Society for Immunotherapy of Cancer

Advances in Cancer Immunotherapy™

Cancer Immunotherapy in Practice

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Disclosures

- I have no disclosures.

Cancer Immunotherapy in Practice

- Current Systemic Treatments for Cancer
- Cancer Immunotherapy
- General Immunotherapy Toxicity Principles
- Provider's Role in Immunotherapy Management
- Patient Education/Resources
- Unit Based QI Project

Current Cancer Treatments

Chemotherapy

- 1st used in the 1940s as a successful treatment for cancer
- From 1950 – 1980s most standard treatment
- Curative in some rare cancers
- Often associated with significant toxicities

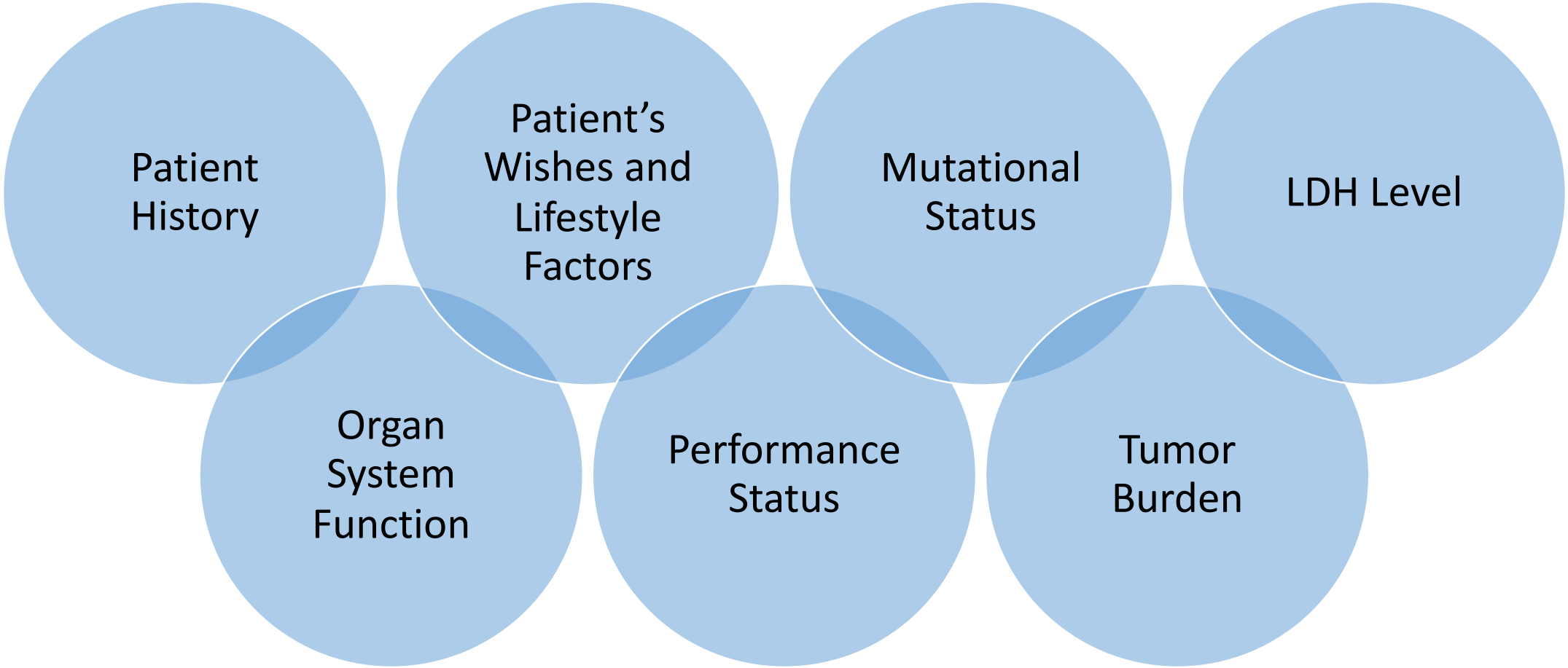
Targeted Therapies

- Developed based on identifying the molecular events that transform a normal cell into a cancer cell
- Provides a high initial chance of response but frequently develops resistance over time

