



Joana Lama
ESR2

My secondment in Universitätsklinikum Würzburg (UKW)

As part of my TOBeATPAIN training, I have completed my secondment at UKW in Germany starting from the 1st of July and ending on the 30th of October. My project was designed by my supervisors (Prof. Uçeyler in UKW and Prof. Duty in KCL) and myself, in virtual meetings held in several intervals during the last two years.

Pain is one of the most common and debilitating non-motor symptoms of Parkinson's disease (PD). Several studies have reported elevated levels of proinflammatory cytokines in the periphery of PD patients [1]. However, none of them has investigated the expression of cytokines and inflammatory mediators in the skin. While inflammation has been involved in the motor aspects of PD, its relation to pain remains unexplored. Elevated expression of inflammatory cytokines in the skin - where nociceptors are present-, could lead to peripheral sensitization and pain [2]. The aim of my secondment was: (i) to investigate the expression of cytokines in skin biopsies and serum of PD patients and its correlation with PD pain and (ii) to assess the correlation of nerve fibre counts and pain in PD.

Skin biopsies and serum from patients with Parkinson's Disease (PD) and healthy controls were collected by the team in UKW and I observed the process to better understand how the material has been obtained. Pain scales and questionnaires were used to characterise the pain of PD patients. After being trained in several new techniques, such as RNA-isolation, cDNA synthesis, q-RT-PCR, ELISA, and nerve fibre density counting, I have analysed the skin biopsies and the serum of PD patients and healthy controls for inflammatory markers of interest. I have also collected material from my in vivo studies and shipped them to UKW, where we processed and analysed them to compare with the clinical data.

During my secondment, I presented in the journal clubs held virtually twice and was followed by fruitful discussions. In my last week, I presented the overview of the collected

data in a meeting, in which I received constructive feedback. The data have been included in the report for Deliverable 2.2 and will be part of a publication we are currently working on.

Overall, I had a great experience during my secondment, Prof. Uçeyler and the team welcomed me and supported me with everything I needed during my time there. On top of that, I have enjoyed my time in Würzburg and had the opportunity to practice my German.

References

1. Qin, X.-Y., et al., *Aberrations in Peripheral Inflammatory Cytokine Levels in Parkinson Disease: A Systematic Review and Meta-analysis*. *JAMA Neurology*, 2016. **73**(11): p. 1316-1324.
2. Schaible, H.-G., A. Ebersberger, and G. Natura, *Update on peripheral mechanisms of pain: beyond prostaglandins and cytokines*. *Arthritis Research & Therapy*, 2011. **13**(2): p. 210.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie Grant Agreement No 764860