Molecular mechanisms of targeted cancer treatments and cancer immunotherapy

Tuesday 3^{rd} December 2024

Overview:

Dr Elaine Vickers will guide you through the scientific concepts that underpin many of the most used targeted cancer treatments and immunotherapies for solid tumours.

Treatments discussed include those that target cell communication pathways (e.g. EGFR and HER2-targeted treatments) and immune checkpoint inhibitors. Elaine also describes various molecular features of cancer that underpin many other new treatments.

Morning: Beginning with the bigger picture – what we can and can't target – Elaine describes the mechanisms of action of the two main types of treatment: monoclonal antibodies that target cell surface proteins, and small molecules that block kinases. Many of these treatments target overactive, growth factor-controlled signalling pathways. She will also describe recent progress in the creation of antibody-drug conjugates.

Afternoon: This afternoon Dr Vickers will focus much of her attention on the checkpoint inhibitor group of immunotherapies, which include PD-1, PD-L1, and CTLA-4 targeted antibody therapies. She describes how checkpoint inhibitors boost cancer-fighting T cells. She also highlights some of the lessons learned through the hundreds of clinical trials with checkpoint inhibitors that have taken place over the past decade. Dr Vickers will also explain other technologies, such as CAR T cell therapy, vaccine-based treatments, and T cell engagers.

Audience:

This popular event is ideal for experienced cancer nurses, pharmacists and those involved in cancer trials and the delivery of cancer care.

Cost: £150 per delegate to attend in person (£140 to attend virtually)

Register: conferenceteam@rmh.nhs.uk 020 7808 2921



Programme

| 9.00 | COFFEE AND REGISTRATION |
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| 9.30 | Welcome and Introductions |
| 9.35 | Session 1—Targeted Cancer Treatments – the current landscape Hallmarks of cancer cells – which can we target? The pros and cons of small molecule kinase inhibitors and monoclonal antibodies |
| 10.15 | Session 2—Targeting Cell Communication Pathways Targeting growth factor receptors: EGFR, HER2, MET, RET, ALK, ROS1, TRKA/B/C Targeting intracellular signalling proteins: B-Raf, MEK, PI3K, mTOR, K-Ras |
| 11.00 | COFFEE BREAK |
| 11.20 | Session 3—Other Targets and Treatments Antibody-drug conjugates Angiogenesis inhibitors PARP inhibitors CDK inhibitors When is a targeted therapy or immunotherapy more likely to work? |
| 12.30 | LUNCH BREAK/SPONSOR EXHIBITION |
| 13.30 | Session 4—Cancer's Relationship with the Immune System A brief introduction to the immune system How cancer's relationship with the immune system changes over time How the immune system recognises and reacts to the presence of cancer Mechanisms of immune-evasion by cancer cells Introduction to immunotherapy Why immunotherapy sometimes does work and sometimes doesn't |
| 14.15 | Session 5—Immunotherapy with Checkpoint Inhibitors Introduction to T cells and checkpoint proteins Mechanism of action of checkpoint inhibitors Spot the difference: CTLA-4 and PD-1/P-L1 targeted checkpoint inhibitors Examples of results and lessons learned from clinical trials |
| 15.00 | COFFEE BREAK |
| 15.20 | Session 6 —Cancer Treatment Vaccines, CAR-T Cell Therapy, and TCR-Engineered T Cells Cancer vaccines: peptide, mRNA, DNA, dendritic cell, oncolytic viruses CAR T cell therapy for solid tumours, are we making progress? Other options: TCR-engineered T cells and T cell engagers |
| 16.15 | QUESTIONS & CLOSE |