Immunotherapy

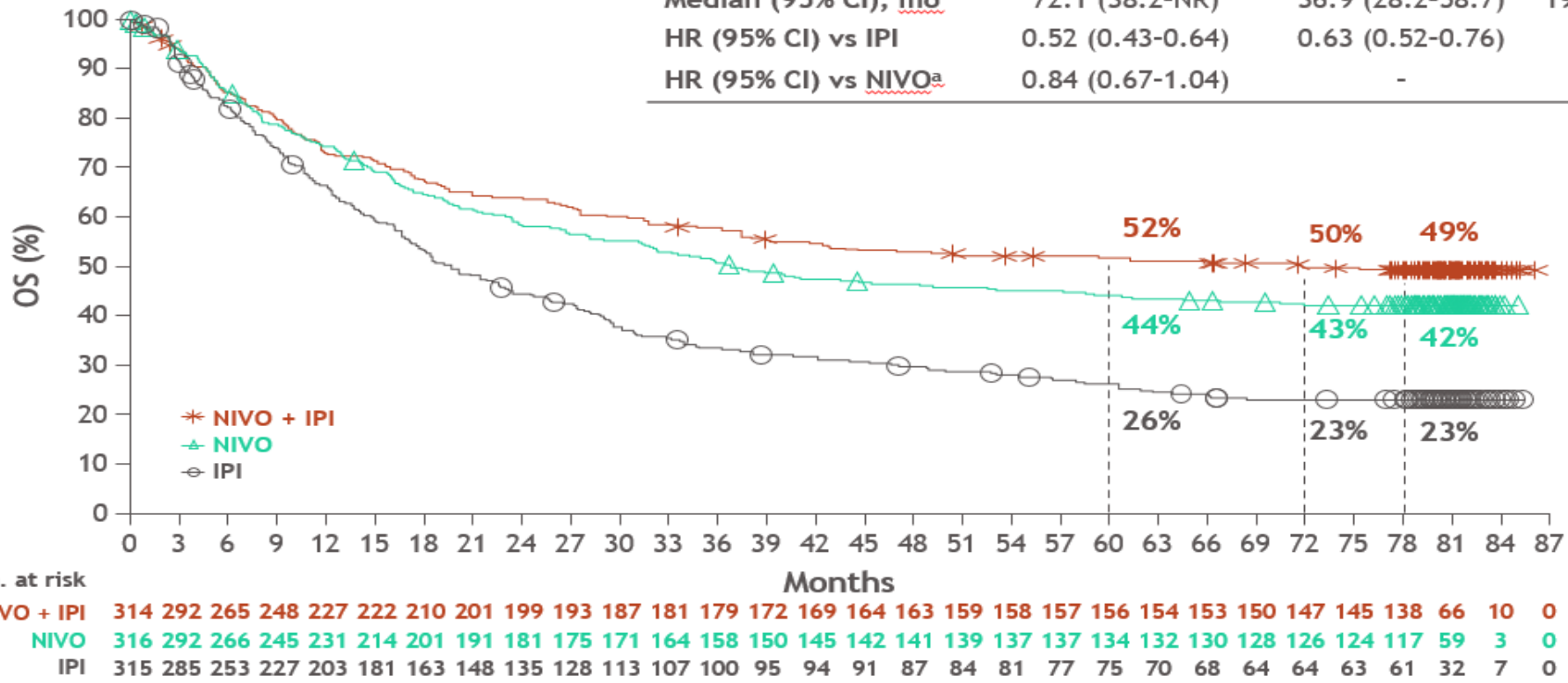
- The immune system is a defense against pathogens: viruses, bacteria, **cancer**
- Goal is to harness the body's defense to attack cancer
- Leads to long-lasting control of disease (immunity/cure)
- **Immunotherapy is the current standard** in the metastatic, adjuvant and possibly neo-adjuvant setting for metastatic melanoma

Treatment Decision Based on Patient Characteristics (for MM)



