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Firstly, I would like to start off by thanking the Pathological Society for the generous travel bursary and extend my gratitude to Ms Julie Johnstone who was of assistance throughout.

I used the Pathological Society Travel & Conference bursary to attend the 9th National Cancer Research Institute (NCRI) conference in Liverpool, United Kingdom. The first day of NCRI was opened by NCRI chair Dr H. Kumar, who gave the welcome address. The first keynote speaker was unable to attend the conference, however, was replaced by Professor G. Evans from the University of Cambridge. The scope of Prof Evan’s talk was the characteristics of an ‘ideal’ molecular target in cancer. Firstly, the target should be tumour specific, in that normal cells are preserved, secondly should be non-redundant and finally that ideally the target was found across many cancers. Prof Evan used *Myc* as an example of a molecular target that showed promise however did not fulfil the ideal criteria1. *Myc* is a non –redundant protein in many tumour types, however, demonstrated that by inhibiting this protein would cause toxicity in all proliferating tissues1. Prof Evans also touched upon the importance of the tumoural microenvironment and the role this had to play tumoural regression through knockdown of *Myc*. Following this extremely interesting talk was Professor P. Sasieni who gave a very thought provoking talk on cervical cancer. Much media coverage has been given to the vaccination against two of the most common oncogenic human papilloma virus strains (HPV). Prof Sasieni noted that if this approach were adopted then the disease could potentially be eradicated in the developed world my mid-century. However, he elucidated that patients in their sixties more so than patients in their twenties benefited from screening, which fuelled the ongoing debate on whether vaccination against HPV could increase the effectiveness of the conventional pap smear. The final plenary session was given by the Director of the Paterson Institute, Professor R. Marais who focused on the molecular mechanisms of BRAF in melanoma. Approximately 40% of melanoma patients have the oncogenic mutation in BRAF, in turn, these patients benefit the most from targeted therapy such as vemurafenib. Interestingly EGFR up regulation and mutations in other kinases has been demonstrated by Prof. Marais’ group to have resistance to these BRAF targeted therapies.

The first full day of the NCRI programme was opened with two keynote talks on cancer biology, one focusing on clonality of tumours and heterogeneity (Professor C. Swanton) and the other on the role the immune system and the microenvironment in cancer therapies (Professor L. Coussens). Interestingly the concept of clonal heterogeneity of tumours is not a new concept in medicine2, merely an additional parameter to consider in both i) whether a biopsy is representative of the complete landscape of the tumour and ii) the implications this clonality and heterogeneity has on therapeutic outcomes. The talk on the role of the immune system in cancer therapy emphasised discussion on the emergence of this market at ASCO, that the immunotherapy market will be the leading cancer treatment market within the next 20 years. Professor Coussens also discussed an ongoing clinical trial in the USA she is involved with looking at PLX3357 in metastatic breast cancer. The rest of the day branched off into topic specific tracks.

Before the beginning of these tracks I presented a poster on my ongoing research in metastatic colorectal cancer within Queen’s University Belfast. Following my presentation I attended a symposia debating “*continued development of therapies targeting oncogenic drivers is the biggest research priority in cancer medicine*” both speakers put across extremely thought provoking points, for the importance of clonality and the importance of targeting single oncogenic drivers. However, eventually the audience voted against the motion. The next session was a proffered paper session, which was a series of 15 minutes abstract presentations discussing ongoing research, I attended the clinical trials track. The final poster session of the day closed the symposia, which was followed by a networking reception and a plenary lecture by Professor Sir B. Ponder.

The first event of day 2 of NCRI which I attended was Clinical Trials showcase Part I, which was chaired by Professor M. Seymour. Two clinical trials were presented i) EPOC study which is a randomised clinical trial of chemotherapy compared to cetuximab in combination with chemotherapy in KRAS wildtype patients with operable metastases from colorectal cancer and ii) a multicentre phase III randomised double blind placebo controlled trial of pravastatin added to first line standard chemotherapy in patients with small cell lung cancer. Both of these presentations were extremely interesting and though provoking. The showcase was followed by a plenary lecture given by Professor S. West on “Defective DNA strand break repair, genome instability and cancer”, this was echoed some points made by Professor C. Swanton the previous day in regards to instability in cancer3. Another poster session followed the plenary talk which contained a lot of interesting material in regards to molecular alterations in cancer and how they are being targeted. An interesting poster and scheme currently being rolled out by CRUK is ‘Click-to-Cure’, a public engagement in research4-5. Following this session I attended a symposia “*we need to talk about clonal diversity*”, which was completely full before the talk commenced. A real highlight of the symposia, and indeed the NCRI conference was Dr F. Markowetz’s, University of Cambridge, talk on heterogeneity in ovarian cancer using a machine learning and statistical approach6. Dr R. Gillies from Moffitt Cancer Centre, FL, USA discussed the application of MRI and PETCT in measuring heterogeneity and discovering textural features that are commonly described by radiologists and linking them to cancer outcomes7. After the lunchtime poster session I attended the “Diagnosis and therapy” proffered paper session, followed by a workshop on “improving the design and reporting of studies on early diagnosis across all cancer types”. The final poster session followed this workshop.

The final day of the NCRI conference was opened by R.S Morrison from Mount Sinai, NY who discussed the case for palliative medicine and improving cancer care. The final parallel session of the conference I attended was Cancer Immunology and Immunotherapy which I felt was most interesting given the content of previous keynote talks, proffered paper sessions, symposia and current literature8-9. Coming away from this session I feel immunotherapy will indeed have an integral role to play in the treatment of cancer in the coming years.

Once again I would like to express my sincere gratitude to the Pathological Society and Ms Julie Johnstone for providing me with the opportunity to continue my professional development by attending national and international conferences with the help of the travel bursary.

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