

ESMO Translational Research Fellowship (Oct 2020 – Oct 2021)

Elisabeth Sophie Bergen

FINAL REPORT

Host Institute: Gastroenterology and Gastrointestinal Oncology Department, Georges Pompidou European Hospital, Sorbonne Paris-Cité, Université Paris Descartes, Paris, France

Mentor: Prof. Julien Taieb

Project title: RAS mutations in ctDNA and anti-EGFR reINTROduction in mCRC (RASINTRO)

Home Institute: Medical University of Vienna, Department of Medicine 1, Division of Oncology, Waehringer Guertel 18-20, 1090 Vienna, Austria

Introduction

Several studies suggest a benefit of the reintroduction of anti-EGFRs therapy in patients with metastatic colorectal cancer (mCRC). MCRC patients with RAS-wildtype tumors who developed mutated RAS clones under first-line anti-EGFR treatment will only benefit from anti-EGFR reintroduction if mutated clones will have disappeared from the plasma.

Rationale and Aim

The project RASINTRO evaluates the correlation between the presence of RAS mutations in circulating blood and the efficacy of an anti-EGFR therapy reintroduction in patients with mCRC.

Experimental design

RAS mutations and other mechanisms of resistance will be analysed at different time points (at cycle 1,2,3 and at progression) under therapy and correlated with response to anti-EGFR treatment as well as prognosis.

Results, Conclusions and Future Perspectives

Due to the Covid-situation and related restrictions in the lab, the main pancreatic cancer ('molecular classification of pancreatic cancer by gene expression analysis of circulating tumour DNA') project has been carried on by another

college who is working permanently within the working group. However, I assisted in several steps as DNA extraction of liquid biopsy samples and could therefore gain some important experiences in ctDNA processing.

Instead of the previously planned project, I took over the 'RASINTRO' project, which will now serve as the main project of this fellowship for the next months. With this project, we aim to investigate the impact of RAS mutations as mechanism of resistance under anti-EGFR therapy in colorectal cancer. I performed extraction of all ctDNA samples. NGS is currently being performed for the last remaining samples. We will start with the first analyses in two weeks and plan to write the manuscript within the next months.

List of Publications and Presentations Resulting from the Translational Research Project "RAS mutations in ctDNA and anti-EGFR reINTROduction in mCRC (RASINTRO)"

- Writing of manuscript in progress
- Submission of results planned for ASCO 2022

List of Publications and Presentations resulting from other projects during the fellowship period (if applicable)

- Minioral presentation at ESMO 2021: *'Impact of diabetes and metformin use on recurrence and outcome in early colon cancer (CC) patients: A pooled analysis of 3 adjuvant trials'*
- *'Impact of diabetes and metformin use on recurrence and outcome in early colon cancer (CC) patients: A pooled analysis of 3 adjuvant trials', manuscript submitted to Diabetes Care (IPF 16)*
- *Optimal maintenance strategy in advanced HER2-positive oeso-gastric adenocarcinoma (MAINGAST) – a retrospective, international, multicentric AGEO study, manuscript in progress, submission planned for November 2021*
- *Composite tumor and immune system liquid biomarkers for prognostic assessment of pancreatic cancer – COMPAN study, submitted for a bilateral (French-Austrian) research grant (€430 512,-)*

Selection of Courses and Workshops Attended During the Fellowship

- ESMO advanced course on circulating tumor DNA
- Attendance of 'DIU Cancérologie digestive' Paris

Personal Statement (not mandatory)

This ESMO research fellowship was a great opportunity to broaden my expertise in digestive malignancies at a highly specified centre of digestive oncology. Within the fellowship I attended consultations with different physicians, had the possibility to see patients myself and to discuss treatment decisions together. I participated in weekly tumorboards and worked at the clinical ward of the unit.

With the support and mentoring of Julien Taieb, Pierre Laurent-Puig and Aziz Zaanani I worked out several translational and clinical research projects covering different digestive tumor entities. I gained insight of ctDNA processing as well as interpreting relating results. We were able to build up a French-Austrian research cooperation with future projects planned.

Additionally, the friendly and supporting atmosphere in the unit made this experience unique and unforgettable to me. I would highly recommend a fellowship at this institution to every young ambitious GI-oncologist.

SIGNATURES

Award Recipient full name	Signature and Date
Elisabeth Sophie Bergen	24.09.2021

Research Mentor full name	Signature and Date
Julien Taieb	24.09.2021

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