two, the overwhelming feeling that seems to remain is one of progress and unification amongst peers. The all-important evaluation presented by VR in mid-June has since rubber-stamped that sentiment of real accomplishment.

What are the main challenges that BAGADILICO have met during the past semester?

- None really, the past six months have been quite smooth, the preparatory work for the evaluation process took place between May 2013 and January 27th this year.

Could you describe the evaluation process? Hard work?

- The evaluation was based both on written reports, which were submitted to VR at the end of the summer last year, and on a site visit by a panel of external experts on January 27th. At the site visit, the evaluation panel listened to several presentations, which were meant to cover all aspects of BAGADILICO, from the administrative structure and the research policy of our environment to the specific projects performed in the four work packages. Each presentation was followed by questions. The evaluation panel wanted to also meet and interview our young investigators. To prepare for this evaluation process, the hardest work was to select and harmonize a huge amount of material. Indeed, we would be evaluated as a centre, meaning that the synergy and integration between different activities would weigh heavily in the final judgement.

What was your experience of the site visit?

- It was a blessed day! All our investigators and administrators did their absolute best for that day to succeed. It was tangible that everybody cared so much for our environment, that we were working together for a common cause.
Now that we have the results, what are you comments?

- The evaluation report is really appreciative, it was hard to find any words of critique in it. I actually tried, but did not succeed. Both the organization and culture of our centre, and our translational research were very highly praised. The evaluation report also contained very explicit recommendations to the University leadership to support our research centre and technical platforms even beyond the term of the Linnaeus grant, which will end in five years. I think that this report will strengthen the position of our research both locally, nationally, and internationally.

What are you most pleased about?

- That we actually have overcome a great many uncertainties of the past - we all now know where to head for, and how, in the coming five years.

What are you least pleased about?

- Since you are asking me about weaknesses, I must confess that the autumn of 2013 was kind of a turbulent period. The different Work Packages had to select new projects for the period December 2013 through May 2015, while one Work Package leader had suddenly left BAGADILICO and new members had just joined the consortium. At the same time, we had to prepare for the site visit of our external scientific advisory board, which took place on September 26, and for the VR site visit in January. Anyway, all the discussions and questions that popped up in that period are now helping us find stronger and more efficient working routines. For example, the BAGADILICO board is now defining common evaluation processes that will be applicable to all Work Packages - as well as task force projects.

Looking ahead, in what direction do you hope BAGADILICO will go in the coming years? What are the main challenges and opportunities?

- In terms of research directions, we have already planted seeds of the great research that we want to achieve in the coming five years, and the external evaluators have endorsed our ideas and strategies. Now, our joint task is to help the plants grow from the seeds, and then to help them blossom richly! To this end, additional external funding is going to be very important, as BAGADILICO only covers, at the most, 12 percent of all our joint research and administrative expenses. I am currently discussing with Pia Berntsson about strategies to foster large grant applications. For example, it will be important to study very closely the calls’ texts of large trans-national projects to understand how we can best meet them with the strengths and resources we have. It will also be important to proactively try and influence the contents of future European calls within the Horizon 2020 program.

How would you summarize your own tenure as Coordinator, the good and the bad?

- What is good is that I have learned a lot and I have gotten close to many wonderful colleagues. What has been troublesome at times is that it has somewhat intruded on the time available for my own research group.

What are the key issues that you have tried to promote during your spell in the hot seat?

- I have done my best to promote an environment that fosters high scientific quality and accountability. For example, I have insisted on the importance of regular project report meetings within each Work Package for the sake of helping investigators sharpen up ideas and experimental plans through peer critique. Although open critique may be challenging, it does produce excellent scientific fruits, which are documented by our most recent publications. Furthermore, I have tried to engage the young investigators within BAGADILICO, mobilizing their energy and enthusiasm for the sake of continuously improving our environment.

What do you hope will be the lasting effects of your time as Coordinator?

- First off, a culture of high scientific quality and accountability, going hand-in-hand with the mutual respect and appreciation of colleagues. Secondly, an organizational structure able to efficiently support and cross-fertilize a broad repertoire of projects, ranging from areas as diverse as the developmental biology of dopamine neuron to the quantification of specific symptoms in patients.
Two years ago, a new type of stem cell was discovered in the brain that has the capacity to form new cells. The same research group at Lund University in Sweden has now revealed that these stem cells, which are located in the outer blood vessel wall, appear to be involved in the brain reaction following a stroke.

The findings show that the cells, known as pericytes, drop out from the blood vessel, proliferate and migrate to the damaged brain area where they are converted into microglia cells, the brain’s inflammatory cells.

Pericytes are known to contribute to tissue repair in a number of organs, and the researchers believe that their reparative properties could also apply to the brain. The study shows for the first time that pericytes are directly involved in the reaction of the brain tissue after stroke.

“Pericytes are a fascinating cell type with many different properties and found at high density in the brain. It was surprising that a pericyte subtype is so strongly activated after a stroke. The fact that pericytes can be converted into microglia, which have an important function in the brain after a stroke, was an unexpected finding that opens up a new possibility to influence inflammation associated with a stroke”, says Gesine Paul-Visse, neurologist within BAGADILICO and senior author of the study.

Using a green fluorescent protein bound to the pericytes, the researchers were able to track the cells’ path to the damaged part of the brain. The migration takes place within a week after a stroke. When the cells reach the site of damage they are converted into microglia cells, the ‘cleaners’ of the central nervous system. Inflammation can, however, have both positive reparative effects and negative effects on the damaged tissue. The exact role of microglia cells in the regeneration after a stroke is not entirely clear, but we do know that pericytes play an important role in protecting the brain against disease and injury.

“We now need to elucidate how pericytes affect the brain’s recovery following a stroke. Our findings put pericytes in focus as a new target for brain repair and future research will help us understand more about the brain’s own defence and repair mechanisms.”

There is an urgent need for new drugs that can alleviate the harmful effects of a stroke as current treatment possibilities using thrombolysis are limited to the first hours following a stroke.

“Because inflammation following a stroke is an event that continues after the acute stage, we hope that targeting pericytes in the subacute phase after stroke, i.e. within a longer time window following the onset of stroke, may influence the outcome”, says Gesine Paul-Visse.