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Agenda Topics

Prime THERAPEUTICS™

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Lipotropics, Other

ANTIHYPERLIPIDEMICS : ADENOSINE TRIPHOSPHATE-CITRATE LYASE INHIBITORS
ANTIHYPERLIPIDEMICS : ANGIOPOIETIN-LIKE PROTEIN INHIBITORS
ANTIHYPERLIPIDEMICS : MICROSOMAL TRIGLYCERIDE TRANSFER PROTEIN (MTP) INHIBITOR
ANTIHYPERLIPIDEMICS : PCSK-9 INHIBITORS

Disease State Description - Lipotropics, Other

Cardiovascular disease

- Many clinical trials have demonstrated that high serum concentrations of low-density lipoprotein cholesterol (LDL-C) and low levels of high-density lipoprotein cholesterol (HDL-C) are major risk factors for coronary heart disease (CHD)
- The National Health and Nutrition Examination Survey (NHANES) reported that in 2015 to 2018, approximately 11.4% of adults in the United States (US) had high total cholesterol (TC) (≥ 240 mg/dL) and 17.2% had low HDL-C (< 40 mg/dL)
- The prevalence of elevated TC was higher in women (12.1%) compared to men (10.5%), but the difference was not significant
- The prevalence of low HDL-C was higher in men (26.6%) compared to women (8.5%).
- In 2015 to 2018, there were no significant race or Hispanic-origin differences in the prevalence of high TC in adults
- The NHANES analysis was based on measured cholesterol only and did not consider whether lipid-lowering medications were taken

Guidelines - Lipotropics, Other

Cardiovascular disease

- Between 2013 and 2019, the American College of Cardiology (ACC) and the American Heart Association (AHA), in combination with the National Heart, Lung, and Blood Institute (NHLBI), released 4 new consensus guidelines regarding cholesterol management, cardiovascular (CV) risk assessment, obesity, and lifestyle
- ACC/AHA emphasizes lifestyle modification, including a reduced calorie diet and aerobic physical activity, as a critical component of atherosclerotic cardiovascular disease (ASCVD) risk reduction, both prior to and in conjunction with cholesterol lowering drug therapies
- In June 2021, the AHA published a scientific statement on physical activity as a crucial component in the first-line treatment for increased blood pressure and cholesterol
  - The statement details mild- to moderate-risk patient groups appropriate for lifestyle-only treatment of increased cholesterol as well as a description of the recommendations, usual effects, and considerations for lifestyle management with physical activity
  - Guidance and resources were also provided for evaluating, prescribing, counseling, and referring to assist in increased physical activity
- In 2023, the AHA published a scientific statement which reports that resistance training has a favorable but modest effect on TC, TG, and HDL-C
  - Evidence for the effect of resistance training on LDL-C is more variable

Lipotropics, Other

Praluent (alirocumab)

March 2024 – New Indication

- **FDA approved for adjunct to diet and other low-density lipoprotein cholesterol (LDL-C)-lowering therapies in pediatrics ≥ 8 years old with heterozygous familial hypercholesterolemia (HeFH) to reduce LDL-C**

FDA Indications:

- To reduce the risk of myocardial infarction (MI), stroke, and unstable angina requiring hospitalization in adults with established cardiovascular disease (CVD)
- As adjunct to diet, alone or in combination with other LDL-C-lowering therapies, in adults with primary hyperlipidemia, including HeFH, to reduce LDL-C
- As an adjunct to other LDL-C-lowering therapies in adult patients with homozygous familial hypercholesterolemia (HoFH) to reduce LDL-C
- **As an adjunct to diet and other LDL-C-lowering therapies in pediatric patients aged 8 years and older with HeFH to reduce LDL-C**

Recommended Dosage:

- **Stratified by indication, age, and weight**
- **In pediatric patients with HeFH:**
  - **< 50 kg: 150 mg subcutaneously every 4 weeks**
  - **- LDL-C-lowering response is inadequate: 75 mg SC every 2 weeks**
  - **≥ 50 kg: 300 mg subcutaneously every 4 weeks**
  - **- LDL-C-lowering response is inadequate: 150 mg SC every 2 weeks**
  - **LDL-C-lowering effect can be measured as early as 4 weeks after initiation**
  - **A caregiver should administer treatment for pediatric between 8 to 11 years old**

Availability:

- Injection: 75 mg/mL or 150 mg/mL in a single-dose pre-filled pen

Lipotropics, Other

Nexletol; Nexlizet (bempedoic acid; bempedoic acid/ezetimibe)

March 2024 – New Indication

- **FDA approved to reduce the risk of myocardial infarction (MI) and coronary revascularization in adults who are unable to take recommended statin therapy (including those not taking a statin) with: (1) established cardiovascular disease (CVD), or (2) a high risk for a CVD event but without established CVD**

FDA Indications:

- **Bempedoic acid: To reduce the risk of MI and coronary revascularization in adults who are unable to take recommended statin therapy (including those not taking a statin) with: (1) established CVD, or (2) a high risk for a CVD event but without established CVD**
- As an adjunct to diet, in combination with other LDL-C lowering therapies, or alone when concomitant LDL-C lowering therapy is not possible, to reduce LDL-C in adults with primary hyperlipidemia, including HeFH

Warnings:

- Hyperuricemia: Elevations in serum uric acid have occurred; assess uric acid levels periodically as clinically indicated. Monitor for signs and symptoms of hyperuricemia, and initiate treatment with urate-lowering drugs as appropriate
- Tendon Rupture: Discontinue at the first sign of tendon rupture; avoid in patients who have a history of tendon disorders or tendon rupture

Recommended Dosage:

- **One tablet orally once daily with or without food**

Availability:

- **Nexletol: 180 mg oral tablets**
- **Nexlizet: 180 mg bempedoic acid/10 mg ezetimibe oral tablets**

Lipotropics, Other

Discontinuation

- **4/12/2024 - Repatha (evolocumab)**
  - Amgen announced that it will discontinue the manufacture of the Repatha Pushtronex System on June 30, 2024
  - Other Repatha devices, including the SureClick Autoinjector, will remain available
  - Amgen stated that this decision was made to maintain its high standards for the patient experience

Opiate Dependence Treatments

SUBSTANCE USE DISORDER : AGENTS FOR OPIOID WITHDRAWAL
SUBSTANCE USE DISORDER : OPIOID ANTAGONISTS
SUBSTANCE USE DISORDER : OPIOID PARTIAL AGONISTS - SUBCUTANEOUS
SUBSTANCE USE DISORDER : OPIOID PARTIAL AGONISTS - TRANSMUCOSAL

Disease State Description - Opiate Dependence Treatments

Opioid Abuse and Misuse

- Prescription and illicit opioid abuse and misuse has reached national interest and was declared a National Public Health Emergency by the Department of Health and Human Services (DHHS) Acting Secretary in 2017
- The 2022 National Survey on Drug Use and Health (NSDUH) reported there was an estimated 46.6 million Americans aged 12 years and older who were current (past month) illicit drug users and approximately 8.5 million people aged 12 years or older in the United States (US) who misused opioids in the past year
- Approximately 48.7 million people aged 12 years and older in 2022 were considered to have a substance use disorder (SUD) in the past year, including 29.5 million people with an alcohol use disorder, 27.2 million people with a drug use disorder, and 6.1 million with an opioid use disorder (OUD)
- In 2020, the US Preventive Services Task Force issued a final recommendation statement on screening for unhealthy drug use
  - For adults: Recommended screening implemented when services for accurate diagnosis, effective treatment, and appropriate care can be offered or referred
  - For adolescents: Current evidence is insufficient to determine the benefits and harms of screening for unhealthy drug use

