

TOBeATPAIN Final Conference 27th January 2022

Review by host Hans-George Schaible, Universitaetsklinikum Jena

The final conference on January 26 and 27 was again a virtual conference because of the COVID situation. It was impossible to plan a meeting in Jena because it was unclear whether traveling of the participants would be possible and whether the Jena University Hospital would allow a meeting in the rooms of the University. Even so, the participants would have had to wear masks all the time, and catering would have been very difficult and restricted.

All ESRs presented their work. It was a pleasure to see that all of the ESRs could show a great amount of data. The lectures were well prepared. Clearly the ESRs made a lot of progress in the presentation of their data during the last three years. After most of the talks there was a lively discussion, and the ESRs could show their expertise in their research fields. It became also clear that many of the projects will be continued after the end of TOBeATPAIN. Much of the work will be published in the next years.

We had four invited lectures. Professor Thomas Graven-Nielsen from the University of Aalborg (Denmark) showed in his lecture how experimental pain research can be translated to humans. This topic had not been addressed in former TOBeATPAIN meetings. Professor Ralf Baron from the University of Kiel addressed the mechanisms of neuropathic pain in patients, again a topic not addressed before. Professor Patrik Ernfors from the Karolinska Institutet in Stockholm presented his marvellous work on the role of Schwann cells in nociception. Professor Danial Kaplan from the University of Pittsburgh presented his data on the role of different nerve fibre types in immune mechanisms. All four lectures were excellent and much appreciated by the members of the consortium.

It is noteworthy that the conference was also attended by guests who listened to the lectures of the ESRs and the invited speakers. Thus the work of TOBeATPAIN became known to colleagues in several countries.

Finally, the coordinator of TOBeATPAIN, Marzia Malcangio, took the opportunity to thank all the members of the consortium for their work during the last three years.

Review of scientific presentations by ESR 2 – Xhoana Lama

Day 1

This final meeting was a great success. The ESRs all enjoyed presenting their work, which detailed their scientific achievements, to a wider audience. The presentations raised many interesting questions from attendees and the guest speakers, which stimulated further discussion. The meeting started with Prof Marzia Malcangio introducing WP1. There followed presentations from WP1 ESRs, George Sideris-Lampretsas, Joana Lama, Fatima Gimeno Ferrer, and Rita Silva. The ESRs presented their work performed during the last 3 years, including data from their secondments within Eli Lilly, UKW and UKJ, from which they had enriched their technical expertise while experiencing working in a different environment and generating additional valuable data.

In the afternoon, guest speaker Professor Thomas Graven-Nielsen, Director of the Department of Health Science and Technology at the University of Aalborg, Denmark gave insights on fundamental mechanisms of pain combined with experimental and clinical findings in several musculoskeletal pain conditions such as arthritis and fibromyalgia. He was followed

by our second invited speaker, Professor Ralf Baron, Head of the Division of Neurological Pain Research and Therapy in Christian-Albrechts-University of Kiel, Germany. Prof Baron presented how the stratification of patients with peripheral neuropathies is made based on sensory profiles and how this method is standardized and applied in the clinic for personalized treatment of neuropathic pain.

Prof Camilla Svensson then introduced WP2, and Silvia Fanton presented her findings, including a software program (netplotbrain), which in collaboration with her colleague William Hedley Thompson in KI, she has developed in order to create simple 3D network visualizations of brain. In a touching tribute, Prof Camilla Svensson presented Joana Menezes' findings on a model of fibromyalgia, as Joana is currently on parental leave.

Day 1 finished with the attendees all enlightened but exhausted and ready to recharge their batteries ahead of day 2.

Day 2

Day 2 started with ESRs Zerina Kurtovic, presenting her findings on the role of microglia and macrophages in a mouse model of arthritis-induced pain and Anutosh Roy, talking about his project on mechanisms of spinal neuroinflammation and hyperexcitability in models of joint pain.

Both presented findings from their secondment in KI and KCL respectively. Their talks were followed by Prof Patrik Ernfors from the Karolinska Institute, Stockholm, Sweden, who presented his preclinical work on the involvement of sensory Schwann cells in the transduction of light touch and mechanical pain.

The afternoon session was chaired by Prof Michaela Kress, leader of the WP3 who introduced the overall aims of this WP. Jeiny Luna-Choconta showed her findings on microglia in a mouse model of Fabry disease including data from her secondment in Eli Lilly. The last ESR to present was Cristiana Dumbraveanu, who presented her work on the assessment of medical marijuana bioactive substances in a mouse model of neuropathic pain.

Our last invited speaker, Professor Daniel H Kaplan from the University of Pittsburgh, PA, USA, gave the final presentation of the conference. His talk was focused on neuroimmune interactions. More specifically, he showed us findings on how the neurons in the peripheral nervous system are moderating the immune response in the skin under pathological conditions, such as infections from pathogens.

Despite not being able to gather together in person, the conference was still a resounding success. Our work drew lots of interest from the audience, including our guest speakers. It was especially exciting to see how far the science in all of our projects had progressed during our time on the programme and we felt privileged being able to present our work to some of the greatest minds in the pain field