NHS
Wessex
Cancer Alliance

Immunotherapy

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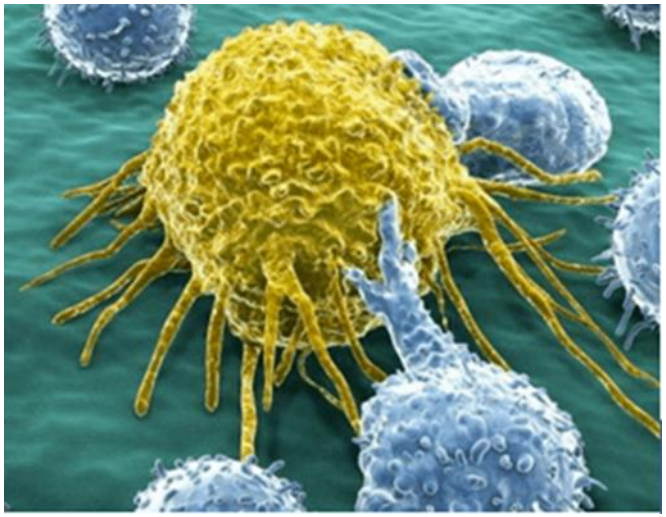
Immunotherapy

- One of the newest waves of cancer treatment
- Still fairly limited use – but increasing all the time
- Different side effects
- Long term effects still not fully understood



Unleashing the power of the immune system to defeat cancer

Immunotherapy — a medical treatment that mobilizes the body's own natural defense system to fight diseases — is revolutionizing the way we treat cancer. There are several different immunotherapy approaches that treat a variety of cancers. Some are approved for use; others are being tested in clinical trials.

FIVE TYPES OF CANCER IMMUNOTHERAPY

Cellular therapy

The transfer of human cells to replace diseased cells with healthy, functional ones. Stem cell transplant and chimeric antigen receptor (CAR) T-cell therapy are examples of cellular therapies.

Immunomodulators

Medications that regulate and boost parts of the immune system. Checkpoint inhibitors and cytokines are immunomodulators.

Oncolytic virus therapy

Lab-modified viruses that infect and kill cancer cells without harming normal cells. Some of the viruses are found in nature, while others are modified in a lab.

Monoclonal antibodies

Man-made proteins that attack a specific part of a cancer cell. Some monoclonal antibodies are described as targeted therapies.

Cancer treatment vaccines

Medicines that train the immune system to recognize and destroy cancer cells. Unlike cancer prevention vaccines, these are designed for people who already have cancer.

From understanding how the immune system works at the molecular level to clinical trials testing the newest and most promising immunotherapies, UChicago Medicine research scientists and physicians are helping shape the future of cancer immunotherapy.