Guidelines - Opiate Dependence Treatments

Centers for Disease Control and Prevention (CDC) Guidelines, 2022

- The CDC includes 12 recommendations: 2 regarding when to initiate opioids; 3 regarding opioid selection and appropriate dosage; 2 regarding appropriate duration and follow-up; and 5 related to assessment of risk and addressing potential harms of opioid abuse
- When opioids are prescribed, the CDC advises clinicians to evaluate for risk factors for opioid overdose in the patient and household members and offer naloxone
- The recommendations emphasize the careful tapering of opioids to avoid withdrawal symptoms in current pain patients and individualized assessment of risks and benefits for continued high-dose treatment
- Regarding medications for opioid dependence, the CDC states prescribers should offer treatment for OUD (e.g., medication-assisted treatment, such as buprenorphine or methadone)
  - Buprenorphine (alone or in combination with naloxone) and methadone treatment have been associated with reduced overdose deaths and reduced all-cause mortality
  - Naltrexone is also an effective option, particularly for highly motivated individuals but has not been evaluated in persons with concomitant pain
  - Adherence is a consideration with injectable naltrexone as individuals must be motivated to follow through with monthly, long-acting injections
  - Because the effectiveness of oral naltrexone is limited by poor medication adherence, oral naltrexone should not be used except under very limited circumstances (e.g., patients who would be able to comply with observed daily dosing)
  - Naltrexone also requires full withdrawal from opioids prior to initiation, which may present a challenge
  - The CDC states there is no duration limit for the treatment of OUD with buprenorphine, methadone, or naltrexone

Opiate Dependence Treatments

FDA Communication

- **January 2024 - Narcan (naloxone)**
  - Following FDA request, Emergent extended the shelf-life of newly produced naloxone HCl (Narcan) 4 mg nasal spray to 4 years (previously 3 years)
  - The extension is only applicable to products manufactured after the date of the announcement (1/17/24)
  - Product previously manufactured is not impacted and maintains the same shelf-life printed on the product's packaging

New Generic

- **August 2024 – Iofexidine**
  - FDA has approved the first generic to USWM's Lucemyra 0.18 mg tablets from Indoco
  - Launch anticipated immediately

Movement Disorders

MOVEMENT DISORDER AGENTS

Disease State Description - Movement Disorders

Huntington's Disease (HD)

- Chorea, an abnormal involuntary twisting or writhing movement, is a characteristic feature of Huntington's disease (HD), a rare and fatal genetic disorder resulting in neurodegeneration of the brain which affects roughly 4.1 to 8.4 per 100,000 people in the US
- Chorea affects approximately 90% of people with HD
  - Often develops early, gradually worsens, and plateaus in late stages
  - Chorea symptoms may be aggravated by stress and anxiety
  - As the disease progresses, it can interfere with patients' function and chorea is replaced by dystonia and parkinsonism
- No therapy currently exists to delay the onset of symptoms or prevent the progression of the disease; however, symptomatic treatment may improve the quality of life and prevent complications

Guidelines - Movement Disorders

The International Parkinson and Movement Disorder Society (MDS), 2022

- Using the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) approach, the group appraised 22 randomized controlled trials of 17 interventions targeting several predetermined questions; high quality data were limited
- Both deutetrabenazine and tetrabenazine are likely efficacious for chorea
- Deutetrabenazine is likely efficacious for motor impairment, while tetrabenazine is unlikely to be efficacious
- Deutetrabenazine is likely efficacious for dystonia, but data were too limited regarding tetrabenazine
- Deutetrabenazine and tetrabenazine were determined unlikely efficacious in functional capacity improvement as well as gait and balance
- Regarding safety of interventions, the group categorized deutetrabenazine as unlikely to be harmful in worsening depression, while tetrabenazine was considered likely to be harmful
- Deutetrabenazine extended-release (Austedo XR) was not approved at the time of this publication, and valbenazine (Ingrezza, Ingrezza Sprinkle) was not yet approved for this indication at the time of publication

Movement Disorders

New Dosage Forms

- **Austedo XR (deutetrabenazine)**
  - May 2023: FDA approved higher strength ER tablets: 30 mg, 36 mg, 42 mg, and 48 mg
    - Max recommended daily dosage is 48 mg
  - July 2024: FDA approved new intermediate strength ER tablets: 18 mg
    - A new 4-week titration kit has also been approved which contains seven 12 mg ER tablets, seven 18 mg ER tablets, seven 24 mg ER tablets, and seven 30 mg ER tablets

Ingrezza (valbenazine)

May 2024 – New Formulation

- **FDA approved Ingrezza Sprinkle capsules for patient who have dysphagia or difficulty swallowing**
  - **The capsule contains oral granules that can be sprinkled onto soft food**
  - **The capsule contents should not be mixed with milk or water, and should not be administered via enteral tubes**

FDA Indications:

- Treatment of adults with tardive dyskinesia
- Treatment of adults with chorea associated with Huntington's disease

Warnings:

- BBW: Depression and suicidal ideation and behavior in patients with Huntington's disease
- Hypersensitivity reactions, including angioedema may occur; discontinue if this occurs
- Pregnancy: May cause fetal harm

Recommend Dosage:

- Tardive dyskinesia: 40 mg once daily initially, with dose increase to the recommended dosage of 80 mg once daily after 1 week
- Chorea associated with Huntington's disease: 40 mg once daily initially, with dose increases in 20 mg increments every 2 weeks to the recommended dosage of 80 mg once daily
  - Lower doses of 40 mg or 60 mg once daily may be considered depending on response and tolerability

Availability:

- Ingrezza: 40 mg, 60 mg, and 80 mg capsules
- **Ingrezza Sprinkle: 40 mg, 60 mg, and 80 mg capsules**

Oncology, Injectable

ONCOLOGY AGENTS : ANTIBIODIES - INJECTABLE

Disease State Description - Oncology, Injectable

Lung cancer

- Leading cause of cancer death in both men and women in the United States (US)
  - Currently, 5-year survival is estimated to be 23%, an increase from 15% reported in 2019
  - Declines in lung cancer mortality in the US have been accelerating in recent years
  - There has been a steady decline in the incidence of lung cancer diagnoses in the US; the number of diagnoses declined 2.3% in the most recent measurement
  - Despite these encouraging trends, there are still more US lung cancer deaths annually than deaths from breast cancer, prostate cancer, and colorectal cancer combined
- The primary risk factor for the development of lung cancer is smoking tobacco, accounting for approximately 85% to 90% of all cases of lung cancer
- While chemoprevention agents are not yet established, lung cancer screening using low-dose computerized tomography (LDCT) is recommended by the US Preventive Services Task Force (USPSTF), who expanded their lung cancer screening guidelines in 2021
  - The USPSTF guidelines now recommend annual screening with LDCT for patients 50 to 80 years of age who are current smokers with at least a 20 pack-year smoking history and former smokers who have quit within the past 15 years

Disease State Description - Oncology, Injectable

Lung cancer

- Lung cancer is divided into two major classes: non-small cell lung cancer (NSCLC) and small cell lung cancer (SCLC)
  - These two types of lung cancer differ in their biology, treatment, and overall prognosis
  - NSCLC accounts for more than 80% of all lung cancer cases
    - There are two major histologic subtypes of NCSLC: squamous cell and non-squamous cell
      - Non-squamous cell includes adenocarcinoma, which is the most common type of lung cancer diagnosed in the US and is also the most common subtype occurring in non-smokers
- Depending on the stage of the disease at diagnosis and the histologic subtype, the treatment of lung cancer may involve surgery, radiation, chemotherapy, targeted therapy, immunotherapy, or a combination of these approaches

Disease State Description - Oncology, Injectable

Cholangiocarcinoma

- Also known as Biliary Tract Cancers (BTC)
- Tumors originating in the epithelium of the bile duct
- Typically classified as either intrahepatic or extrahepatic, depending on their location within the biliary tree
- Rare in the United States with approximately 8,000 people are diagnosed each year
  - This may be an underestimate of the actual number of cases because these cancers can be difficult to diagnose and may often be classified as other types of cancer such as hepatocellular carcinoma or cancer of unknown origin
- The average age at diagnosis is between 70 and 72 years of age
- Treatment includes a surgical consultation to assess if the patient is a candidate for resection or possible organ transplantation
- For patients with unresectable or metastatic disease, there is an increasing role for molecular profiling
  - Intrahepatic cholangiocarcinoma harbors IDH1 mutations in 10% to 20% of cases and mutations in FGFR2 fusions occur in 9% to 15% of cases
  - These mutations provide an opportunity for targeted therapies

