



ADCs, BiTEs, CARs, IOs, -mabs ... Making Sense of the Oncologic ABC Soup

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Faculty Disclosure

- No financial disclosures.



Educational Need/Practice Gap



Rapidly advancing
cancer care

Primary & Hospital
education &
implementation

Objectives

Upon completion of this educational activity, you will be able to:

Recognize new cancer therapeutics

Identify unique adverse effect profiles

Apply the information to better inform interventions and interactions with consulting teams

Expected Outcome

- Greater understanding of advanced care but also how management of patient now truly a multidisciplinary effort that extends outside of the cancer center.

Knowledge check

What is the most recently reported 5 year overall survival rate for all comers with cancer?

- A. 33%
- B. 48%
- C. 53%
- D. 67%

Knowledge check

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5 yr OS

1975 → 48.9%

2023 → 68%

Patient

- Comorbidities
- Age
- Prior treatment
- Performance status
- Beliefs/Attitudes

Preference

- Quality of life
- Toxicity profile

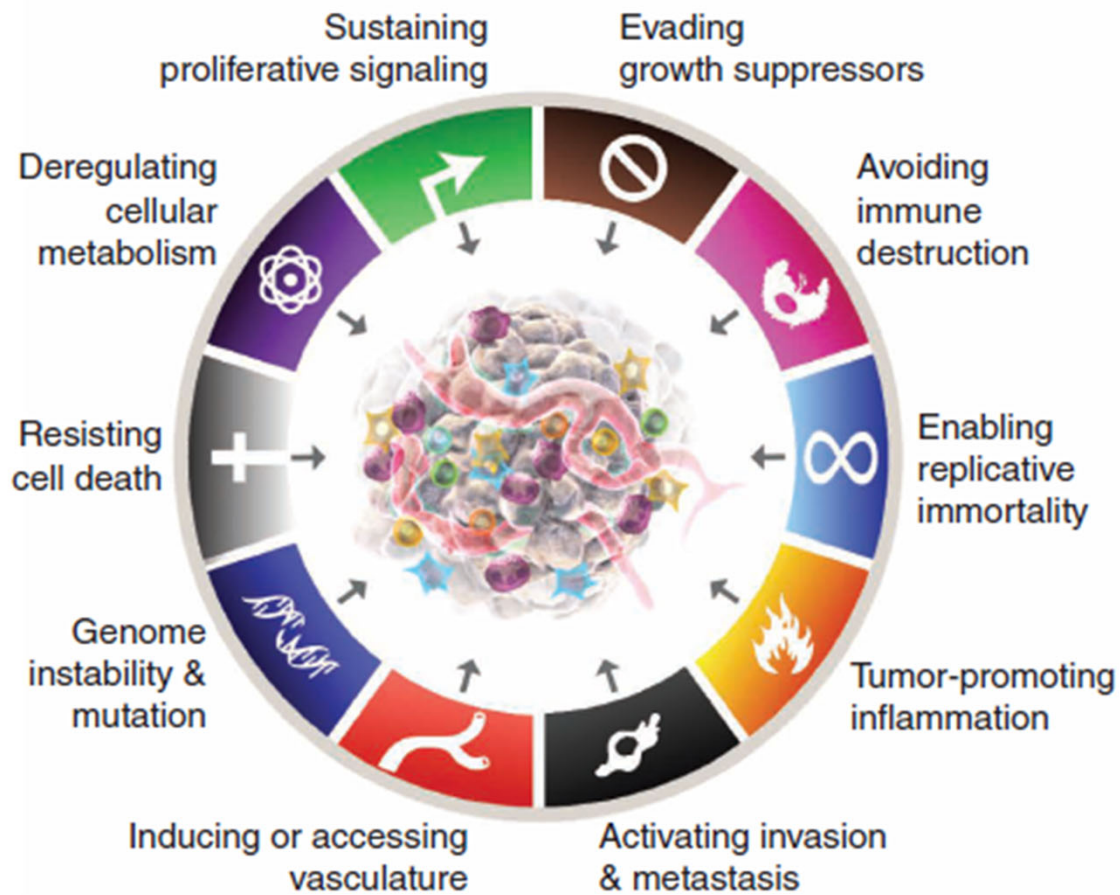
Stage IV Cancer

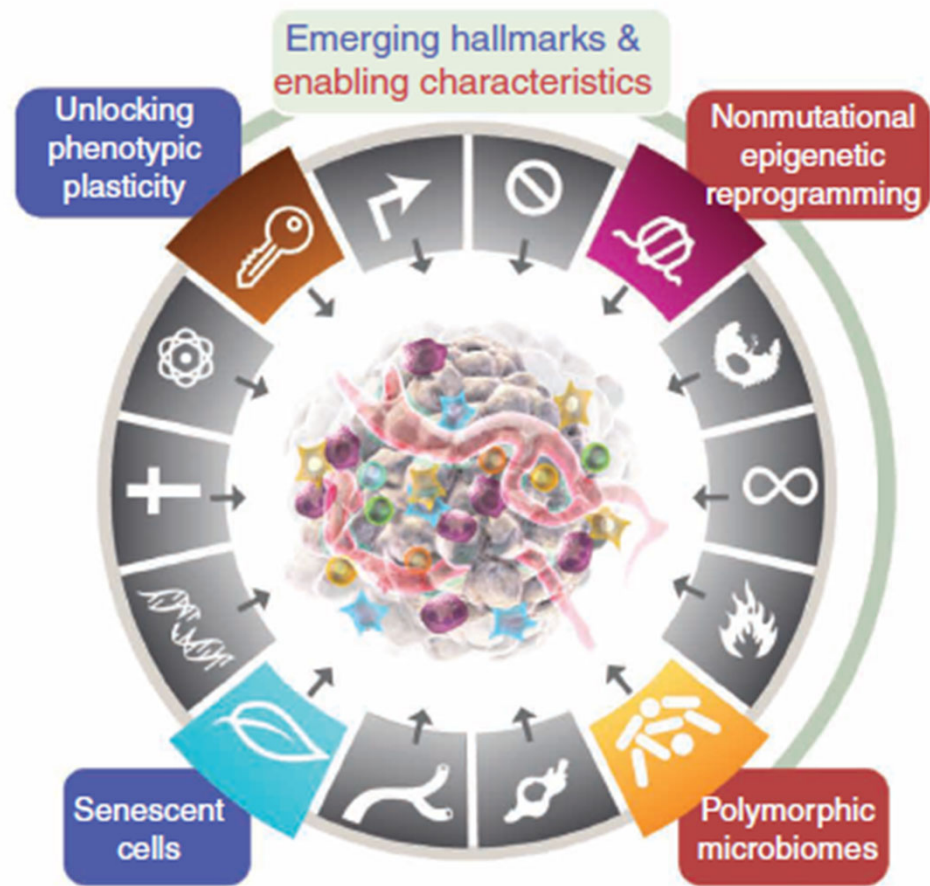
Molecular

- MSI-high
- PD- L1
- Her2
- RAS Wildtype
- Novel molecular signatures

Tumor

- Tumor burden
- Resectability
- Location/side
- Radiation





Hanahan D. Hallmarks of Cancer: New Dimensions. *Cancer Discov.* 2022 Jan;12(1):31-46. doi: 10.1158/2159-8290.CD-21-1059. PMID: 35022204.