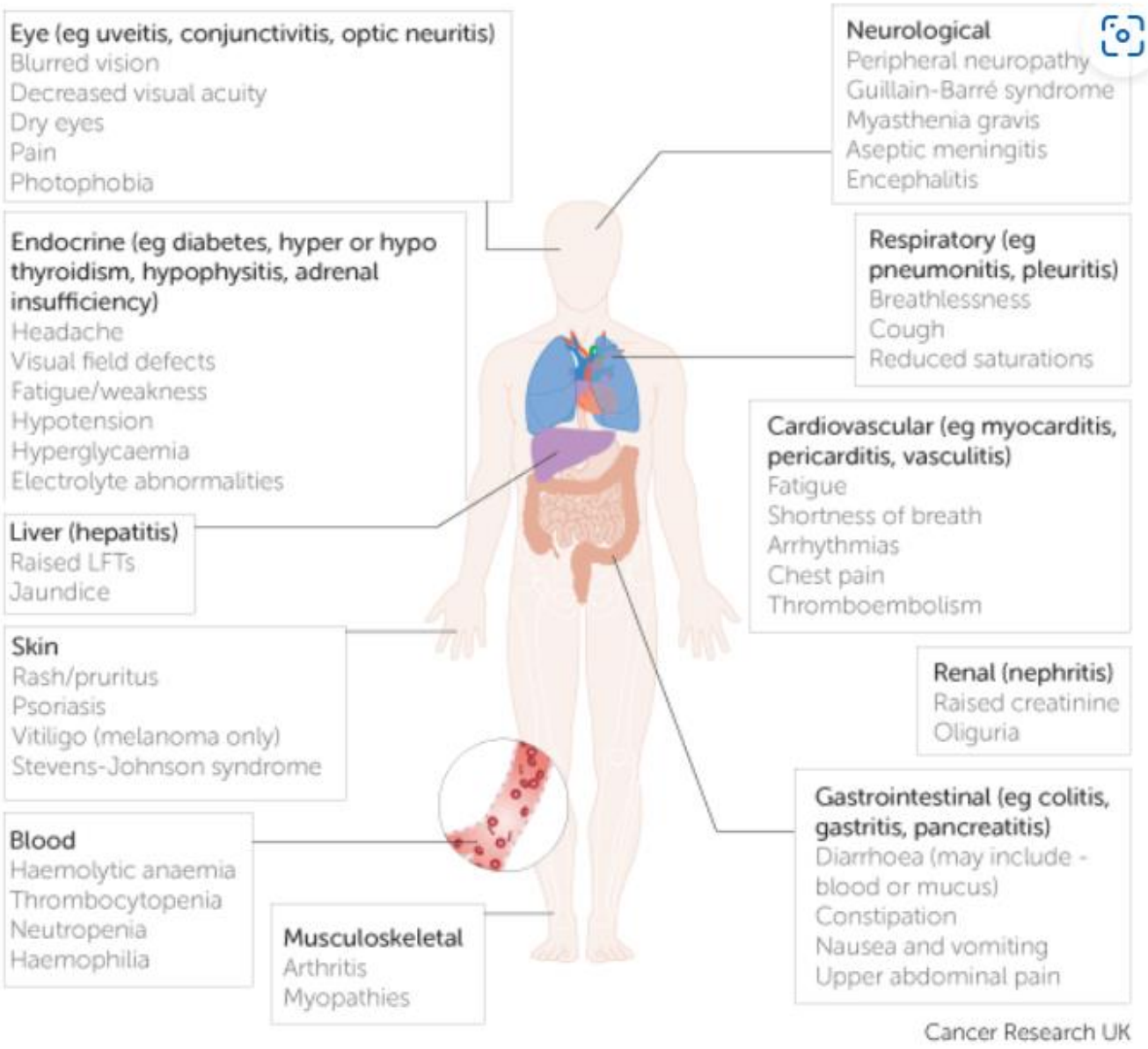
AT THE FOREFRONT
UChicago Medicine

Examples of checkpoint inhibitors currently in use on the NHS (excluding those used in trials)

Ipilimumab (Yervoy) - targets CTLA-4	• Unresectable or metastatic melanoma
Nivolumab (Opdivo) - targets PD-1	• Unresectable or metastatic melanoma • Adjuvant treatment for resected melanoma with lymph node involvement or metastatic disease • Adjuvant treatment for resected oesophageal or gastro-oesophageal junction cancer • Adjuvant treatment for muscle-invasive urothelial cancer • Advanced renal cell carcinoma • Relapsed or refractory classical Hodgkin lymphoma • Locally advanced or metastatic non small cell lung cancer (NSCLC) • Recurrent or metastatic squamous cell carcinoma of the head and neck (SCCHN) • Unresectable advanced, recurrent or metastatic oesophageal cancer • Neoadjuvant treatment (with chemotherapy) for resectable NSCLC • Advanced stomach, gastro-oesophageal or oesophageal cancer
Pembrolizumab (Keytruda) - targets PD-1	• Unresectable or metastatic melanoma • Adjuvant treatment for stage 2B, 2C and 3 melanoma • Locally advanced or metastatic NSCLC • Relapsed or refractory classical Hodgkin lymphoma • Adjuvant treatment for renal cell carcinoma • Advanced renal cell carcinoma • Metastatic or unresectable recurrent head and neck squamous cell carcinoma • Metastatic bowel cancer • Neoadjuvant and adjuvant treatment for early or locally advanced triple negative breast cancer • Locally recurrent unresectable or metastatic triple negative breast cancer • Locally advanced unresectable or metastatic oesophageal and gastro-oesophageal junction cancer • Persistent, recurrent or metastatic cervical cancer

Ipilimumab and Nivolumab	• Unresectable or metastatic melanoma • Advanced renal cell carcinoma • Metastatic bowel cancer • Unresectable pleural mesothelioma
Avelumab (Bavencio) - targets PD-L1	• Metastatic Merkel cell carcinoma • Advanced renal cell carcinoma • Locally advanced or metastatic urothelial carcinoma
Atezolizumab (Tecentriq) - targets PD-L1	• Locally advanced or metastatic NSCLC • Adjuvant treatment for stage 2 to 3A NSCLC • Extensive stage small cell lung cancer • Locally advanced or metastatic urothelial carcinoma* • Unresectable hepatocellular carcinoma • Unresectable, locally advanced or metastatic triple negative breast cancer
Cemiplimab (Libtayo) - targets PD-1	• Locally advanced or metastatic cutaneous squamous cell carcinoma • Metastatic NSCLC
Dostarlimab (Jemperli) – targets PD-1	• Advanced or recurrent endometrial cancer
Durvalumab (Imfinzi) - targets PD-L1	• Locally advanced unresectable NSCLC