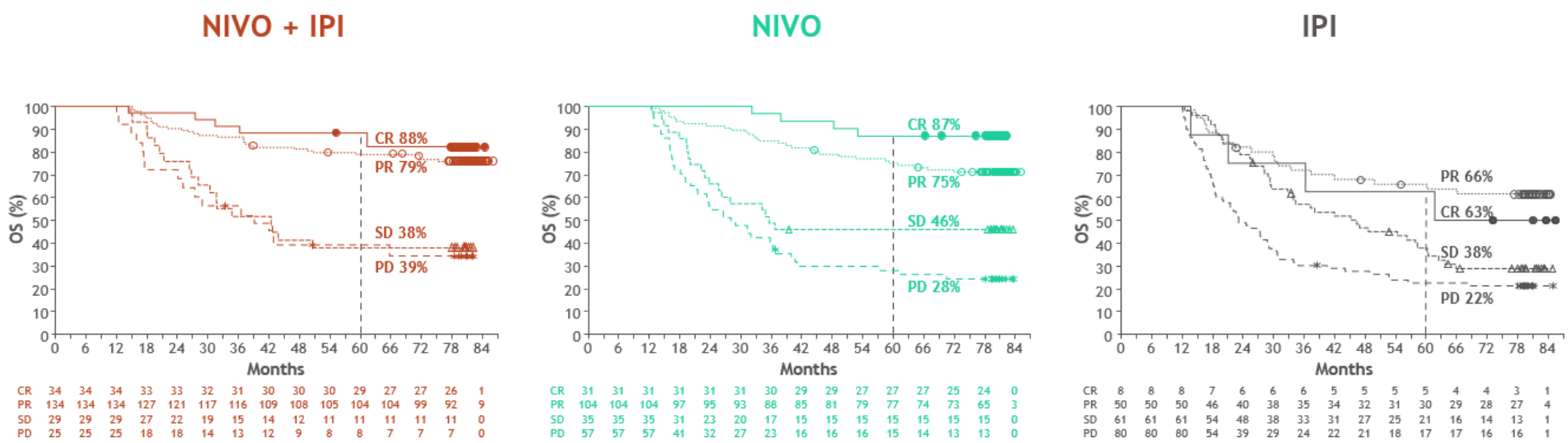
CheckMate 067: 6.5-year Overall survival

	NIVO + IPI (n = 314)	NIVO (n = 316)	IPI (n = 315)
Median (95% CI), mo	72.1 (38.2-NR)	36.9 (28.2-58.7)	19.9 (16.8-24.6)
HR (95% CI) vs IPI	0.52 (0.43-0.64)	0.63 (0.52-0.76)	-
HR (95% CI) vs NIVO[a]	0.84 (0.67-1.04)	-	-



Wolchok, JD, et al., JCO, Jan 2022

OS by best Overall Response, 12-month Landmark Analysis



- **Patients with a best overall response of a CR, PR, SD, or PD at 12 months were followed for OS**

Wolchok, JD, et al., JCO, Jan 2022

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Immunotherapy

Cancer immunotherapy is the wave of the future and has prompted a paradigm shift in oncology.

These therapeutic agents are used to target immune cells rather than cancer cells – the immunotherapies correspond to antagonistic antibodies that block specific immune checkpoint molecules cytotoxic T-lymphocyte-associated antigen 4 (CTLA-4), programmed cell death protein (PD-1) and its ligand PD-L1.

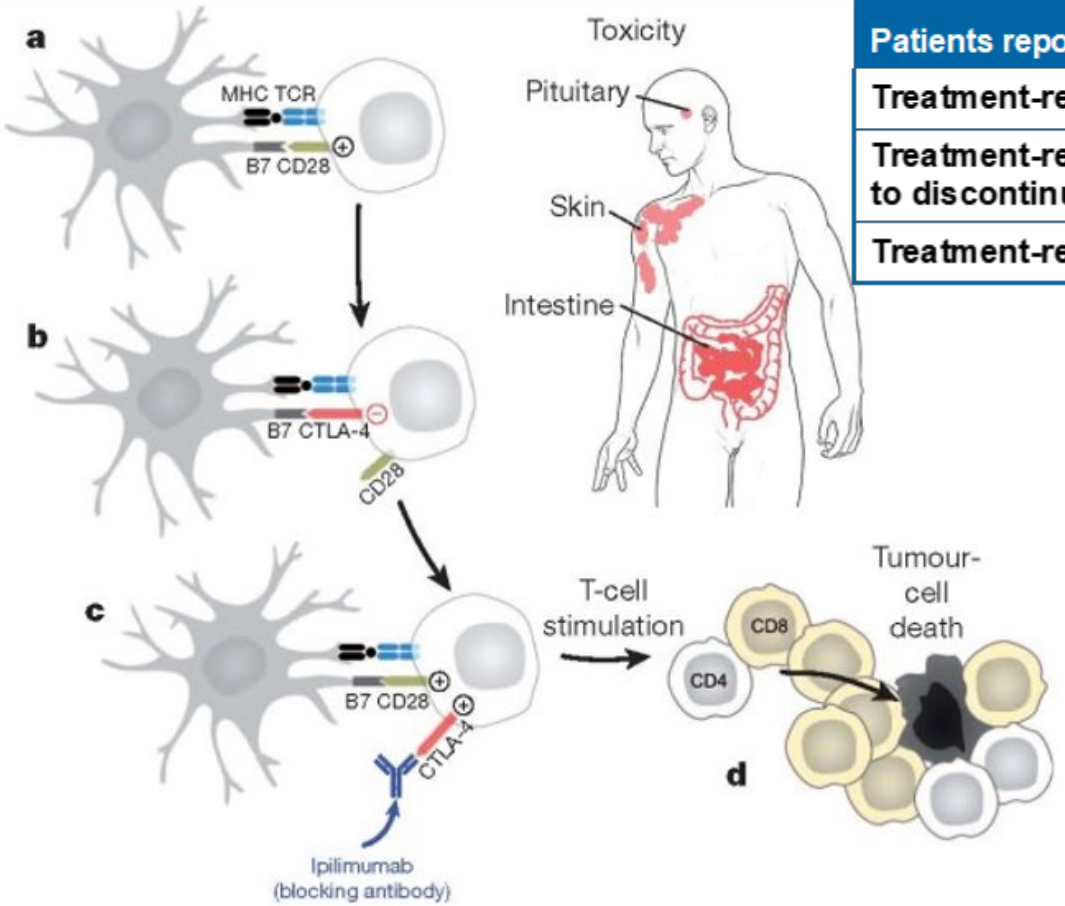
Targeting these checkpoints in patients living with cancer has led to long-lasting tumor responses in multiple cancer types.