Differences Chemo vs Targeted

Chemotherapy

Act on **ALL** rapidly dividing cells
Identified
Cyto**TOXIC**
(relative) poor tolerability
Lower cost
All stages
(relative) quick response
ECOG 0-2

Targeted Therapy

Act on **SPECIFIC** molecular targets
Designed
Cyto**STATIC** vs **Immunogenic**
Small molecules (-ibs)/monoclonal antibodies (-mabs)/CAR-T cells
Tolerability
Financial Toxicity
(mostly) metastatic
(relative) timed response
ECOG 0-3, select patient population

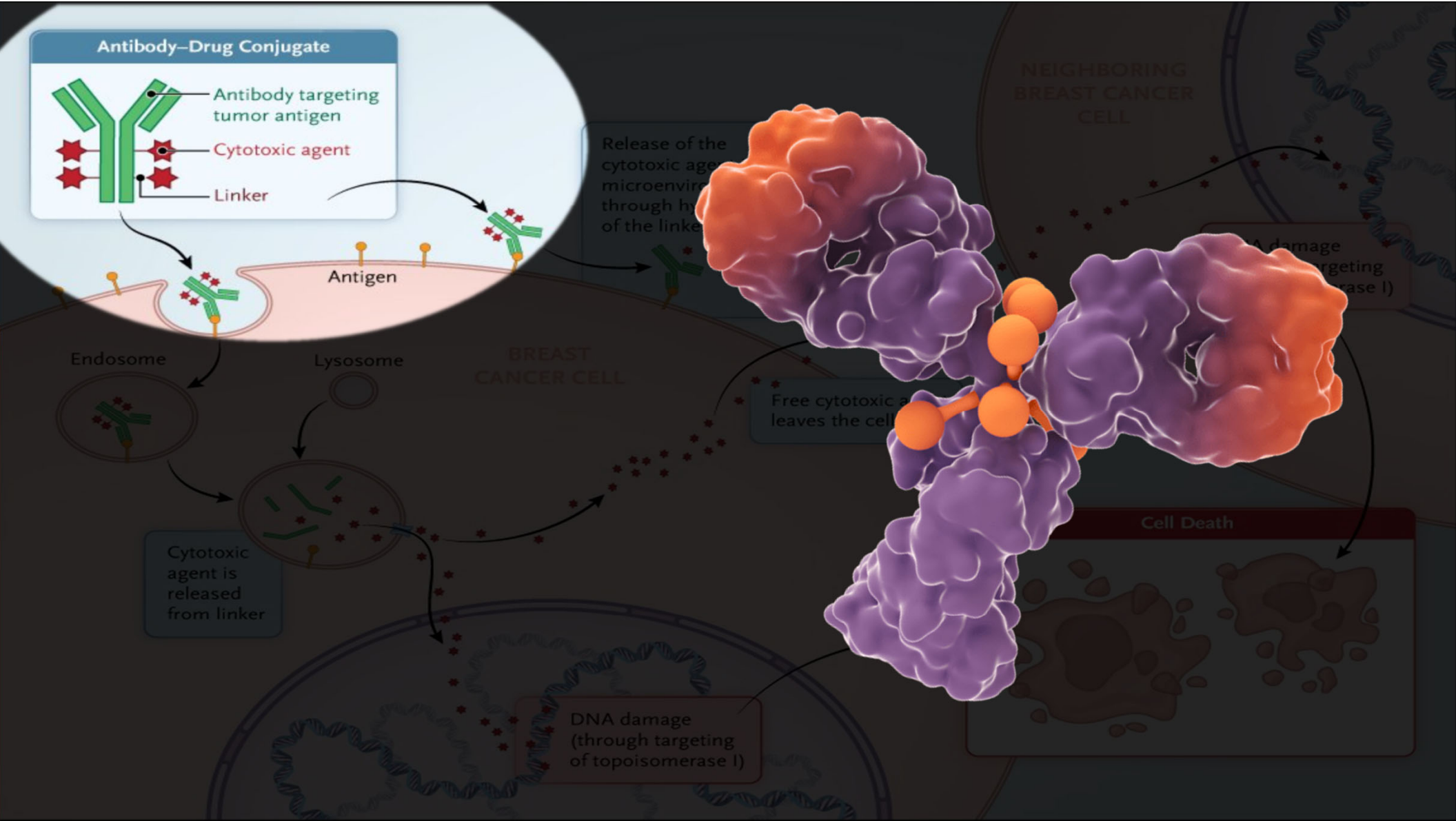
A fluorescence microscopy image of a tissue section. The image shows a complex, interconnected network of structures, likely cells or fibers, stained with two different dyes. One dye emits a bright green fluorescence, highlighting specific regions and structures, while the other emits a blue fluorescence, providing a broader view of the tissue's architecture. The overall appearance is that of a dense, fibrous network with some larger, more distinct structures. The text "ADCs" is overlaid in the center of the image.