Examples of immune-related adverse events and some possible symptoms



Implications for patient care

- Misconceptions (Patient and health professionals)
- Visibility of side-effects
- Length of treatment
- Lack of understanding of late onset effects

Key points for GPs and Practice Nurses seeing patients

- Flag all patients having immunotherapy on patient system to highlight risk of side effects during treatment and for at least 12 months after finishing treatment.
- Patients can present with non-specific symptoms so consider blood tests to rule out biochemical-only changes, such as hepatitis, adrenal insufficiency and thyroid dysfunction.
- Initially mild symptoms such as diarrhoea, breathlessness or headaches can rapidly progress into colitis, pneumonitis or encephalitis.
- Contact hospital advice line/oncologist straightaway if concerned your patient may have immunotherapy side effects –they may carry an immunotherapy alert card with details.
- Refer to UKONS Oncology/Haematology Treatment Toxicity Risk Assessment Tool regarding side effects (includes immunotherapy).

Remember - Think possible 'itis' for any patient that is on or has had immunotherapy.

Immunotherapy Late Effects Project

Educating the generalist and specialist workforce in Late Effects in people with cancer treated with immunotherapy across Wessex in Primary Care

The project was funded by HEE SE Cancer and Diagnostics Programme
January to March 2023

READ THE FULL REPORT

This short project centred on education around the late effects of immunotherapies, focusing on primary care and community teams' awareness.

Immunotherapies are relatively new treatments that use the immune system to find and attack cancer cells, with different types of immunotherapy using the immune system in various ways. These treatments have dramatically changed the way cancer is treated and vastly improved outcome for many patients.

The side effects are very different to chemotherapy. Importantly, immunotherapy can cause inflammatory and autoimmune complications that can affect any part of the body. Most side effects occur within 6-9 months but can emerge up to 3 years after treatment. Immune related endocrinopathies affect a small percentage of all patients and immune checkpoint inhibitors have been causatively associated with hypophysitis, hypopituitarism and adrenal insufficiency. Patients may present with non-specific symptoms, resulting in diagnostic challenge as they may resemble other causes such as brain metastasis or underlying disease.

Immunotherapy has transformed the way cancer is treated and is likely to develop further. WCA is committed to enabling PCN staff to stay updated with current knowledge and to empower patients with access to appropriate knowledge, ensuring best practice across Wessex.

The aims of the project were to i). explore a range of perspectives looking at the awareness and confidence of Primary Care Clinicians recognising late side effects of immunotherapies, ii). review the information available and share in an accessible way iii). gain a greater understanding of the information and education required by primary care on late side effects of immunotherapies.

A consultation process was implemented, engaging with a purposeful sample of primary care staff, using a five part methodological approach to gather data:

Further Reading/Useful Resources

For Patients

- What are immunotherapy side effects?
  A detailed guide from the European Society of Medical Oncology
- Adrenal/Pituary insufficiency following cancer immunotherapy- a patient quick reference guide
  A quick guide/checklist from Clatterbridge Cancer Centre.

For GPs and Clinical Staff

Quick Reads

- Managing the side effects of immunotherapy- most common side effects and when to refer to their oncologist (Royal Marsden)
- 10 top tips cancer immunotherapy (Medscape UK)
- Immune related adverse events (A quick guideline sheet, with diagram from Cancer Research UK)
- Immunotherapy side effects- Key points for GPs & practice nurses seeing patients (A quick guideline sheet from CRUK)
- Addressing unmet patient needs through an immunotherapy late effects clinic (A poster presentation from European Society of Medical Oncology)
- Tackling the Adverse Effects of Immunotherapy (Oncology Live)

Webinars

- New Types of Cancer Treatments & Their Effects – a webinar from Gateway C

Medical Journal Articles

Endocrine complications of immunotherapies: a review – Royal College of Physicians

Not just skin deep: monoclonal therapies and pituitary endocrinopathy – The Endocrinologist

Management of Immune-Related Adverse Events in Patients Treated With Immune Checkpoint Inhibitor Therapy: ASCO Guideline Update – Journal of Clinical Oncology – American Society of Clinical Oncology

The side effects of immune checkpoint inhibitor therapy on the endocrine system – Indian Journal of Medical Research

Endocrine dysfunction induced by immune checkpoint inhibitors: Practical recommendations for diagnosis and clinical management – American Cancer Society Journal

Management of Immunotherapy-Related Toxicities, Version 1.2019, NCCN Clinical Practice Guidelines in Oncology – Journal of the National Comprehensive Cancer Network

Resources

- https://www.macmillan.org.uk/healthcare-professionals/news-and-resources/guides/haematology-and-oncology-risk-assessment-tool
- Management of toxicities from immunotherapy, ESMO guidelines https://www.annalsofoncology.org/article/S0923-7534(22)04187-4/fulltext
- https://wessexcanceralliance.nhs.uk/immunotherapy-late-effects-project/