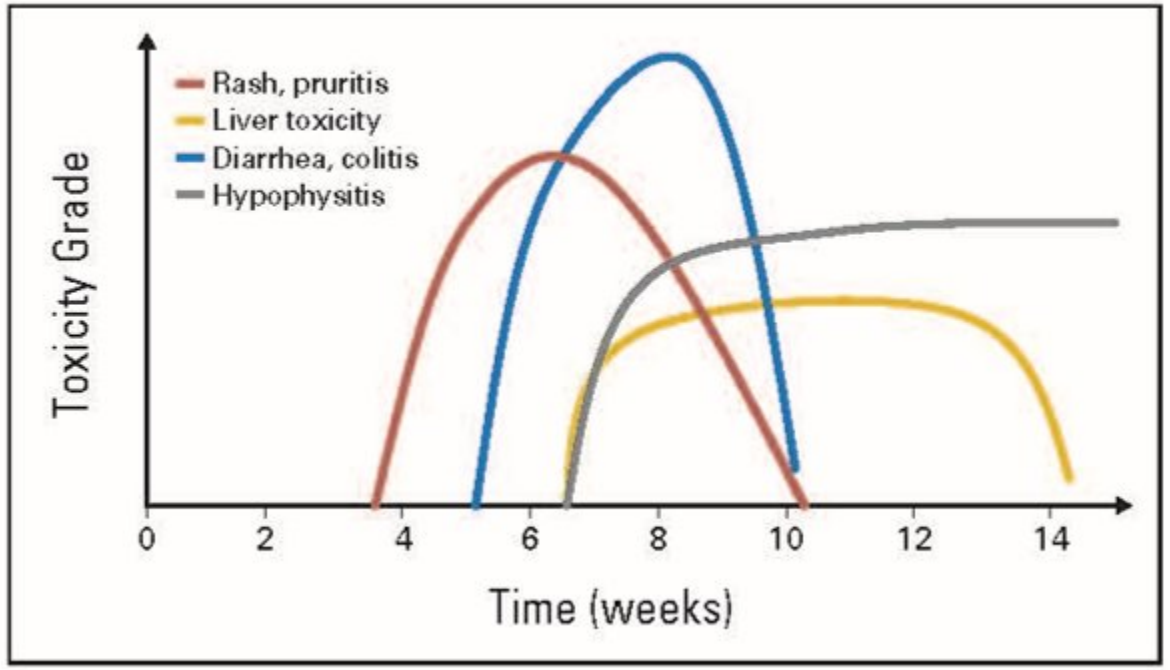
By unbalancing the immune system, these new immunotherapies are generating toxicities, called immune-related adverse events (irAEs) that mainly involve the gut, skin, endocrine glands, liver, and lung but can potentially affect any tissue.

Side effects/toxicities from check-point inhibitors are not only caused by a different physiology but are treated differently than chemotherapeutic regimens.