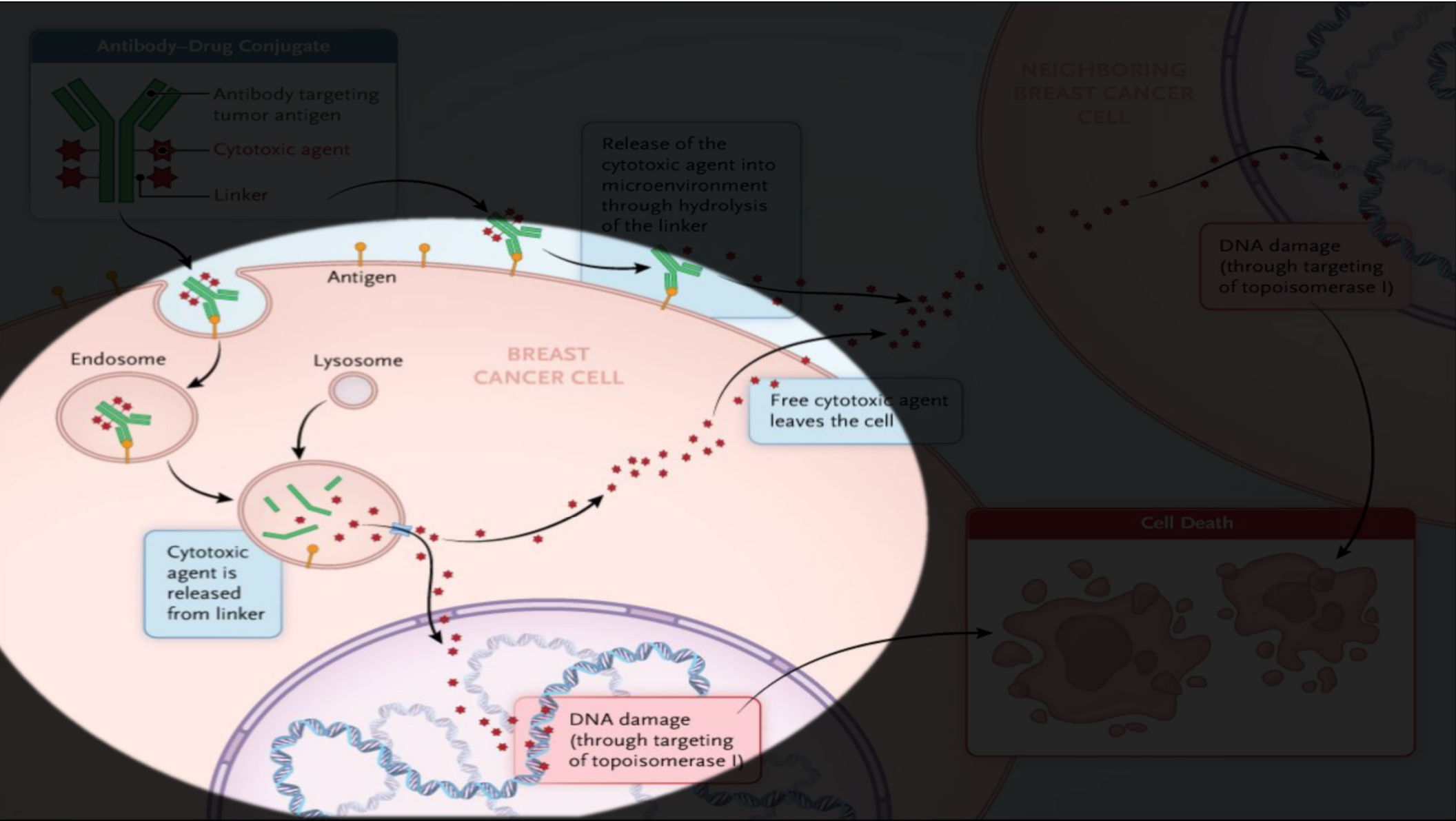
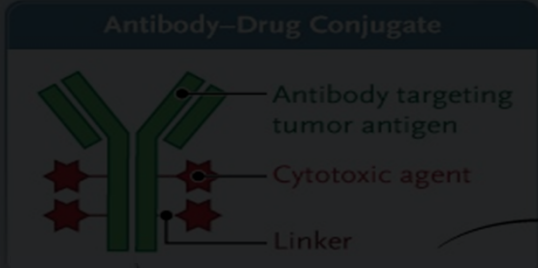
ADCs

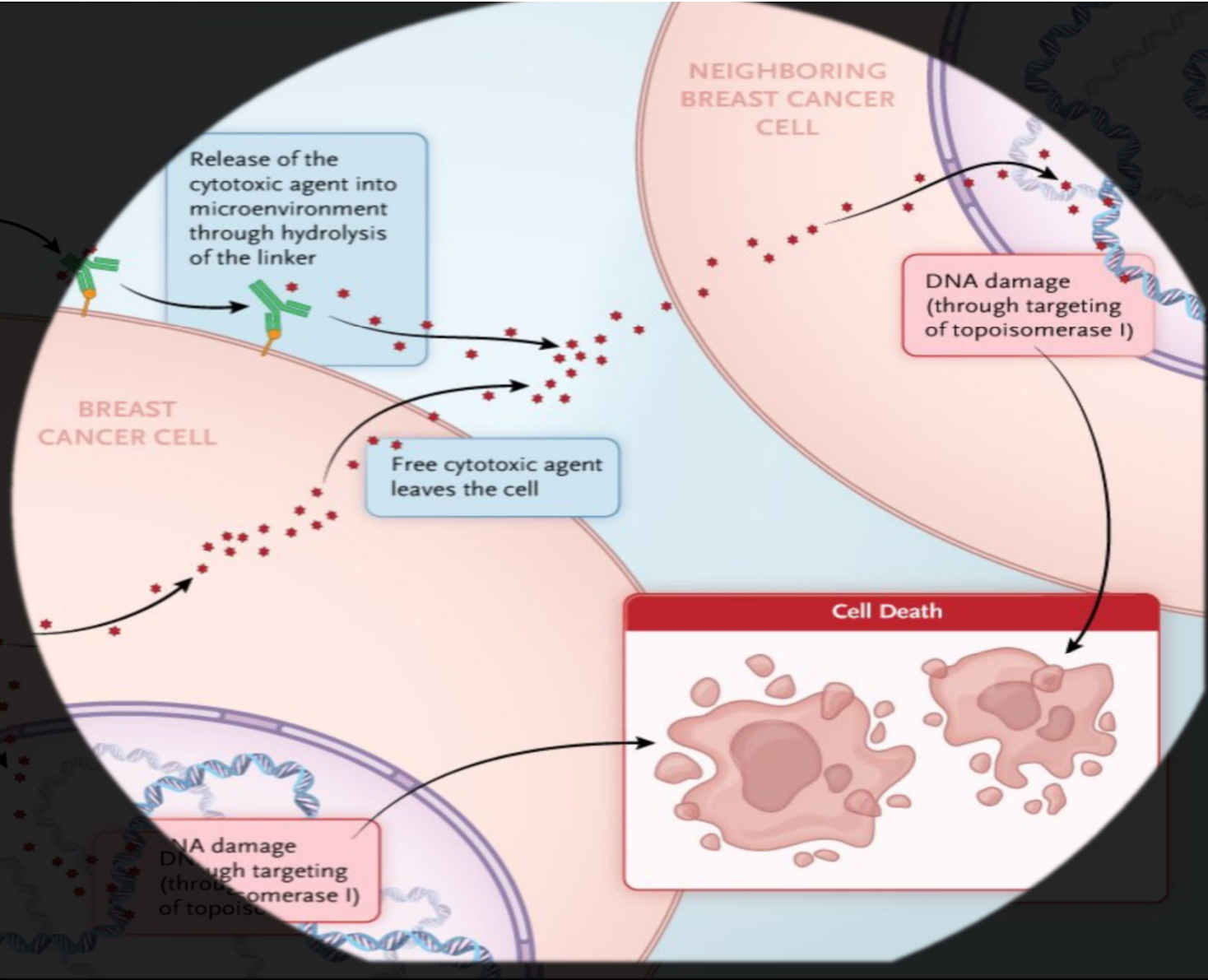
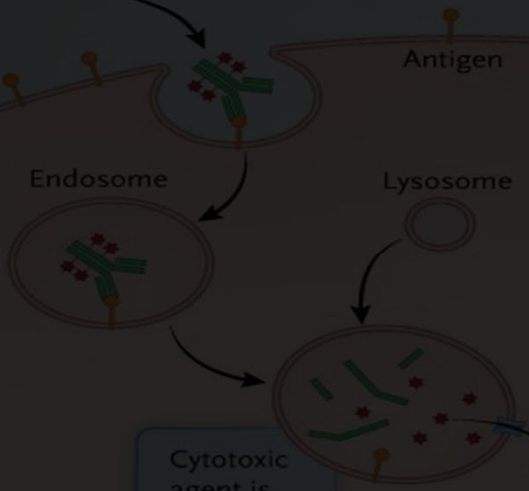
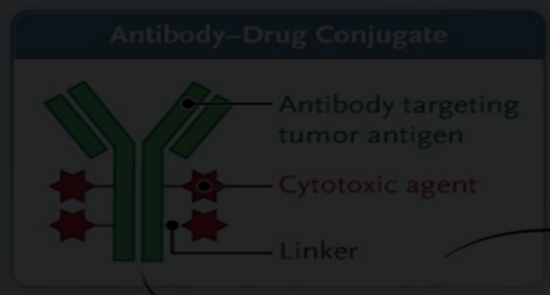
Knowledge Check