Disease State Description - Oncology, Injectable

Gastric Cancer

- The incidence of gastric cancer has been declining steadily since the 1930s, yet it remains a major cause of cancer death in the United States and globally
- The high mortality rate reflects the prevalence of advanced disease at presentation
- In population-based series of Western populations, the five-year survival rate for patients with completely resected stage I gastric cancer is approximately 70 to 75 percent, and it drops to 35 percent or less for stage IIB disease and beyond
- Efforts to improve treatment results beyond those obtained with surgery alone have included adjuvant and neoadjuvant strategies
  - The positive impact of such therapies on survival in patients with resected gastric cancer has become clearer over time, although there is no consensus as to the best approach

Disease State Description - Oncology, Injectable

Bladder Cancer

- In 2023, an estimated 82,290 new cases of bladder cancer will be diagnosed in the United States (US) and an estimated 16,710 deaths will occur in 2023 due to these malignancies
- Fourth most common cancer in US men but is less common in women
- The average age at diagnosis is 73 years, and as a result, patients commonly have coexisting medical conditions
- Urothelial carcinoma, also known as transitional cell carcinoma (TCC), is the most common type of bladder cancer
- Other much rarer bladder cancers include squamous cell carcinoma, adenocarcinoma, small cell carcinoma, and sarcoma
- Risks factors for bladder cancer include smoking which is responsible for about half of all bladder cancers, male gender, White race, personal/family history of bladder cancer, radiation to the pelvic region, environmental exposure (e.g., occupational or drug-related), and chronic urinary tract infections

Disease State Description - Oncology, Injectable

Cervical Cancer

- Almost all cervical cancer cases (99%) are linked to infection with high-risk human papillomaviruses (HPV), an extremely common virus transmitted through sexual contact
- Although most infections with HPV resolve spontaneously and cause no symptoms, persistent infection can cause cervical cancer in women
- Cervical cancer is the fourth most common cancer in women globally
  - In 2022, an estimated 660,000 women were diagnosed with cervical cancer worldwide and about 350,000 women died from the disease
- Effective primary (HPV vaccination) and secondary prevention approaches (screening for and treating precancerous lesions) will prevent most cervical cancer cases
- When diagnosed, cervical cancer is one of the most successfully treatable forms of cancer, as long as it is detected early and managed effectively
- Cancers diagnosed in late stages can also be controlled with appropriate treatment and palliative care
- With a comprehensive approach to prevent, screen and treat, cervical cancer can be eliminated as a public health problem within a generation

Disease State Description - Oncology, Injectable

Uterine cancer

- Over 90 percent of uterine cancers are endometrial, originating in the epithelium
- The major risk factor for endometrial carcinoma (EC) is the presence of a clinical scenario associated with an excess of endogenous or exogenous estrogen without adequate opposition by a progestin
- EC develops in approximately 3 percent of females in the United States, and is the fourth most common cancer among females in the United States after cancer of the breast, lung/bronchus, and colon/rectum
- The incidence peaks between ages 60 and 70 years, but 2 to 5 percent of cases occur before age 40 years
- Most patients are diagnosed when disease is still confined to the uterus and thus have a greater than 90 percent five-year survival rate
- EC typically presents with abnormal uterine bleeding (AUB); other presentations include abnormal cervical cytology findings on cervical cancer screening, abnormal findings on imaging, or discovered incidentally when hysterectomy is performed for benign disease

Disease State Description - Oncology, Injectable

Melanoma Skin Cancer

- The incidence of melanoma skin cancer in the US is increasing, but the death rate due to melanoma is declining
  - Melanoma is increasing more rapidly than any other malignancy except lung cancer in women
  - Conversely, there have been recent declines in mortality for melanoma
- The median age at diagnosis is 65 years
- Risk factors for the development of melanoma include both genetic factors (skin type, inherited germline mutations) and environmental factors (excess sun exposure, UV-based artificial tanning)
- Despite the relationship to UV exposure, melanoma can also occur in areas of the body without substantial sun exposure and can occur in any ethnic group
- There are also noncutaneous forms of melanoma, arising from melanocytes present in mucosal membranes or the uveal tract of the eye
  - The treatment of noncutaneous melanoma may differ from that of cutaneous melanoma, and treatment should be individualized for these patients

Disease State Description - Oncology, Injectable

Nasopharyngeal carcinoma (NPC)

- Predominant tumor type arising in the nasopharynx, the tubular passage behind the nasal cavity that connects to the oropharynx
- Although nasopharyngeal carcinoma is rare in most parts of the world, it is endemic in southern China, Southeast Asia, North Africa, and the Arctic, where undifferentiated, nonkeratinizing squamous cell carcinoma is the predominant histology
- The major etiologic factors for endemic nasopharyngeal carcinoma are genetic susceptibility, early age exposure to chemical carcinogens, and Epstein-Barr virus (EBV) infection
- Analysis of EBV DNA in plasma is useful for screening at-risk populations for nasopharyngeal carcinoma
  - Detect the cancer at an early stage with a superior treatment outcome compared with the unscreened population

Disease State Description - Oncology, Injectable

Acute lymphoblastic leukemia (ALL)

- Most common form of childhood leukemia, with 53.5% of patients diagnosed before the age of 20 years
- Approximately 29.6% of cases of ALL are diagnosed at age 45 years or older, with 13.7% of cases diagnosed at 65 years or older
- Overall survival (OS) outcomes for children with ALL have improved dramatically in the last decades, such that 5-year overall survival is estimated to be 89% in children
- Unfortunately, as age of diagnosis increases, the overall survival rates decrease; adolescents and young adults have an estimated 61% overall survival, while adults diagnosed with ALL have only a 20% to 40% overall survival
- Aside from patient age, prognosis is also influenced by cytogenetic markers or genetic abnormalities
- Newly diagnosed pediatric ALL patients are often classified for the purposes of treatment as being low risk, standard risk, high risk, or very high risk
- All treatment regimens for ALL are generally divided into phases
  - These phases often include induction, consolidation, and maintenance

Disease State Description - Oncology, Injectable

Esophageal Cancer

- Squamous cell carcinoma (SCC) and adenocarcinoma account for over 95 percent of esophageal malignant tumors
  - In the 1960s, SCC accounted for more than 90 percent of esophageal tumors in the United States, and adenocarcinomas were considered uncommon
  - However, adenocarcinoma now accounts for more than 60 percent of all esophageal cancers in the US
- Patients with advanced thoracic or cervical esophageal carcinoma usually present with progressive dysphagia and weight loss
- The diagnosis of esophageal or esophagogastric junction (EGJ) cancer is usually established by endoscopic biopsy
  - Early cancers may appear as superficial plaques, nodules, or ulcerations
  - Advanced lesions may appear as strictures, ulcerated masses, circumferential masses, or large ulcerations
  - The endoscopic appearance of a large mucosal mass is frequently diagnostic of esophageal cancer
  - Biopsies confirm the diagnosis in more than 90 percent of cases
- The prognosis of esophageal cancer is strongly associated with disease stage
  - Accurate clinical staging of both local tumor extent and the presence or absence of distant metastases is critical for estimating prognosis and selecting the appropriate treatment strategy

Disease State Description - Oncology, Injectable

Ovarian Cancer (Including Fallopian Tube or Primary Peritoneal Cancer)