Toxicity organs, incidence, patterns

Patients reporting event	NIVO+IPI (n = 313)		NIVO (n = 313)		IPI (n = 311)	
	Any grade	Grade 3/4	Any grade	Grade 3/4	Any grade	Grade 3/4
Treatment-related AE, %	95.8	59.1	86.3	22.4	86.2	27.7
Treatment-related AE leading to discontinuation, %	40.3	30.4	12.5	8.0	15.1	13.5
Treatment-related death, n (%)	2 (0.6)		1 (0.3)		1 (0.3)	





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Slide courtesy of Hussein Tawbi

ASCO Guidelines 2021

It is recommended that clinicians manage toxicities as follows:

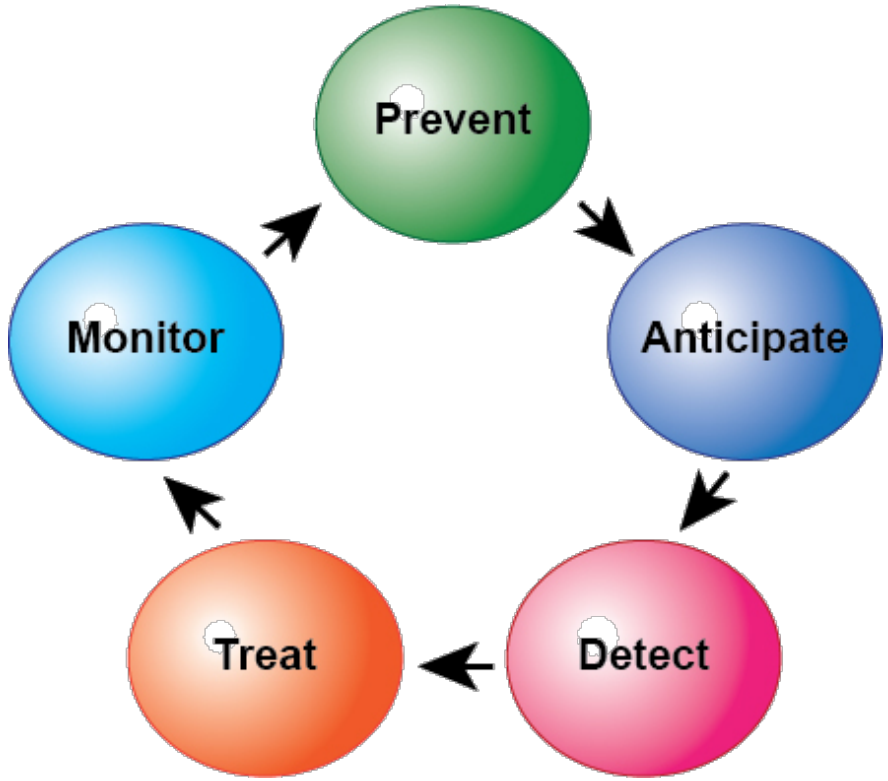
- Patient and family caregivers should receive timely and up-to-date education about immunotherapies, their mechanism of action, and the clinical profile of possible irAEs prior to initiating therapy and throughout treatment and survivorship.
- There should be a high level of suspicion that new symptoms are treatment related.

Immunotherapy Toxicity Management

Provider's Role

- Improve the early recognition, education and management of immune-related adverse events in cancer immunotherapy patients.
- Identify strategies for management
- Determine key points for education on the management of side effects