A 45 yo female diagnosed with stage IV breast , estrogen/ progrestone (-), Her 2 IHC expression 3+. Two prior lines of therapy have failed. She is currently on trastuzumab-deruxtecan x 5 months. Presents with progressive dyspnea to her primary care team. Notes going up stairs and caring for her children is a task due to this. On exam vitals are normal, lungs with mild crackles, no edema. What is next best test to help with diagnosis?

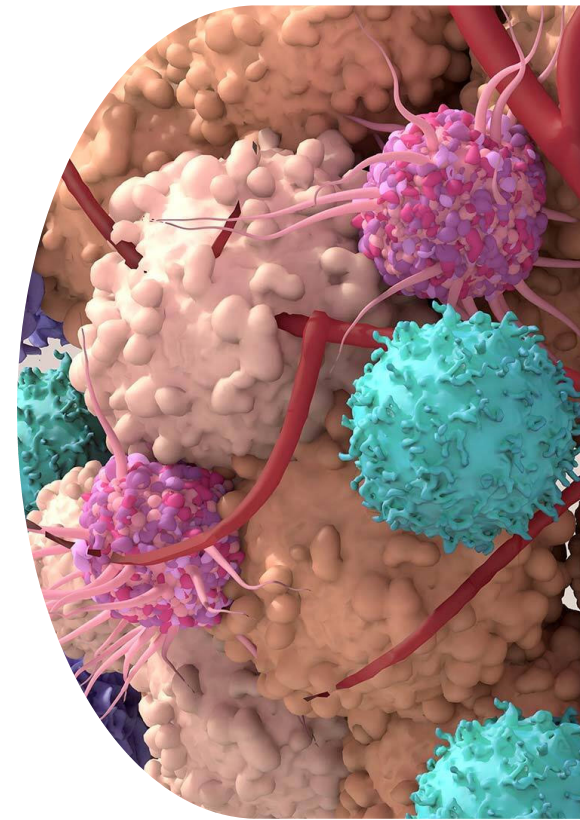
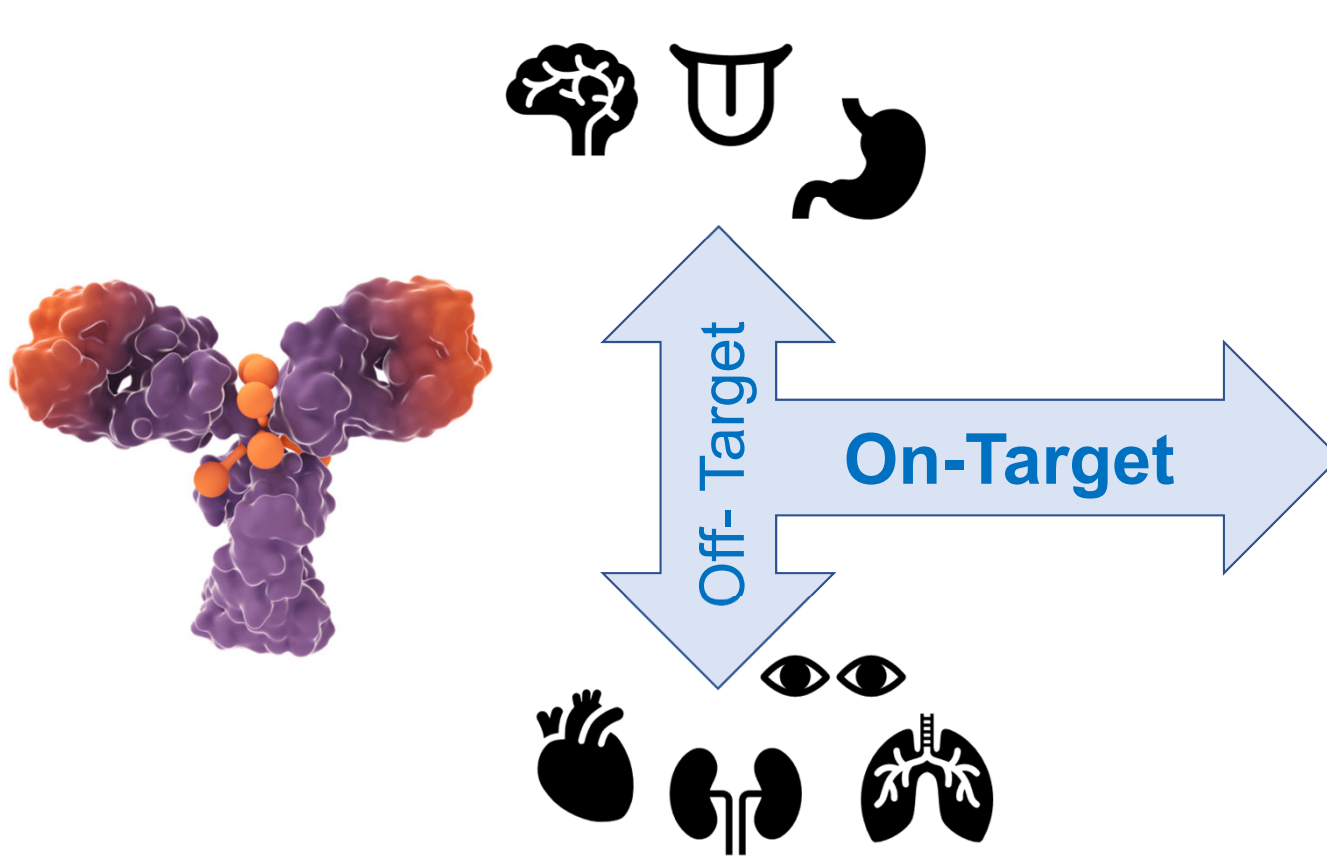
- A. ECHO
- B. PFTs
- C. CT chest
- D. Stress test







On vs Off Target Effects



Knowledge Check

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- A. ECHO
- B. PFTs
- C. CT chest
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A histological micrograph showing a dense population of cells with large, dark, hyperchromatic nuclei and prominent nucleoli. The cells are arranged in a disorganized, infiltrative pattern, characteristic of a malignant neoplasm. The background stroma is fibrous and contains scattered inflammatory cells. The overall appearance is consistent with a high-grade carcinoma. The word "BITEs" is overlaid in white, bold, sans-serif font in the center of the image.