- The risk of ovarian cancer increases with age, with the median age at diagnosis is 63 years
- 5-year survival is 50.8%
- More than half of patients present with advanced disease
- Ovarian cancer has been shown to have a higher prevalence in families with BRCA1 or BRCA2 genotypes and, in these patients, the onset of disease is usually at a younger age
  - However, patients with these mutations account for only 15% of all ovarian cancers
- Primary treatment for advanced ovarian cancer usually begins with cytoreductive surgery to remove as much gross disease as possible because patients with more complete debulking have better outcomes
- Majority of patients, excluding those with very early-stage disease, are recommended to receive postoperative, adjuvant systemic chemotherapy
- Recommended protocols generally include a taxane (paclitaxel or docetaxel) and a platinum agent (cisplatin or carboplatin)

Disease State Description - Oncology, Injectable

Follicular Lymphoma (FL)

- Most common subtype of indolent non-Hodgkin’s lymphoma (NHL) and accounts for approximately 22% of all newly diagnosed cases of NHL
- While the clinical course of FL is usually indolent with about 90% of diagnosed patients surviving to 5 years post-diagnosis and about 50% of patients surviving to 20 years post-diagnosis, about 3% of patients progress to a more aggressive lymphoma such as diffuse large B-cell lymphoma (DLBCL)

Disease State Description - Oncology, Injectable

Multiple Myelomas (MM)

- Multiple myeloma is a malignant neoplasm of plasma cells that accumulate in the bone marrow leading to bone destruction and marrow failure
- Multiple myeloma accounts for approximately 1.8% of all malignancies and 18% of all hematologic malignancies in the US
- The median age of diagnosis is 69 years
- The 5-year relative survival rate is 57.9%, and overall survival now is estimated to be 8 to 10 years among patients with standard-risk disease, but it is significantly lower in patients that exhibit high-risk features
- Patients with symptomatic MM must have ≥ 1 myeloma-defining event which may include hypercalcemia, renal insufficiency, anemia, or lytic bone lesions
  - This constellation of effects is often referred to by the acronym “CRAB” and is likely an indicator of end organ dysfunction associated with MM
- Multiple myeloma is sensitive to a variety of agents, but the disease is not considered curable with currently available drug therapies
- The clinical course of MM usually involves initial responses to chemotherapy, but these responses may be transient; thus, re-treatment with multiple rounds of therapy with different agents may be required to treat relapse

Disease State Description - Oncology, Injectable

Hepatocellular Carcinoma (HCC)

- The incidence of liver cancer stabilized in the past few years, particularly in men; however, this stabilization followed decades of increases
- Rates for younger adults (< 50 years) decreased from 2015 to 2019 by 2.6% per year for liver cancer
- In March 2024, American Society of Clinical Oncology (ASCO) updated its guidelines on the use of systemic therapy for advanced hepatocellular carcinoma (HCC)
  - First line treatment in patients with Child-Pugh class A advanced HCC who have an ECOG performance status score of 0 or 1: atezolizumab plus bevacizumab or durvalumab plus tremelimumab (a strong recommendation); sorafenib, lenvatinib, or durvalumab are alternatives
  - Second-line treatment for patients with Child-Pugh class A advanced HCC with good performance status is based on the first line treatment used, and include tyrosine kinase inhibitor (TKI), nivolumab + ipilimumab, as well as durvalumab + tremelimumab or atezolizumab + bevacizumab (if not used as first-line)
  - For third-line treatment in patients with Child-Pugh class A and good performance status, any of the previously mentioned agents may be used if they do not have an identical mechanism of action as a previously used agent

Disease State Description - Oncology, Injectable

Alveolar Soft Part Sarcoma (ASPS)

- Rare, slow growing soft tissue tumor of an unclear cause
- It is among the least common sarcomas, representing 0.2-1 percent of large studies of soft tissue sarcomas
- ASPS is characterized by a painless mass that most commonly arises in the leg or buttock, with a particular affinity to travel to the lungs as multiple nodules, presumably while the sarcoma itself is still small
- This disorder is very rare because it involves a specific breaking and joining event between two chromosomes, called an “unbalanced translocation”
  - This finding is observed in essentially all people with ASPS examined so far and cannot be passed on to children
  - There are no families in which multiple family members have the disorder
- ASPS tends to occur more often in younger individuals, specifically adolescents and young adults
- Treatment is with surgery for the primary place where the sarcoma arises
- Radiation therapy is sometimes considered as an adjunct to surgery depending on the tumor characteristics (size, location, microscopic appearance)
- For disease that travels to the lungs, sometimes surgery is possible to remove nodules, but often systemic therapy is the only option for treatment

Oncology, Injectable

Keytruda (pembrolizumab) – Clinical Updates

October 2023 – New Indication

- FDA approved for treatment of patients with resectable (tumors ≥4 cm or node positive) NSCLC in combination with platinum-containing chemotherapy as neoadjuvant treatment, and then continued as a single agent as adjuvant therapy after surgery

November 2023 – New Indications, Revised Indication

- FDA approved for use in combination with gemcitabine and cisplatin for locally advanced unresectable or metastatic biliary tract cancer (BTC)
- FDA revised the indication of pembrolizumab with trastuzumab, fluoropyrimidine, and platinum-containing chemotherapy for first-line treatment of patients with locally advanced unresectable or metastatic human epidermal growth factor receptor 2 (HER2) -positive gastric or gastroesophageal junction (GEJ) adenocarcinoma to restrict use to patients whose tumors express program death-ligand 1 (PD-L1) (combined positive score [CPS] ≥ 1) as determined by an FDA-approved test; FDA also approved the Agilent PD-L1 IHC 22C3 pharmDx companion diagnostic device
- FDA approved for use in combination with fluoropyrimidine- and platinum-containing chemotherapy for the first-line treatment of adults with locally advanced unresectable or metastatic HER2-negative gastric or GEJ adenocarcinoma

December 2023 – Expanded Indication

- FDA expanded the advanced/metastatic urothelial cancer indication to include the following: Keytruda in combination with enfortumab vedotin-ejfv for treatment of adults with locally advanced or metastatic urothelial cancer (removed limitation of ineligibility for cisplatin-containing chemotherapy); also granted this indication full approval (from Accelerated Approval)

January 2024 – New Indication

- FDA approved for use in combination with chemoradiotherapy, for treatment of patients with FIGO 2014 Stage III-IVA cervical cancer

June 2024 – New Indication

- FDA approved for use in combination with carboplatin and paclitaxel, followed by Keytruda as a single agent, for the treatment of adults with primary advanced or recurrent endometrial carcinoma

Keytruda (pembrolizumab) – FDA Indications

- Melanoma
  - For the treatment of patients with unresectable or metastatic melanoma
  - For the adjuvant treatment of adult and pediatric (12 years and older) patients with Stage IIB, IIC, or III melanoma following complete resection
- **Non-Small Cell Lung Cancer (NSCLC)**
  - In combination with pemetrexed and platinum chemotherapy, as first-line treatment of patients with metastatic nonsquamous NSCLC, with no EGFR or ALK genomic tumor aberrations
  - In combination with carboplatin and either paclitaxel or paclitaxel protein-bound, as first-line treatment of patients with metastatic squamous NSCLC
  - As a single agent for the first-line treatment of patients with NSCLC expressing PD-L1 [Tumor Proportion Score (TPS) ≥1%] as determined by an FDA-approved test, with no EGFR or ALK genomic tumor aberrations, and is:
    - Stage III where patients are not candidates for surgical resection or definitive chemoradiation, or
    - Metastatic
  - As a single agent for the treatment of patients with metastatic NSCLC whose tumors express PD-L1 (TPS ≥1%) as determined by an FDA-approved test, with disease progression on or after platinum-containing chemotherapy; patients with EGFR or ALK genomic tumor aberrations should have disease progression on FDA-approved therapy for these aberrations prior to receiving Keytruda
  - **For the treatment of patients with resectable (tumors ≥4 cm or node positive) NSCLC in combination with platinum-containing chemotherapy as neoadjuvant treatment, and then continued as a single agent as adjuvant treatment after surgery**
  - As a single agent, for adjuvant treatment following resection and platinum-based chemotherapy for adult patients with Stage IB (T2a ≥4 cm), II, or IIIA NSCLC
- Malignant Pleural Mesothelioma (MPM)
  - In combination with pemetrexed and platinum chemotherapy, as first-line treatment of adult patients with unresectable advanced or metastatic MPM
- Head and Neck Squamous Cell Cancer (HNSCC)
  - In combination with platinum and FU for the first-line treatment of patients with metastatic or with unresectable, recurrent HNSCC
  - As a single agent for the first-line treatment of patients with metastatic or with unresectable, recurrent HNSCC whose tumors express PD-L1 [Combined Positive Score (CPS) ≥1] as determined by an FDA-approved test
  - As a single agent for the treatment of patients with recurrent or metastatic HNSCC with disease progression on or after platinum-containing chemotherapy

