

Immuno-Genomic Characterization of Oesophageal Adenocarcinoma in the Era of Immune Checkpoint Inhibitors

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EMI industry partner - AstraZeneca

Clinical outcomes for patients with oesophageal adenocarcinoma (OAC) are poor and half of patients receiving curative treatment relapse within 12 months. Survival of patients with advanced disease is approximately 1 year. Immune checkpoint inhibitors (CPI) have reshaped the natural history of cancer and OAC patients are good candidates to receive these drugs. Jointly funded through the EMI programme by AstraZeneca and NIHR Cambridge Biomedical Research Centre, Dr Constanza (Coni) Linossi's PhD studentship aimed to provide a comprehensive overview of the immune-genomic landscape of locally advanced and metastatic OAC. In addition, Coni's research aimed to characterise predictive biomarkers for CPIs and stratify patient selection for their use.

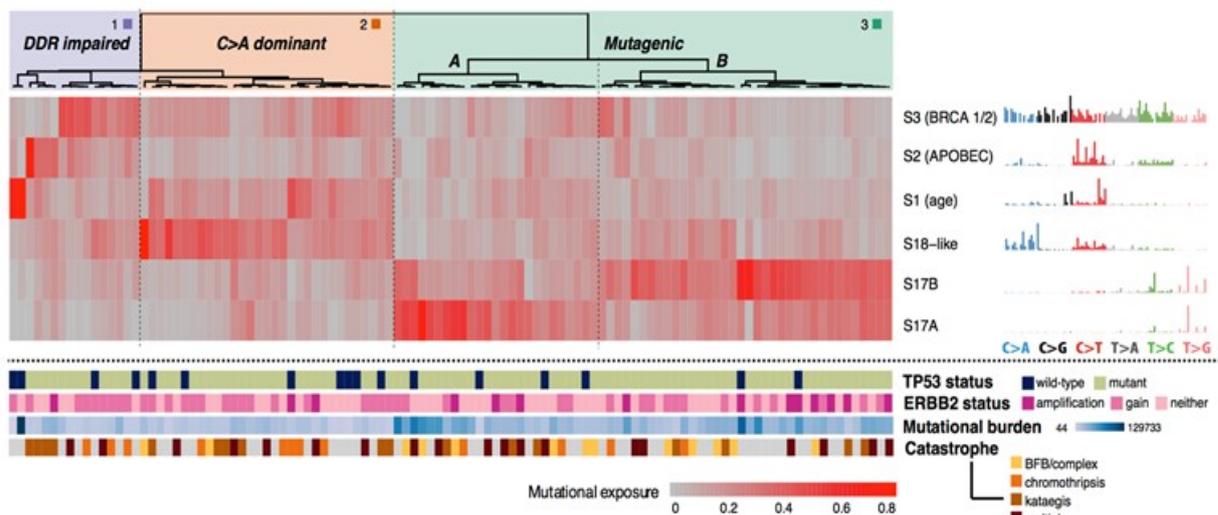


Figure - Oesophageal adenocarcinomas are molecularly heterogeneous and good candidates for immunotherapy

Industry partner AstraZeneca provided critical support and knowledge in the execution of Coni's research study. Commenting on the advantages of working with an industry partner, Coni said:

"Interactions with my industry supervisor were key to my work. Part of my project was heavily based in multiplex immunohistochemistry and my supervisor made sure I had the training and technical resources needed to stain and digitally analyse hundreds of tissue slides. I was given access to cutting edge technology and had contact with experts who helped me deliver rigorous and robust results."

Coni's collaboration with AstraZeneca experts in drug screening techniques was also instrumental in securing follow-on funding as the next step towards her ambition to become a fully independent investigator. Dr Simon Dovedi was the AstraZeneca research supervisor and acknowledged the importance of multi-disciplinary collaboration in Coni's success:

"The EMI programme offers a unique opportunity to develop impactful collaborations that bridge preclinical research and clinical translation. Coni's project brought together expertise from different areas to facilitate a truly collaborative and impactful research programme involving the MRC Unit at the University of Cambridge, the Cambridge Early Clinical Trials Unit and AstraZeneca R&D. Moreover, the networks developed through this project have provided a strong foundation for exploring additional collaborative opportunities across the groups."

Working directly at the interface between academia, industry and the NHS, Coni's research also provided valuable experience of setting up and running a clinical trial, highlighting the pivotal role of the Cambridge clinical-academic community in maximising trial recruitment and outcomes. Coni was able to apply emerging technologies to study ctDNA as a biomarker for CPI and undertook the integration of biomarker data with translational research trial endpoints in the context of oesophageal cancer. Coni's clinical supervisor, Dr Simon Pacey, further emphasised the importance of multi-disciplinary working:

"Coni's EMI studentship exemplifies the translational research and training opportunities that exist within the Cambridge Biomedical Campus. It has been my pleasure to co-supervise Coni's project with Rebecca Fitzgerald and Simon Dovedi, enabling our teams to work closely together for the first time."

These sentiments were further supported by Coni's academic supervisor at the University of Cambridge, Prof Rebecca Fitzgerald, who reflected on the overarching aim of the collaboration to advance clinical care through the application of translational research:

"This EMI studentship has led to an exciting new 3-way collaboration between my group, Astra Zeneca immune-oncology division and the Cambridge Early Clinical Trials Unit. We have all benefitted from the interaction and it has provided a fantastic training opportunity for Coni. Such initiatives are key to build capacity in the field and for the benefit of patients."