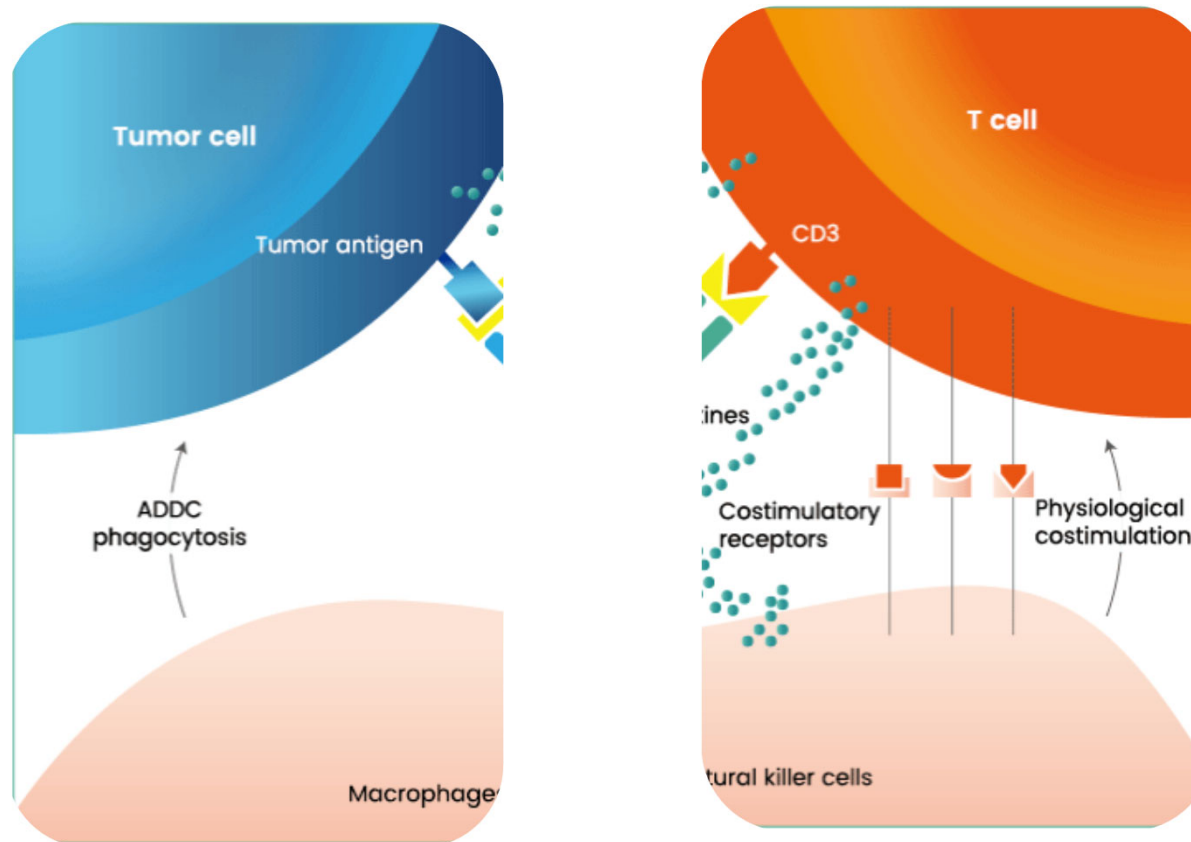
BITEs

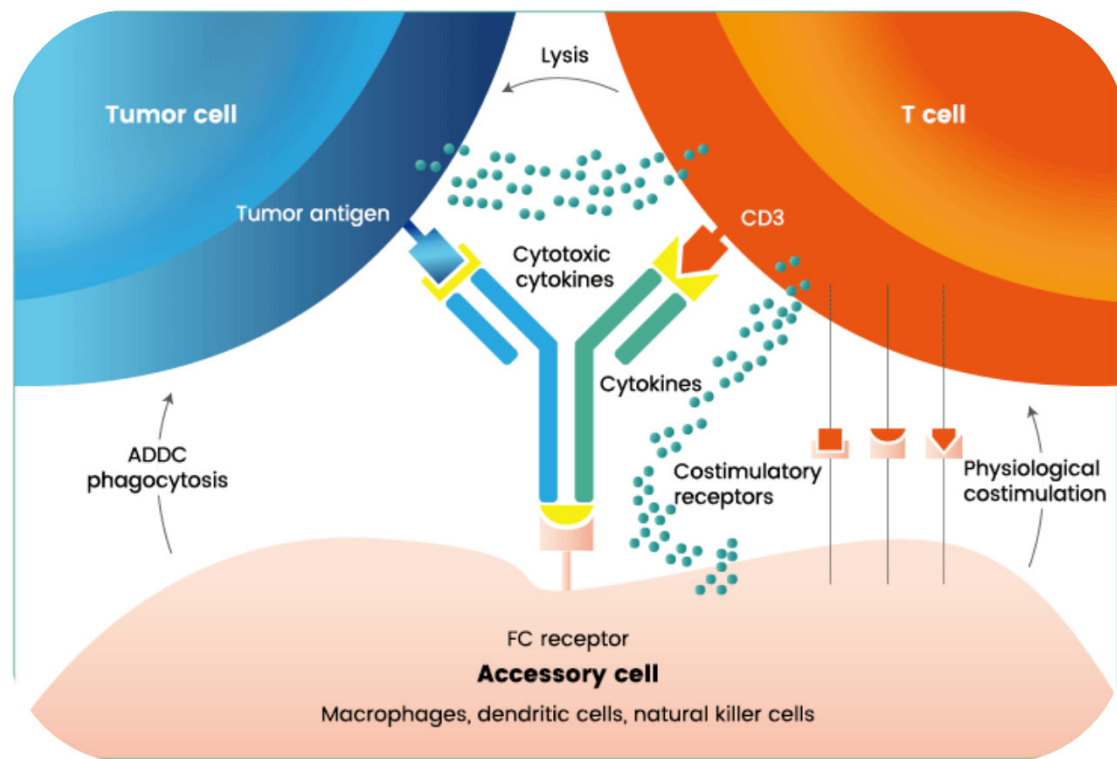
Knowledge Check

A 65-year-old patient with multiple myeloma receiving CAR T-cell therapy begins to exhibit symptoms such as confusion, delirium, and severe headaches. What is the ultimate treatment strategy for managing these symptoms in this patient?