Keytruda (pembrolizumab) – FDA Indications

- Classical Hodgkin Lymphoma (cHL)
  - For the treatment of adult patients with relapsed or refractory cHL
  - For the treatment of pediatric patients with refractory cHL, or cHL that has relapsed after 2 or more lines of therapy
- Primary Mediastinal Large B-Cell Lymphoma (PMBCL)
  - For the treatment of adult and pediatric patients with refractory PMBCL, or who have relapsed after 2 or more prior lines of therapy
  - Limitations of Use: Keytruda is not recommended for treatment of patients with PMBCL who require urgent cytoreductive therapy
- **Urothelial Cancer**
  - **In combination with enfortumab vedotin, for the treatment of adult patients with locally advanced or metastatic urothelial cancer**
  - As a single agent for the treatment of patients with locally advanced or metastatic urothelial carcinoma who:
    - Are not eligible for any platinum-containing chemotherapy, or
    - who have disease progression during or following platinum-containing chemotherapy or within 12 months of neoadjuvant or adjuvant treatment with platinum containing chemotherapy
  - As a single agent for the treatment of patients with Bacillus Calmette-Guerin (BCG)-unresponsive, high-risk, non-muscle invasive bladder cancer (NMIBC) with carcinoma in situ (CIS) with or without papillary tumors who are ineligible for or have elected not to undergo cystectomy
- Microsatellite Instability-High or Mismatch Repair Deficient Cancer
  - For the treatment of adult and pediatric patients with unresectable or metastatic microsatellite instability-high (MSI-H) or mismatch repair deficient (dMMR) solid tumors, as determined by an FDA-approved test, that have progressed following prior treatment and who have no satisfactory alternative treatment options
- Microsatellite Instability-High or Mismatch Repair Deficient Colorectal Cancer (CRC)
  - For the treatment of patients with unresectable or metastatic MSI-H or dMMR colorectal cancer (CRC) as determined by an FDA-approved test
- Merkel Cell Carcinoma (MCC)
  - For the treatment of adult and pediatric patients with recurrent locally advanced or metastatic Merkel cell carcinoma
- Hepatocellular Carcinoma (HCC)
  - For the treatment of patients with HCC secondary to hepatitis B who have received prior systemic therapy other than a PD1/PD-L1-containing regimen

Keytruda (pembrolizumab) – FDA Indications

- **Gastric Cancer**
  - **In combination with trastuzumab, fluoropyrimidine- and platinum-containing chemotherapy, for the first-line treatment of adults with locally advanced unresectable or metastatic HER2-positive gastric or gastroesophageal junction (GEJ) adenocarcinoma whose tumors express PD-L1 (CPS ≥1) as determined by an FDA-approved test**
  - **In combination with fluoropyrimidine- and platinum-containing chemotherapy, for the first-line treatment of adults with locally advanced unresectable or metastatic HER2-negative gastric or gastroesophageal junction (GEJ) adenocarcinoma**
- Esophageal Cancer
  - For the treatment of patients with locally advanced or metastatic esophageal or gastroesophageal junction (GEJ) (tumors with epicenter 1 to 5 centimeters above the GEJ) carcinoma that is not amenable to surgical resection or definitive chemoradiation either:
    - In combination with platinum- and fluoropyrimidine-based chemotherapy, or
    - As a single agent after one or more prior lines of systemic therapy for patients with tumors of squamous cell histology that express PD-L1 (CPS ≥10) as determined by an FDA-approved test
- **Cervical Cancer**
  - **In combination with chemoradiotherapy, for the treatment of patients with FIGO 2014 Stage III-IVA cervical cancer**
  - In combination with chemotherapy, with or without bevacizumab, for the treatment of patients with persistent, recurrent, or metastatic cervical cancer whose tumors express PD-L1 (CPS ≥1) as determined by an FDA-approved test
  - As a single agent for the treatment of patients with recurrent or metastatic cervical cancer with disease progression on or after chemotherapy whose tumors express PD-L1 (CPS ≥1) as determined by an FDA-approved test
- Renal Cell Carcinoma (RCC)
  - In combination with axitinib, for the first-line treatment of adult patients with advanced RCC
  - In combination with lenvatinib, for the first-line treatment of adult patients with advanced RCC
  - For the adjuvant treatment of patients with RCC at intermediate-high or high risk of recurrence following nephrectomy, or following nephrectomy and resection of metastatic lesions

Keytruda (pembrolizumab) – FDA Indications

- **Endometrial Carcinoma**
  - **In combination with carboplatin and paclitaxel, followed by Keytruda as a single agent, for the treatment of adult patients with primary advanced or recurrent endometrial carcinoma**
  - In combination with lenvatinib, for the treatment of adult patients with advanced endometrial carcinoma that is mismatch repair proficient (pMMR) as determined by an FDA approved test or not MSI-H, who have disease progression following prior systemic therapy in any setting and are not candidates for curative surgery or radiation
  - As a single agent, for the treatment of adult patients with advanced endometrial carcinoma that is MSI-H or dMMR, as determined by an FDA-approved test, who have disease progression following prior systemic therapy in any setting and are not candidates for curative surgery or radiation
- Tumor Mutational Burden-High (TMB-H) Cancer
  - For the treatment of adult and pediatric patients with unresectable or metastatic tumor mutational burden-high (TMB-H) [≥10 mutations/megabase (mut/Mb)] solid tumors, as determined by an FDA-approved test, that have progressed following prior treatment and who have no satisfactory alternative treatment options
  - Limitations of Use: The safety and effectiveness of Keytruda in pediatric patients with TMB-H central nervous system cancers have not been established
- Triple-Negative Breast Cancer (TNBC)
  - For the treatment of patients with high-risk early-stage TNBC in combination with chemotherapy as neoadjuvant treatment, and then continued as a single agent as adjuvant treatment after surgery
  - In combination with chemotherapy, for the treatment of patients with locally recurrent unresectable or metastatic TNBC whose tumors express PD-L1 (CPS ≥10) as determined by an FDA approved test
- Adult Classical Hodgkin Lymphoma and Adult Primary Mediastinal Large B-Cell Lymphoma: Additional Dosing Regimen of 400 mg Every 6 Weeks
  - For use at an additional recommended dosage of 400 mg every 6 weeks for Classical Hodgkin Lymphoma and Primary Mediastinal Large B-Cell Lymphoma in adults
- **Biliary Tract Cancer (BTC)**
  - **In combination with gemcitabine and cisplatin, for the treatment of patients with locally advanced unresectable or metastatic biliary tract cancer**
- Cutaneous Squamous Cell Carcinoma (cSCC)
  - For the treatment of patients with recurrent or metastatic cSCC or locally advanced cSCC that is not curable by surgery or radiation

Keytruda (pembrolizumab)

Warnings:

- Immune-Mediated Adverse Reactions: May be severe or fatal, can occur in any organ system or tissue, including the following: immune-mediated pneumonitis, immune-mediated colitis, immune-mediated hepatitis, immune-mediated endocrinopathies, immune-mediated nephritis with renal dysfunction, immune-mediated dermatologic adverse reactions, and solid organ transplant rejection
- Infusion-related reactions: Interrupt, slow the rate of infusion, or permanently discontinue based on the severity of reaction
- Complications of allogeneic HSCT: Fatal and other serious complications can occur in patient who receive allogeneic hematopoietic stem cell transplantation (HSCT) before or after being treated with a PD-1/PD-L1 blocking antibody
- Embryo-Fetal toxicity: Can cause fetal harm; advise females of reproductive potential of the potential risk to a fetus and to use effective method of contraception

Recommended Dosage:

- **Stratified by indication and age**
- **Administer as an intravenous infusion over 30 minutes after dilution**
- **NSCLC: 200 mg every 3 weeks or 400 mg every 6 weeks**
- **BTC: 200 mg every 3 weeks or 400 mg every 6 weeks**
- **Gastric Cancer: 200 mg every 3 weeks or 400 mg every 6 weeks**
- **Urothelial Cancer: 200 mg every 3 weeks or 400 mg every 6 weeks**
- **Cervical Cancer: 200 mg every 3 weeks or 400 mg every 6 weeks**
- **Endometrial Carcinoma: 200 mg every 3 weeks or 400 mg every 6 weeks**

Availability:

- Injection: 100 mg/4 mL (25 mg/mL) solution in a single-dose vial

Oncology, Injectable

Opdivo (nivolumab)

October 2023 – Expanded Indication

- **FSA approved expanded indication for melanoma to include stage 2b and stage 2c. Updated indication is for the adjuvant treatment of patients ≥ 12 years old with completely resected stages 2b, 2c, 3, or 4 melanoma.**

March 2024 – New Indication

- **FDA approved in combination with cisplatin and gemcitabine for first-line treatment of adults with unresectable or metastatic urothelial carcinoma (UC)**

FDA Indications:

- **Melanoma**
  - Adult and pediatric (12 years and older) patients with unresectable or metastatic melanoma, as a single agent or in combination with ipilimumab
  - **For the adjuvant treatment of adult and pediatric patients 12 years and older with completely resected Stage IIB, Stage IIC, Stage III, or Stage IV melanoma**
- Non-Small Cell Lung Cancer (NSCLC)
  - Adult patients with resectable (tumors ≥4 cm or node positive) non-small cell lung cancer in the neoadjuvant setting, in combination with platinum-doublet chemotherapy
  - Adult patients with metastatic non-small cell lung cancer expressing PD-L1 (≥1%) as determined by an FDA-approved test, with no EGFR or ALK genomic tumor aberrations, as first-line treatment in combination with ipilimumab
  - Adult patients with metastatic or recurrent non-small cell lung cancer with no EGFR or ALK genomic tumor aberrations as first-line treatment, in combination with ipilimumab and 2 cycles of platinum-doublet chemotherapy
  - Adult patients with metastatic non-small cell lung cancer and progression on or after platinum-based chemotherapy. Patients with EGFR or ALK genomic tumor aberrations should have disease progression on FDA-approved therapy for these aberrations prior to receiving Opdivo

Oncology, Injectable

Opdivo (nivolumab)

FDA Indications:

- Malignant Pleural Mesothelioma
  - Adult patients with unresectable malignant pleural mesothelioma, as first-line treatment in combination with ipilimumab
- Renal Cell Carcinoma (RCC)
  - Adult patients with intermediate or poor risk advanced renal cell carcinoma, as a first-line treatment in combination with ipilimumab
  - Adult patients with advanced renal cell carcinoma, as a first-line treatment in combination with cabozantinib
  - Adult patients with advanced renal cell carcinoma who have received prior anti-angiogenic therapy
- Squamous Cell Carcinoma of the Head and Neck (SCCHN)
  - Adult patients with recurrent or metastatic squamous cell carcinoma of the head and neck with disease progression on or after a platinum-based therapy
- Classical Hodgkin Lymphoma (cHL)
  - Adult patients with classical Hodgkin lymphoma that has relapsed or progressed after autologous hematopoietic stem cell transplantation (HSCT) and brentuximab vedotin, or three or more lines of systemic therapy that includes autologous HSCT
- **Urothelial Carcinoma**
  - Adjuvant treatment of adult patients with urothelial carcinoma (UC) who are at high risk of recurrence after undergoing radical resection of UC
  - **Adult patients with locally advanced or metastatic urothelial carcinoma who:**
    - **Have disease progression during or following platinum-containing chemotherapy**
    - **Have disease progression within 12 months of neoadjuvant or adjuvant treatment with platinum-containing chemotherapy**

Oncology, Injectable

Opdivo (nivolumab)

FDA Indications:

- Colorectal Cancer
  - Adult and pediatric (12 years and older) patients with microsatellite instability-high (MSI-H) or mismatch repair deficient (dMMR) metastatic colorectal cancer that has progressed following treatment with a fluoropyrimidine, oxaliplatin, and irinotecan, as a single agent or in combination with ipilimumab
- Hepatocellular Carcinoma (HCC)
  - Adult patients with hepatocellular carcinoma who have been previously treated with sorafenib in combination with ipilimumab
- Esophageal Cancer
  - Adult patients with completely resected esophageal or gastroesophageal junction cancer with residual pathologic disease, who have received neoadjuvant chemoradiotherapy (CRT)
  - Adult patients with unresectable advanced or metastatic esophageal squamous cell carcinoma as first-line treatment in combination with fluoropyrimidine- and platinum-containing chemotherapy
  - Adult patients with unresectable advanced or metastatic esophageal squamous cell carcinoma as first-line treatment in combination with ipilimumab
  - Adult patients with unresectable advanced, recurrent or metastatic esophageal squamous cell carcinoma (ESCC) after prior fluoropyrimidine- and platinum-based chemotherapy
- Gastric Cancer, Gastroesophageal Junction Cancer, and Esophageal Adenocarcinoma
  - Adult patients with advanced or metastatic gastric cancer, gastroesophageal junction cancer, and esophageal adenocarcinoma in combination with fluoropyrimidine- and platinum-containing chemotherapy

Oncology, Injectable

Opdivo (nivolumab)

Warnings:

- Immune-Mediated Adverse Reactions: May be severe or fatal, can occur in any organ system or tissue, including the following: immune-mediated pneumonitis, immune-mediated colitis, immune-mediated hepatitis and hepatotoxicity, immune-mediated endocrinopathies, immune-mediated dermatologic adverse reactions, and immune mediated nephritis and renal dysfunction
- Infusion-related reactions: Interrupt, slow the rate of infusion, or permanently discontinue based on the severity of reaction
- Complications of allogeneic HSCT: Fatal and other serious complications can occur in patient who receive allogeneic hematopoietic stem cell transplantation (HSCT) before or after being treated with a PD-1/PD-L1 blocking antibody
- Embryo-Fetal toxicity: Can cause fetal harm; advise females of reproductive potential of the potential risk to a fetus and to use effective method of contraception

Recommended Dosage:

- **Stratified by indication, age, and weight**
- **Administer by intravenous infusion after dilution based upon recommended infusion rate for each indication**
- **Adjuvant treatment of melanoma**
  - **Pediatric patients < 40 kg: 3 mg/kg every 2 weeks or 6 mg/kg every 4 weeks**
  - **Adult and pediatric patients ≥ 40 kg: 240 mg every 2 weeks or 480 mg every 4 weeks**
- **Adjuvant treatment of urothelial carcinoma: 240 mg every 2 weeks or 480 mg every 4 weeks**

Availability:

- Injection: 40 mg/4 mL (10 mg/mL), 100 mg/10 mL (10 mg/mL), 120 mg/12 mL (10 mg/mL), and 240 mg/24 mL (10 mg/mL) solution in a single-dose vial

Loqtorzi (toripalimab-tpzi)

