

## **STSM: “A systematic review of the genetic susceptibility to ototoxic hearing and tinnitus associated with platinum-based chemotherapy for cancer” – Evangelia Tserga, M.Sc**

### **The aim/purpose of the mission**

The goal of this Short Term Scientific Mission was to achieve expertise and enhance the knowledge on scoping and systematic reviews and to perform in collaboration with the Clinical Hearing Sciences group a systematic review about the genetic susceptibility to ototoxic hearing and tinnitus associated with platinum-based chemotherapy for cancer. This STSM was performed for 2 weeks (16.10.17-27.10.17) under the supervision of Professor David Baguley, in association with Associate Professor Derek Hoare and Professor Deborah Hall.

### **Description of the work during the mission**

The first 3 days of my visit in NIHR Nottingham Biomedical Research Centre and in collaboration with David Baguley’s medical student Tara Nandwani, we specified our research criteria and the keyword methodology and we started going through main databases such as Pubmed, Medline, Embase, etc. In the meantime, I followed really useful lectures, conducted by Professor Deb Hall about Tinnitus mechanisms, pathology and managing but also tutorials and journal clubs about scoping and systematic review methodology and about mechanisms for cisplatin ototoxicity. Next following days and since we came up with a specific amount of research papers that need to be included in our systematic review, we started reviewing one by one these papers and fill in the data extraction form. Till my last day there, we managed to finish the data extraction form and formulate the search strategy following PRISMA guidelines. Moreover, during the second week, I was able to present my own project about animal model of cisplatin ototoxicity to the group and have an interesting and fruitful scientific discussion.

### **Description of the main results obtained**

The main result of my STSM was the design of our research strategy. The keywords that we finally used were the following: **(Gene\* OR genotype OR genetic) AND (tinnitus OR ototoxic\* OR hearing loss OR hearing impairment OR hearing disorder OR cochleotoxicity OR deaf\*) AND (Cisplatin OR cisplatinum OR platamin OR neoplatin OR cismaplat OR cis-diamminedichloridoplatinum\* OR carboplatin OR paraplatin OR oxaliplatin OR (platinum AND chemotherapy)).**

We agreed in specific including and excluding criteria.

Inclusion criteria:

Written in English  
Adults and children  
All study designs

Exclusion criteria:

Review articles  
*In vitro* and *in vivo* studies

We performed the investigation on defined databases such as **Pubmed, Medline, Embase, Scopus, ASSIA and Web of Science** and we identified 1803 records in total. From them, 521 Titles + Abstracts were reviewed and 29 full-text articles were assessed for eligibility. At the end, we decided to include in our systematic review 28 full-text articles.

Next immediate step is the finalization of the tables including the extraction data for the paper and the official registration of our study in PROSPERO, which is the International prospective register of systematic reviews.

**Future collaboration with the Host Institution**

This successful STSM will result in a publication of our systematic review, sharing first co\*authorship with Tara Nandwani. I am in close contact with the Host Institution since we have already decided to run through weekly skype meetings with David and Tara and discuss about the progress of this manuscript. Moreover, both sides have expressed mutual interest for further collaboration in future projects.

**Foreseen publications/articles resulting from a mission**

We are planning on publishing our systematic review study on a high impact factor journal, the **Journal of Clinical Oncology**.