- A. High dose steroids
- B. Anticoagulation therapy
- C. Antiviral medications
- D. Intravenous immunoglobulin

Bispecific T-cell Engagers

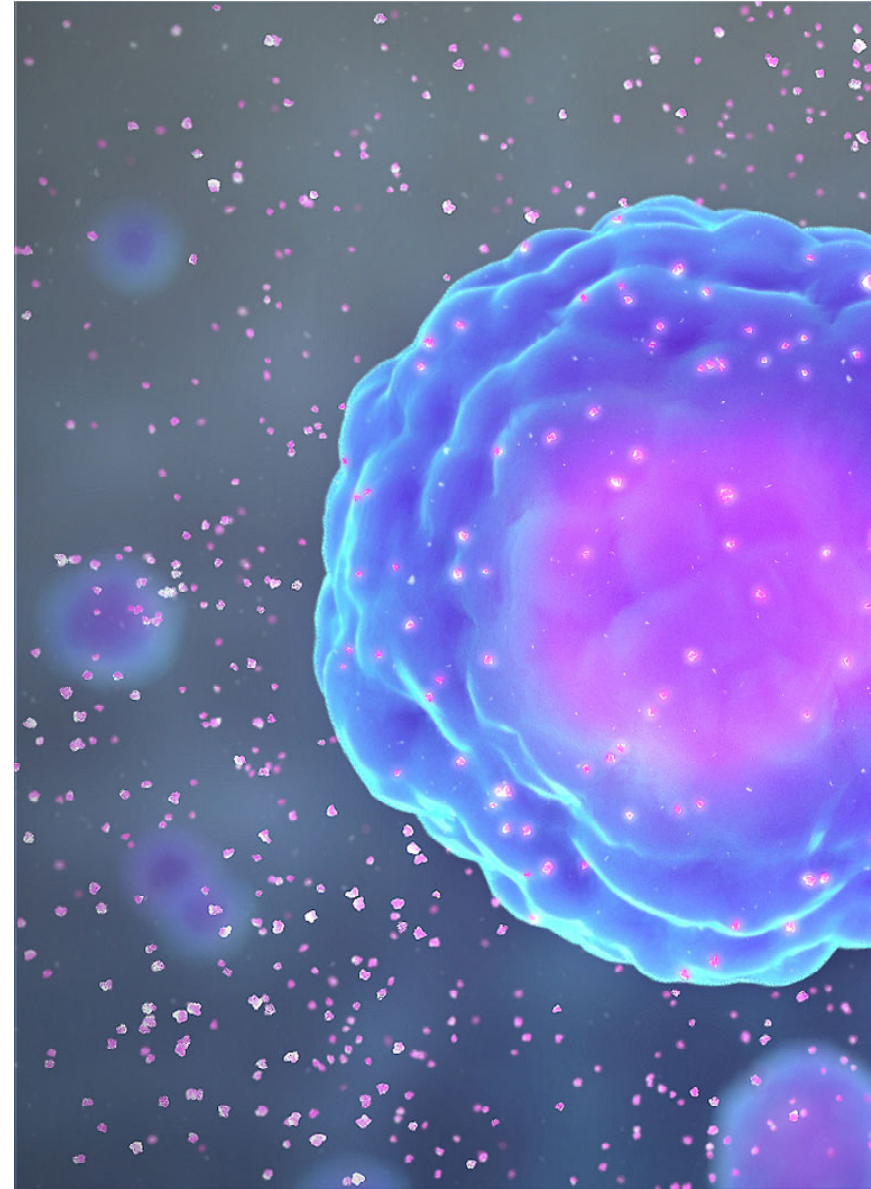




Inflammation Uncontrolled...

Large cytokine release effect nearby
cells

Direct impairment of bone marrow



Knowledge Check

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- A. Call Hem Onc Fellow 1st...High dose steroids
- B. Anticoagulation therapy
- C. Antiviral medications
- D. Intravenous immunoglobulin



CAR T-Cells

Knowledge Check

A 52-year-old patient with diffuse large B-cell lymphoma undergoes CAR T-cell therapy and soon develops symptoms including fever, chills, and hypotension. These symptoms are consistent with Cytokine Release Syndrome (CRS). What is the ultimate treatment strategy for managing CRS in this patient?

- A High-dose corticosteroids
- B Intravenous fluids and antipyretics
- C Antiviral medications
- D Blood transfusions

Knowledge Check

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A High-dose corticosteroids

B Intravenous fluids and antipyretics... but call Hem/Onc fellow ASAP

C Antiviral medications

D Blood transfusions

The background of the slide is a complex, abstract pattern of swirling, organic shapes. The colors are primarily deep blues and vibrant greens, with some lighter, almost white highlights that create a sense of depth and movement. The overall effect is reminiscent of a microscopic view of tissue or a digital data visualization.

