

An Introduction to Systemic Cancer Treatments and Cancer Biomarkers

Friday 12th July 2024

Overview:

This course is designed specifically for those new to cancer, or those wishing to refresh their knowledge. In the morning, Dr Vickers explains the science behind a wide range of systemic cancer treatments. In the afternoon, she describes what biomarkers are, where they're found, how they're detected, and what they're used for. Elaine's goal is to explain the science in an interesting and accessible way, providing learners with a broad understanding that they can build on in future.

Morning: Dr Vickers provides an overview of the mechanisms of action of chemotherapy, hormone therapy, targeted therapy and immunotherapy. Content includes: antibodies and kinase inhibitors that target signalling pathways, antibody-drug conjugates, checkpoint inhibitors, and CAR T cells.

Afternoon: Elaine introduces biomarkers. She first describes what biomarkers are, where we find them, and what they can be used for. She'll also give examples of when biomarkers are being used to select treatments for patients and explain why we're not using more of them. Lastly, Elaine looks at how biomarkers fit into a vision of 'precision medicine' – an ideal in which each patient is treated based on an in-depth knowledge of the characteristics of their cancer. Topics include histopathology and genetic analysis, so-called 'virtual biopsies', and how biomarkers can give both prognostic and predictive information.

Audience:

This course is ideal for nurses who are new to caring for cancer patients or who wish to refresh and expand their knowledge. This course is also suitable for anyone involved in cancer research and trials.

Cost: £150 to attend in-person,
or £140 to attend virtually

Register:
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9.30 **Welcome and Introductions**

9.35 **Session 1 – Chemotherapy and hormone therapies**

Part 1

- What is chemotherapy and where do the drugs come from?
- How does chemotherapy work?
- Why so many different drugs, and why are they often given in combinations?
- Who is it given to, and why is it given in cycles?

Part 2

- How does hormone therapy work?
- Who is it given to, and why are people often taking it for years?

10.15 **Session 2 – Targeted therapies**

- What does the term ‘targeted therapy’ actually mean?
- What do these drugs target?
- Introducing monoclonal antibodies, kinase inhibitors & other small molecules
- Who are they given to, and why aren’t they given to everyone?
- Why don’t they always work, and why do people’s cancers come back?

11.00 **COFFEE BREAK**

11.20 **Session 3 – Immunotherapy**

- What is immunotherapy?
- How can our immune system destroy cancer cells?
- How do immunotherapies work, and why don’t they work for everyone?
- Are immunotherapies for solid tumours and blood cancers the same?
- How far have we got ?

12.30 **LUNCH**

13.30 **Session 4 – Introduction to biomarkers**

- What does the term ‘biomarker’ mean, and what are they used for?
- Where do we find them? (e.g. biopsies, aspirates, blood samples)
- What testing methods and measurements do we use? (e.g. genetic testing, immunohistochemistry, whole genome sequencing, commercial platforms)

14.15 **Session 5 – Using biomarkers to select a patient’s treatment**

Some examples:

- Breast cancer: testing for hormone receptors and *HER2* amplification
- Non-small cell lung cancer: PD-L1, *EGFR*, *ALK*, *ROS1*, *RET*, *MET*, other mutations
- Malignant melanoma: testing for *BRAF* mutations
- Bowel cancer: testing for defective DNA repair, *RAS* and *BRAF* mutations
- What about everyone else?

15.00 **COFFEE BREAK**

15.20 **Session 6 – Where have we got to and where are we heading?**

- What matters more – a mutation, a protein, or the immune system?
- The desire to use biomarkers vs. providing a treatment for everyone
- The case for imprecision medicine
- The reality of precision medicine trials – are we really improving things?
- Conclusions

16.15 **QUESTIONS & CLOSE**