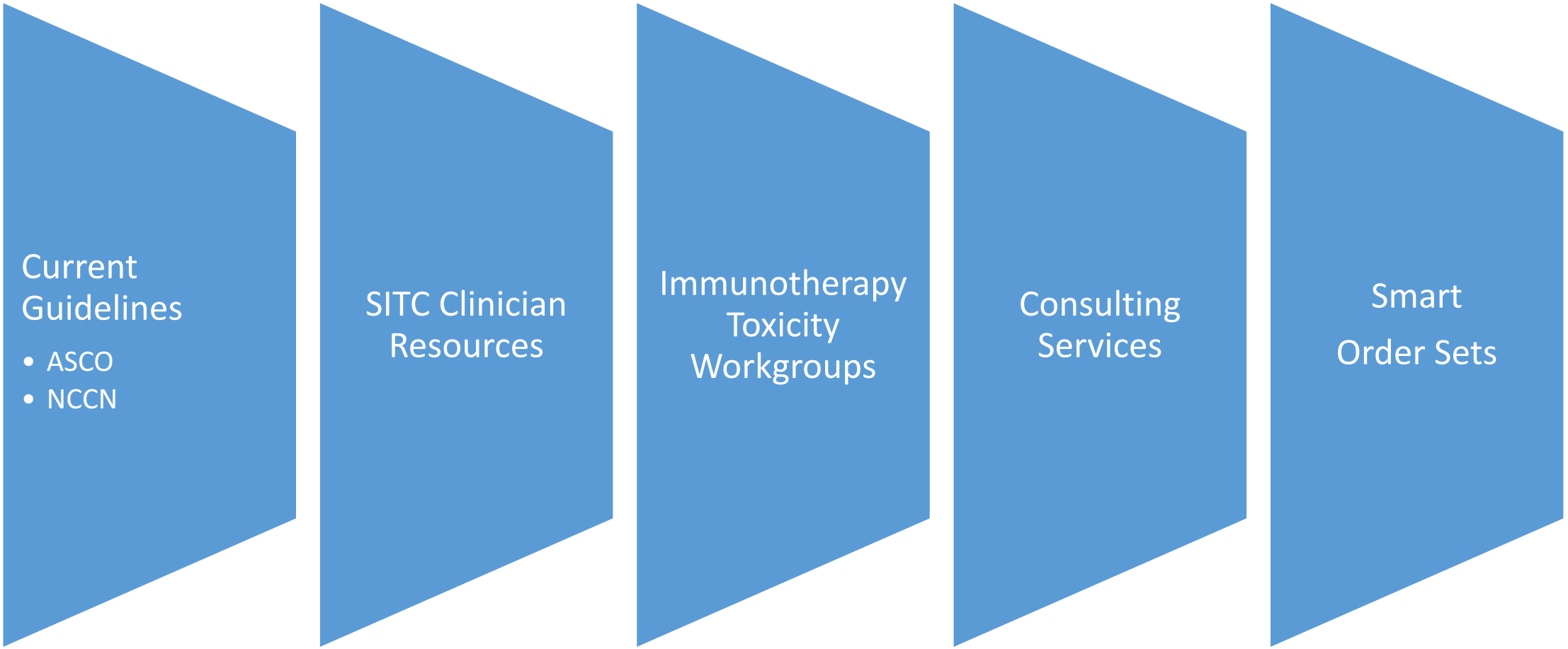
5 Pillars of Toxicity Management



Immune-Mediated Toxicities: General Principles

- Reversible toxicities when recognized quickly and treated appropriately
- Treatment may include dose delay, omission, or discontinuation
- Corticosteroids
  - May require long tapering duration to prevent recurrence of symptoms
  - Screening and Treatment of AEs from prolonged steroid use: systemic infection, osteoporosis, hyperglycemia, steroid myopathy
  - May re-challenge with checkpoint inhibitor if clinically appropriate, once tapered down to 10 mg oral prednisone or equivalent
- Other immune-modulatory agents: tumor necrosis alfa (TNF-α) antagonists, and mycophenolate mofetil
  - Anticipate use early and prepare

Provider Resources



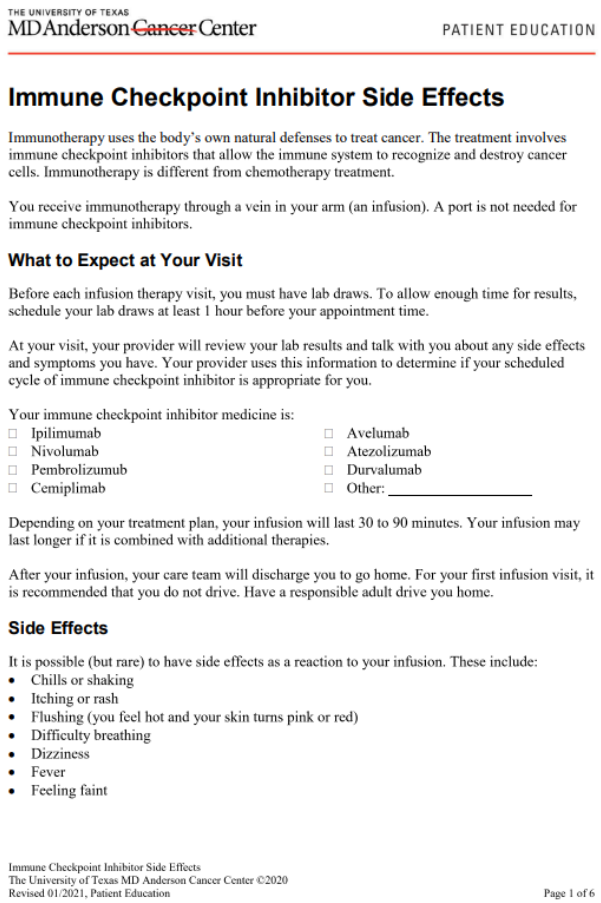
Patient/Family Education

- Education is critical to the success and safety of patient's receiving ICPi's:
  - Safety data of each immunotherapy
  - Common toxicities
  - What to do when these symptoms arise
- Constant communication of symptoms is essential sooner rather than later
- Educate regarding need for steroids – this conversation should be initiated early
- Address fear of taking steroids, holding or discontinuing the drug
  - Checkmate 067: ~68% of patients who discontinued the combination treatment d/t AEs achieved response.