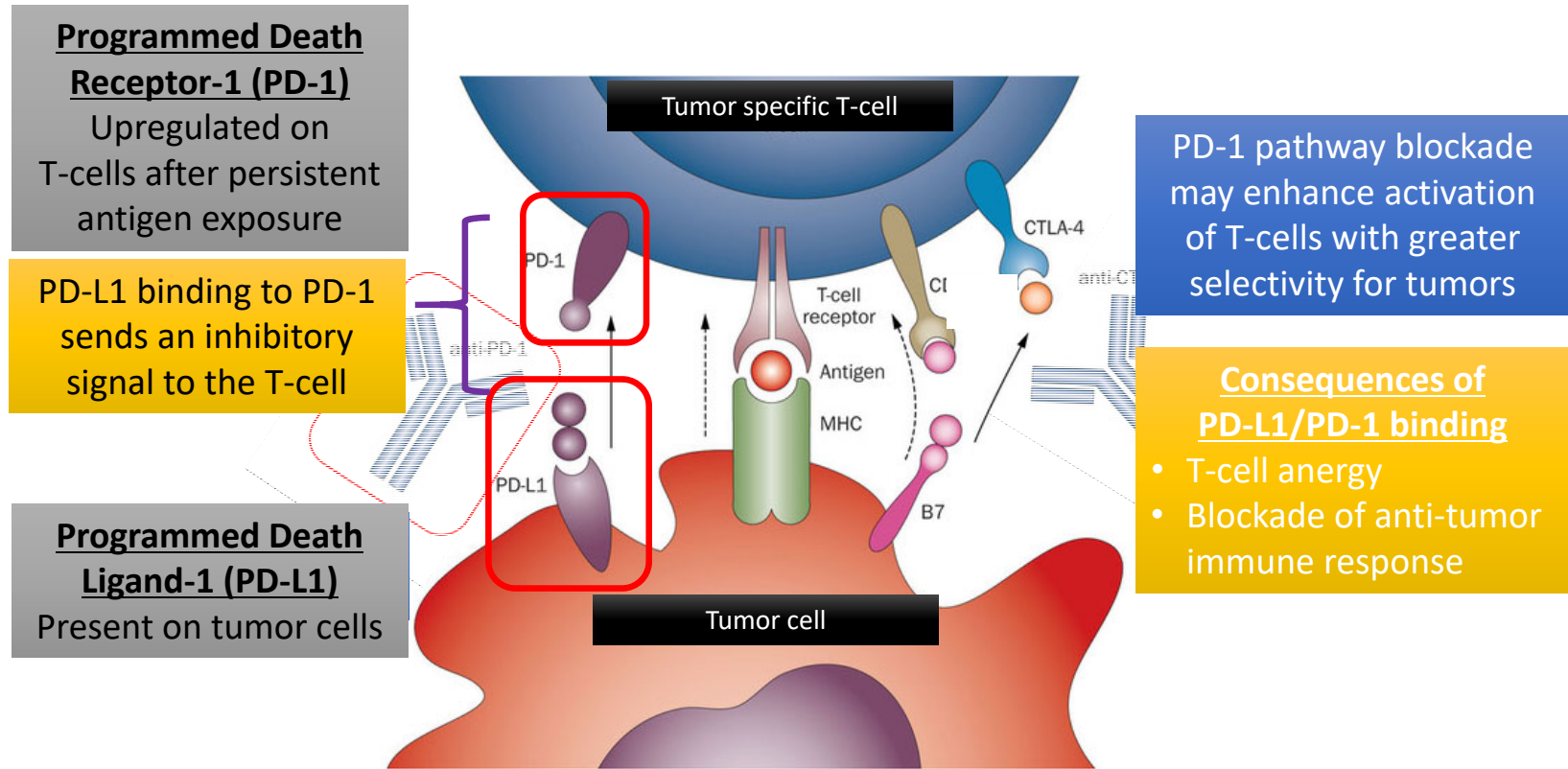
IOs and iRAEs

Knowledge Check

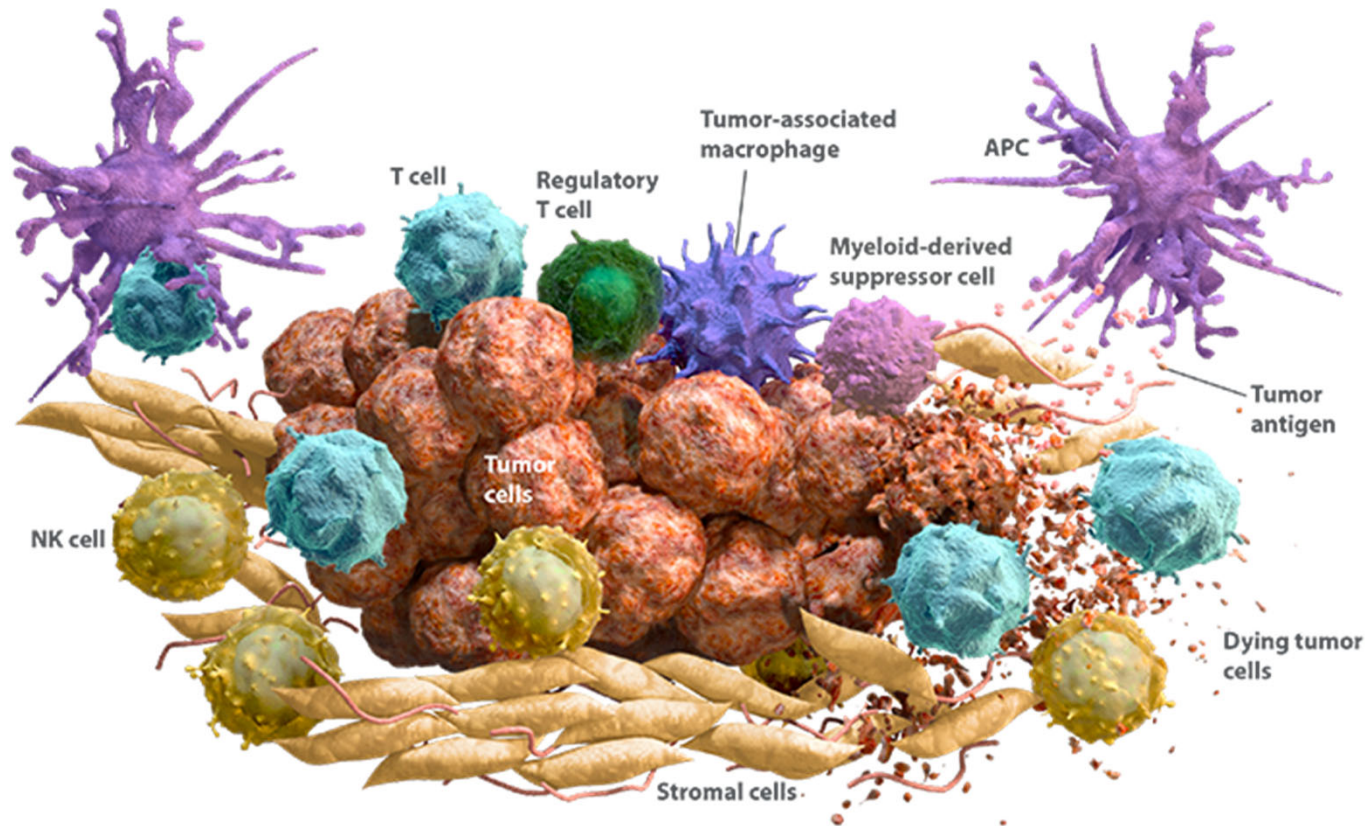
A 64-year-old male received adjuvant treatment with Ipilimumab for his stage III melanoma. He is BRAF Wild Type. His tumor was located in his right shoulder area and he underwent a WLE and SLNB with subsequent lymph node dissection. Two lymph nodes had melanoma (both >1 mm deposits). After his 2nd infusion, he developed diarrhea with 9-10 bowel movements/day. What is the treatment of choice?