Patient Resources

- Consent Documents
- Immunotherapy Cards
- NCCN Guidelines for patients
- Immune Checkpoint Inhibitor Side Effects Educational Document
- Specialized Discharge Education

Specialized Education



THE UNIVERSITY OF TEXAS
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PATIENT EDUCATION

Immune Checkpoint Inhibitor Side Effects

Immunotherapy uses the body's own natural defenses to treat cancer. The treatment involves immune checkpoint inhibitors that allow the immune system to recognize and destroy cancer cells. Immunotherapy is different from chemotherapy treatment.

You receive immunotherapy through a vein in your arm (an infusion). A port is not needed for immune checkpoint inhibitors.

What to Expect at Your Visit

Before each infusion therapy visit, you must have lab draws. To allow enough time for results, schedule your lab draws at least 1 hour before your appointment time.

At your visit, your provider will review your lab results and talk with you about any side effects and symptoms you have. Your provider uses this information to determine if your scheduled cycle of immune checkpoint inhibitor is appropriate for you.

Your immune checkpoint inhibitor medicine is:

- ☐ Ipilimumab
- ☐ Nivolumab
- ☐ Pembrolizumub
- ☐ Cemiplimab
- ☐ Avelumab
- ☐ Atezolizumab
- ☐ Durvalumab
- ☐ Other: _____

Depending on your treatment plan, your infusion will last 30 to 90 minutes. Your infusion may last longer if it is combined with additional therapies.

After your infusion, your care team will discharge you to go home. For your first infusion visit, it is recommended that you do not drive. Have a responsible adult drive you home.

Side Effects

It is possible (but rare) to have side effects as a reaction to your infusion. These include:

- Chills or shaking
- Itching or rash
- Flushing (you feel hot and your skin turns pink or red)
- Difficulty breathing
- Dizziness
- Fever
- Feeling faint

Immune Checkpoint Inhibitor Side Effects
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Revised 01/2021, Patient Education
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- What to Expect at your Visit
- Side Effects
- Record Your Baseline Symptoms
- Managing Side Effects at Home
- When to Seek Emergency Care
- Contact Information
- Side Effect Tracker

Patient Education: Inform Patients Most irAEs Are Mild and Reversible if Detected Early and Treated

Signs That Require Prompt Evaluation

- Digestive: Diarrhea, blood or mucus in the stool, severe abdominal pain
- Endocrine: Fatigue, weight loss, nausea, vomiting, thirst or appetite increase, polyuria
- Skin: Extensive rash, severe pruritus
- Respiratory: Shortness of breath, coughing
- Neurological: Headache, confusion, muscle weakness, numbness
- Arthralgia or swelling joints
- Myalgia
- Unexplained fever
- Hemorrhagic syndrome
- Severe loss of vision in one or both eyes

Champiat S, et al. *Ann Oncol* 2016;27:559-74.

"Patient Immunotherapy Card"

Name, Family name:
Immunotherapy drug(s):
I am currently receiving an immunotherapy which may increase the risk of occurrence of autoimmune diseases and in particular:

- pneumonitis (inflammation of the lungs)
- colitis (inflammation of the gut)
- hepatitis (inflammation of the liver)
- nephritis (inflammation of the kidneys)
- endocrinopathy: hypophysitis, thyroid dysfunction, diabetes, adrenal insufficiency (inflammation of the hormone producing organs)
- cutaneous rash (inflammation of the skin)

as well as other immune-related adverse events: neurological, hematological, ophthalmological,... **The management of these dysimmune adverse events is specific and sometimes urgent. It absolutely requires coordination with the health care team which has prescribed the treatment:**
Prescriber ID and contact information (reported at the back of this card)

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Unit Based QI Project

Problem

- Many patients who receive immunotherapy are being admitted with immune-mediated toxicities. A large portion of these patients are readmitted within 30 days for the same toxicity.