- A. Loperamide
- B. Best supportive care
- C. Prednisone
- D. Ciprofloxacin

PD-1 & PDL-1 Inhibition



Immunotherapy in Action



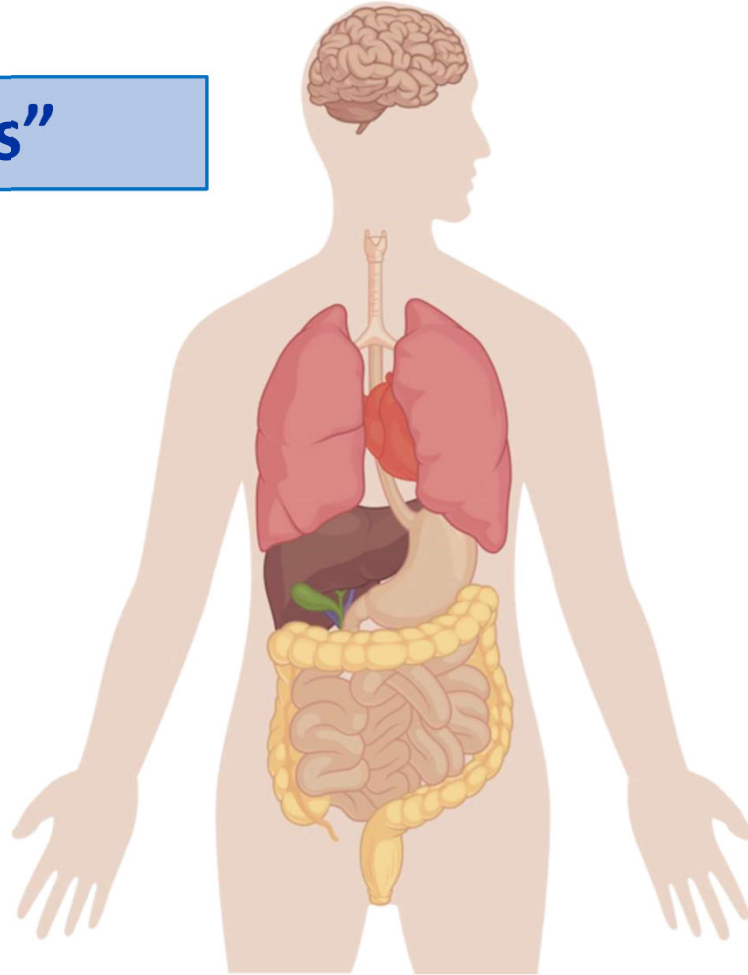
Immune Related Adverse Events (irAEs)

Think “-itis”

Pulmonary:
Pneumonitis

Hepatic:
Hepatitis
Cholangitis

Other:
Fatigue
Appetite loss
Polyarthrititis
Myasthenia Gravis



Endocrine:
Thyroiditis/Hypothyroidism
Hypophysitis
Autoimmune Type 1 Diabetes

Cutaneous:
Rash
Pruritus
Vitiligo

Gastrointestinal:
Mucositis
Diarrhea/Colitis

Thought Process

Step 1: Think like an Internist!

Step 2: Quantify the symptoms

Step 3: Diagnostics

Cultures, Scans, Procedures

Step 4: Consult Oncology

Step 5: Steroids



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Financial Toxicity

ADC

- \$100,000-500,000/year

BITEs

- \$89,000/course

CAR T-Cells

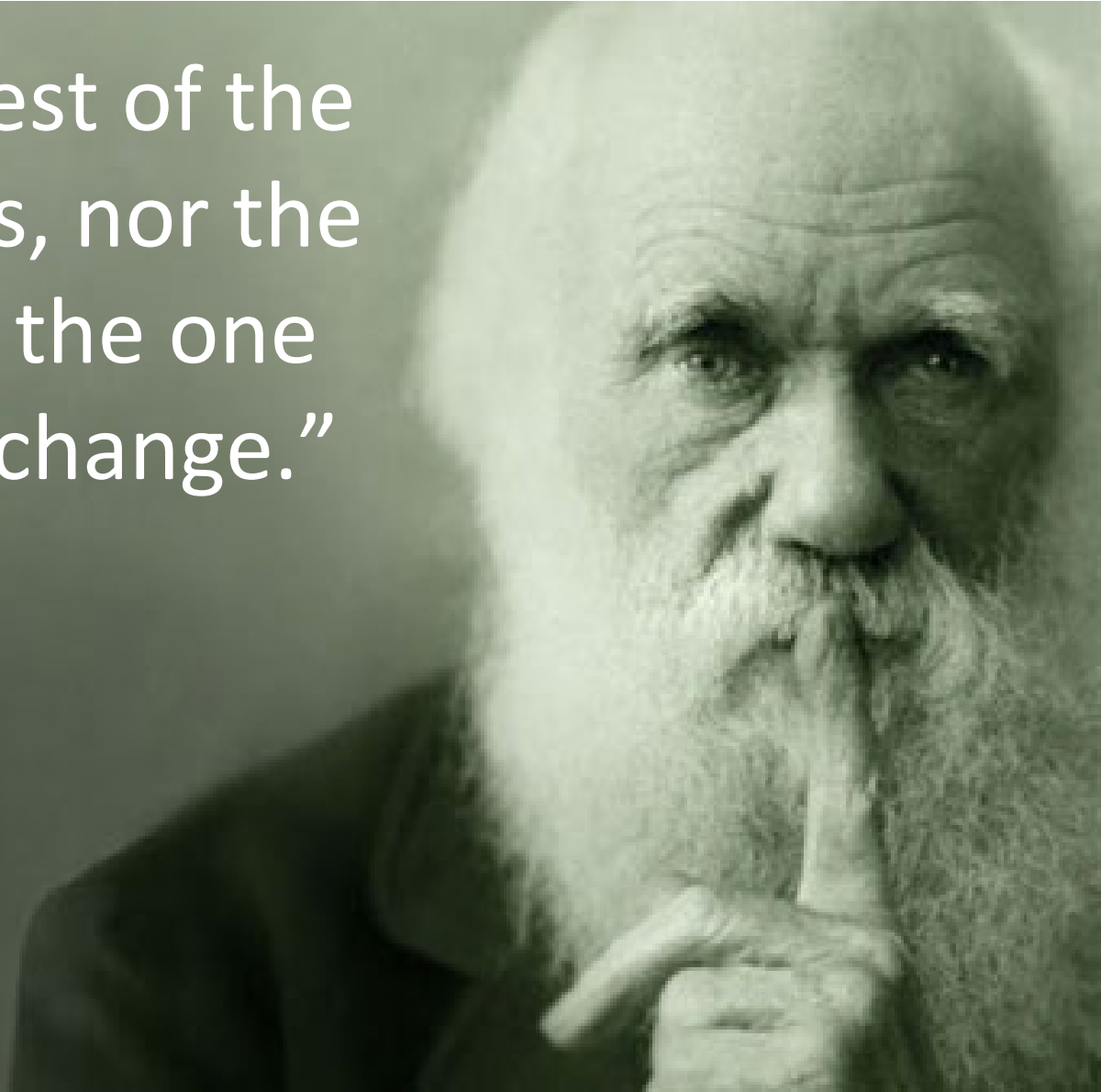
- \$500,000/treatment

IO

- \$150,000/year

“It is not the strongest of the species that survives, nor the most intelligent but the one most responsive to change.”

–Charles Darwin



A close-up photograph of a middle-aged man with grey hair and a beard, wearing a white lab coat over a blue shirt and dark tie. He is looking intently through the eyepiece of a microscope. The background is a dimly lit laboratory with blue-tinted lighting, showing shelves with various items and a grid of circular patterns on a wall. The overall mood is professional and focused.

DIVIDER SLIDE TITLE HERE



THANK YOU

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RESOURCE