Question

- Does a structured discharge program decrease hospital readmissions in oncology patients admitted with immune-mediated toxicities?

Objective

- To identify if a structured discharge program will decrease hospital readmissions.

QI Project Implementation

Implementation time = 12 weeks

Admission – Discharge

- Each patient received verbal and printed education on their specific toxicity.
  - Using NCCN guidelines for patients
- Daily education using NCCN guidelines and following IDEAL framework

Day of Discharge

- Discharge checklist followed
- Specific discharge instructions in AVS

Post Discharge

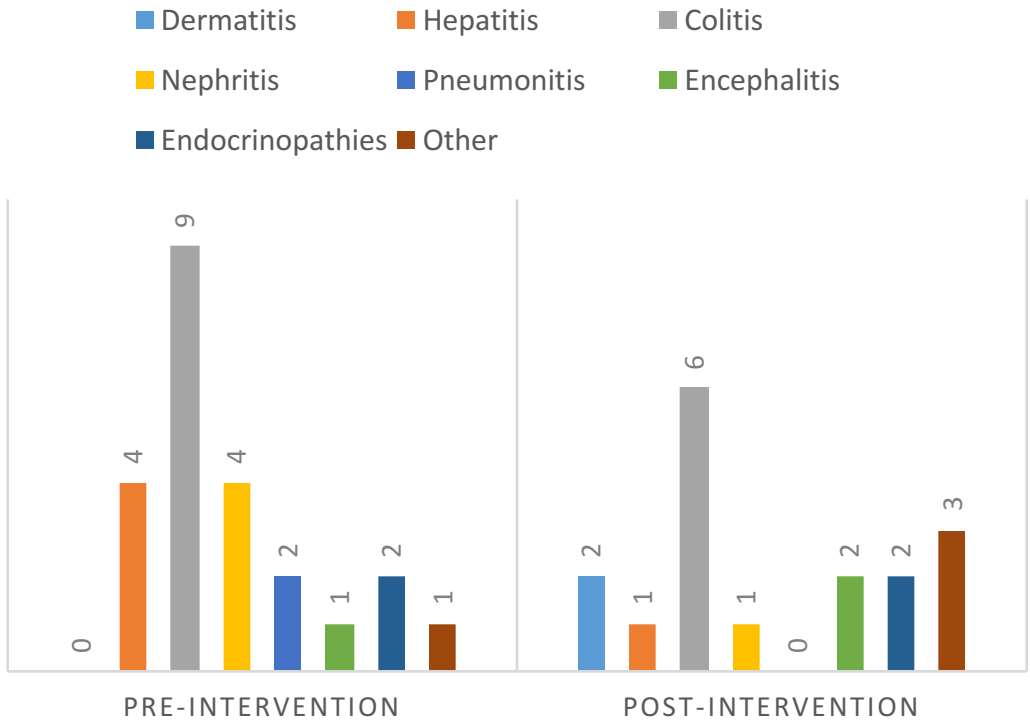
- Telephone follow-up calls on days 3,6,9

Data Analysis

Patient Demographics

	N=13
Age	Years
Range	21-79
Mean	56.46
Std deviation	16.47
Gender	
Male	8 (61.5)
Female	5 (38.5)
Race	
White	13 (100)
Marital Status	
Married	9 (69.2)
Divorced	2 (15.4)
Single	1 (7.7)
Widowed	1 (7.7)
Length of Stay	Days
Range	Range 2-23
Median	Median 7.4615

Type of Immune Mediated Toxicity



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Results

	Pre-Intervention	Post-Intervention
Admissions From ICI Toxicity	23	13
Readmissions Secondary to ICI Toxicity	11	0
Z Value		2.9922
P Value		.00139

Statistically significant as P< 0.05

Conclusions

- Immunotherapy has changed the landscape in cancer therapy.
- As immunotherapies indications broaden, our understanding of toxicity identification and management is essential to make the risk-benefit ratio favorable.
- Providers have an ESSENTIAL role in monitoring and managing patients undergoing treatment with immunotherapy.
- Close monitoring for irAEs is mandatory for prevention of serious adverse events, decreased ER visits and improved patient outcomes.
- Provider resources and education will enable providers to deliver immunotherapy safely, anticipate and prepare for complications.
- Patient and caregiver education is imperative; by empowering patients you decrease the risk of life-threatening or long-term sequela from treatment toxicities.
- There should be more focus on discharge teaching in this special population of patients, to include specialized staff.