October 2023 – New Drug

- PD-1-blocking antibody as the first FDA-approved medication for the following indications:
  - In combination with cisplatin and gemcitabine for first-line treatment of adults with metastatic or recurrent locally advanced nasopharyngeal carcinoma (NPC), and
  - As a single agent for treatment of adults with recurrent unresectable or metastatic NPC with disease progression on or after platinum-containing chemotherapy

Warnings:

- Immune-Mediated Adverse Reactions: May be severe or fatal, can occur in any organ system or tissue
- Infusion-related reactions: Interrupt, slow the rate of infusion, or permanently discontinue based on the severity of reaction
- Complications of allogeneic HSCT: Fatal and other serious complications can occur in patient who receive allogeneic hematopoietic stem cell transplantation (HSCT) before or after being treated with a PD-1/PD-L1 blocking antibody
- Embryo-Fetal toxicity: Can cause fetal harm; advise females of reproductive potential of the potential risk to a fetus and to use effective method of contraception

Recommended Dosage:

- In combination with cisplatin and gemcitabine: 240 mg intravenously every three weeks
- As a single agent: 3 mg/kg intravenously every two week
- First Infusion: Infuse over 60 minutes
- Subsequent Infusions: If no infusion-related reactions occurred during the first infusion, subsequent infusions may be administered over 30 minutes

Availability:

- Injection: 240 mg/6 mL (40 mg/mL) solution in a single-dose vial

Padcev (enfortumab vedotin-ejfv)

December 2023 – Expanded Indication

- **FDA approved expanded indication for use in combination with pembrolizumab for the treatment of adults with locally advanced or metastatic urothelial cancer**

FDA Indications:

- **In combination with pembrolizumab for the treatment of adult patients with locally advanced or metastatic urothelial cancer**
- As a single agent for the treatment of adult patients with locally advanced or metastatic urothelial cancer who:
  - Have previously received a PD-1 or PD-L1 inhibitor and platinum- containing chemotherapy, or
  - Are ineligible for cisplatin-containing chemotherapy and have previously received one or more prior lines of therapy

Warnings:

- BBW: Serious skin reactions [Stevens-Johnson syndrome (SJS) and Toxic Epidermal Necrolysis (TEN)]
- Hyperglycemia, Pneumonitis/Interstitial Lung Disease (ILD), Peripheral Neuropathy, Ocular Disorders, Infusion Site Extravasation, Embryo-Fetal Toxicity, avoid use in patients with moderate or severe hepatic impairment

Recommended Dosage:

- **In combination with pembrolizumab: 1.25 mg/kg (up to a maximum dose of 125 mg) given as an intravenous infusion over 30 minutes on Days 1 and 8 of a 21-day cycle until disease progression or unacceptable toxicity**
- Single agent: 1.25 mg/kg (up to a maximum dose of 125 mg) given as an intravenous infusion over 30 minutes on Days 1, 8 and 15 of a 28-day cycle until disease progression or unacceptable toxicity

Availability:

- For Injection: 20 mg and 30 mg as a lyophilized powder in a single-dose vial for reconstitution

Besponsa (inotuzumab ozogamicin)

March 2024 – Expanded Indication

- **FDA approved for treatment of relapsed or refractory CD22-positive B-cell precursor acute lymphoblastic leukemia (ALL) in adult and pediatrics ≥ 1 years old**
  - **Previously only indicated for treatment of adults for this indication**

FDA Indications:

- **Treatment of relapsed or refractory CD22-positive B-cell precursor ALL in adult and pediatric patients 1 year and older**

Warnings:

- BBW: Hepatotoxicity, including vena-occlusive disease (VOD) (also known as sinusoidal obstruction syndrome) and increased risk of post-hematopoietic stem cell transplant (HSCT) non-relapse mortality
- Myelosuppression, infusion site reactions, QT interval prolongation, embryo-fetal toxicity

Recommended Dosage:

- **Based on patient's body surface area (BSA)**
- **First cycle for all patients: 1.8 mg/m^2 per cycle, administered as 3 divided doses on Day 1 (0.8 mg/m^2), Day 8 (0.5 mg/m^2), and Day 15 (0.5 mg/m^2)**
  - **Cycle 1 is 3 weeks in duration, but may be extended to 4 weeks if the patient achieves a complete remission (CR) or complete remission with incomplete hematologic recovery (CRi), and/or to allow recovery from toxicity**
- **See PI/TCR for recommended dosage for subsequent cycles**

Availability:

- For injection: 0.9 mg lyophilized powder in a single-dose vial for reconstitution and further dilution

Oncology, Injectable

Rybrevant (amivantamab-vmjw)

March 2024 – New Indication, Full approval

- **FDA approved in combination with carboplatin and pemetrexed for first-line treatment of adults with locally advanced or metastatic NSCLC with EGFR exon 20 insertion mutations, as detected by an FDA-approved test**
- **FDA has also granted traditional full approval as a single agent for treatment of adults with locally advanced or metastatic NSCLC with EGFR exon 20 insertion mutations, as detected by an FDA-approved test, whose disease has progressed on or after platinum-based chemotherapy**

August 2024 – New Indication

- **FDA approved in combination with lazertinib for first-line treatment of adults with locally advanced or metastatic NSCLC with EGFR exon 19 deletions or exon 21 L858R substitution mutations, as detected by an FDA-approved test**

FDA Indications:

- **In combination with lazertinib for the first-line treatment of adult patients with locally advanced or metastatic non-small cell lung cancer (NSCLC) with epidermal growth factor receptor (EGFR) exon 19 deletions or exon 21 L858R substitution mutations, as detected by an FDA-approved test**
- In combination with carboplatin and pemetrexed for the treatment of adult patients with locally advanced or metastatic NSCLC with EGFR exon 19 deletions or exon 21 L858R substitution mutations, whose disease has progressed on or after treatment with an EGFR tyrosine kinase inhibitor
- **In combination with carboplatin and pemetrexed for the first-line treatment of adult patients with locally advanced or metastatic NSCLC with EGFR exon 20 insertion mutations, as detected by an FDA-approved test**
- **As a single agent for the treatment of adult patients with locally advanced or metastatic NSCLC with EGFR exon 20 insertion mutations, as detected by an FDA-approved test, whose disease has progressed on or after platinum-based chemotherapy**

Oncology, Injectable

Rybrevant (amivantamab-vmjw)

Warnings:

- Infusion-related reactions, interstitial lung disease (ILD)/pneumonitis, venous thromboembolic (VTE) events with concomitant use with Lazertinib, dermatologic adverse reactions (severe rash including TEN and acneiform dermatitis), ocular toxicity, and embryo-fetal toxicity

Recommended Dosage:

- **Based on baseline body weight and administered as an intravenous infusion after dilution**
- **In combination with carboplatin and pemetrexed: Administer every 3 weeks and the order of administration is pemetrexed first, carboplatin second, and Rybrevant last**
- **In combination with lazertinib: Administer weekly from weeks 1 to 5, then every 2 weeks starting week 7 and onwards (no dose should be given during week 6)**
  - **Treatment should be administered until disease progression or unacceptable toxicity**
  - **When given on the same day, Rybrevant should be administered after lazertinib**
  - **Administer anticoagulant prophylaxis during the first 4 months of treatment to prevent venous thromboembolic (VTE) events**

Availability:

- Injection: 350 mg/7 mL (50 mg/mL) solution in a single-dose vial

Tevimbra (tislelizumab-jsgr)

March 2024 – New Drug

- **FDA approved PD-1 blocking antibody as monotherapy for treatment of adults with unresectable or metastatic esophageal squamous cell carcinoma (ESCC) after prior systemic chemotherapy that did not include a PD-(L)1 inhibitor**

Warnings:

- **Immune-Mediated Adverse Reactions: May be severe or fatal, can occur in any organ system or tissue**
- **Infusion-related reactions: Interrupt, slow the rate of infusion, or permanently discontinue based on the severity of reaction**
- **Complications of allogeneic HSCT: Fatal and other serious complications can occur in patient who receive allogeneic hematopoietic stem cell transplantation (HSCT) before or after being treated with a PD-1/PD-L1 blocking antibody**
- **Embryo-Fetal toxicity: Can cause fetal harm; advise females of reproductive potential of the potential risk to a fetus and to use effective method of contraception**

Recommended Dosage:

- **200 mg as an intravenous infusion once every 3 weeks until disease progression or unacceptable toxicity**
- **Administer the first infusion over 60 minutes; if tolerated, subsequent infusions may be administered over 30 minutes**

Availability:

- **Injection: 100 mg/10 mL (10 mg/mL) solution in a single-dose vial**

Oncology, Injectable

Elahere (mirvetuximab soravtansine-gynx)

March 2024 – Updated Indication

- **FDA converted Accelerated Approval to Full Approval for adult patients with folate receptor alpha (FRα) positive, platinum-resistant epithelial ovarian, fallopian tube, or primary peritoneal cancer, who have received one to three prior systemic treatment regimens**

FDA Indications:

- **Treatment of adult patients with FRα positive, platinum-resistant epithelial ovarian, fallopian tube, or primary peritoneal cancer, who have received one to three prior systemic treatment regimens; select patients for therapy based on an FDA-approved test**

Warnings:

- BBW: Ocular Toxicities (visual impairment, keratopathy, dry eye, photophobia, eye pain, and uveitis)
- Pnemonitis: Withhold for persistent or recurrent Grade 2 pneumonitis and consider dose reduction; permanently discontinue for Grade 3 or 4 pneumonitis
- Peripheral Neuropathy: Monitor patients for new or worsening peripheral neuropathy; withhold dosage, dose reduce, or permanently discontinue based on the severity of peripheral neuropathy
- Embryo-Fetal toxicity: Can cause fetal harm; advise females of reproductive potential of the potential risk to a fetus and to use effective method of contraception

Recommended Dosage:

- 6 mg/kg adjusted ideal body weight administered as an intravenous infusion every 3 weeks until disease progression or unacceptable toxicity

Availability:

- Injection: 100 mg/20 mL (5 mg/mL) in a single-dose vial

Enhertu (fam-trastuzumab deruxtecan-nxki)

April 2024 – New Indication

- **FDA has granted Accelerated Approval for treatment of adults with unresectable or metastatic HER2-positive (immunohistochemistry [IHC] 3+) solid tumors who have received prior systemic treatment and have no satisfactory alternative treatment options**

FDA Indications:

- Treatment in adult patients with unresectable or metastatic HER2-positive (IHC 3+ or ISH positive) breast cancer who have received a prior anti-HER2-based regimen either: (1) in the metastatic setting, or (2) in the neoadjuvant or adjuvant setting and have developed disease recurrence during or within six months of completing therapy
- Treatment in adult patients with unresectable or metastatic HER2-low (IHC 1+ or IHC 2+/ISH-) breast cancer, as determined by an FDA-approved test, who have received a prior chemotherapy in the metastatic setting or developed disease recurrence during or within 6 months of completing adjuvant chemotherapy
- Treatment in adult patients with unresectable or metastatic NSCLC whose tumors have activating HER2 (ERBB2) mutations, as detected by an FDA-approved test, and who have received a prior systemic therapy*
- Treatment in adult patients with locally advanced or metastatic HER2-positive (IHC 3+ or IHC 2+/ISH positive) gastric or gastroesophageal junction adenocarcinoma who have received a prior trastuzumab-based regimen
- **Treatment in adult patients with unresectable or metastatic HER2-positive (IHC 3+) solid tumors who have received prior systemic treatment and have no satisfactory alternative treatment options***

*** These indications are approved under accelerated approval based on objective response rate and duration of response. Continued approval for this indication may be contingent upon verification and description of clinical benefit in a confirmatory trial**

Enhertu (fam-trastuzumab deruxtecan-nxki)

Warnings:

- BBW: Interstitial Lung Disease (ILD) and Embryo-fetal Toxicity
- Neutropenia: Monitor complete blood counts prior to initiation and prior to each dose, and as clinically indicated
- Left Ventricular Dysfunction: Assess LVEF prior to initiation and at regular intervals during treatment as clinically indicated; manage through treatment interruption or discontinuation

Recommended Dosage:

- HER2-positive or HER2-low breast cancer, HER2-mutant NSCLC, and **HER2-positive (IHC 3+) solid tumors**: **5.4 mg/kg given as an intravenous infusion once every 3 weeks (21-day cycle) until disease progression or unacceptable toxicity**
- HER2-positive gastric cancer is 6.4 mg/kg given as an intravenous infusion once every 3 weeks (21-day cycle) until disease progression or unacceptable toxicity

Availability:

- For injection: 100 mg lyophilized powder in a single-dose vial

Oncology, Injectable

Tivdak (tisotumab vedotin-tftv)

May 2024 – Full Approval

- **FDA has granted traditional approval for recurrent or metastatic cervical cancer with disease progression on or after chemotherapy in adult patients**

FDA Indications:

- **Treatment of adult patients with recurrent or metastatic cervical cancer with disease progression on or after chemotherapy**

Warnings:

- BBW: Severe Ocular Toxicity (changes in visions, including severe vision loss and corneal ulceration)
- Peripheral neuropathy, hemorrhage, pneumonitis, embryo-fetal toxicity

Recommended Dosage:

- For intravenous infusion only; do not administer TIVDAK as an intravenous push or bolus
- Do not mix with, or administer as an infusion with, other medicinal products
- 2 mg/kg (up to a maximum of 200 mg) given as an intravenous infusion over 30 minutes every 3 weeks until disease progression or unacceptable toxicity

Availability:

- For Injection: 40 mg as a lyophilized cake or powder in a single-dose vial for reconstitution

Imdelltra (tarlatamab-dlle)

May 2024 – New Drug

- FDA granted an Accelerated Approval for Imdelltra for treatment of adults with extensive stage small cell lung cancer (ES-SCLC) with disease progression on or after platinum-based chemotherapy
  - This indication is approved under accelerated approval based on overall response rate and duration of response; continued approval for this indication may be contingent upon verification and description of clinical benefit in a confirmatory trial(s)

Warnings:

- BBW: Cytokine release syndrome (CRS), including serious or life-threatening reactions and Neurologic toxicity including Immune Effector Cell-Associated Neurotoxicity Syndrome (ICANS)
  - Requires patient monitoring for approximately 24 hours during and after the first 2 doses and patients should remain within 1 hour of the healthcare setting for a total of 48 hours; observation periods decrease for subsequent doses
- Cytopenias: Monitor complete blood counts prior to treatment, before each dose, and as clinically indicated; withhold or permanently discontinue based on severity
- Hepatotoxicity: Monitor liver enzymes and bilirubin prior to treatment, before each dose, and as clinically indicated; withhold or permanently discontinue based on severity
- Embryo-Fetal Toxicity: Advise females of reproductive potential of the potential risk to the fetus and to use effective contraception

Recommended Dosage:

- Administered via intravenous infusion over 1 hour with step-up doses given on cycle 1 days 1 (1 mg), 8 (10 mg), and 15 (10 mg), followed by administration of 10 mg every 2 weeks until disease progression or unacceptable toxicity

Availability:

- For injection: 1 mg or 10 mg of lyophilized powder in a single-dose vial for reconstitution and further dilution

Blincyto (blinatumomab)

June 2024 – New Indication

- **FDA approved for treatment of CD19-positive Philadelphia chromosome-negative B-cell precursor acute lymphoblastic leukemia (ALL) in the consolidation phase of multiphase chemotherapy in adult and pediatric patients ≥ 1 month of age**

FDA Indications:

- **Treatment of adult and pediatric patients one month and older with:**
  - CD19-positive B-cell precursor ALL in first or second complete remission with minimal residual disease (MRD) greater than or equal to 0.1%
  - Relapsed or refractory CD19-positive B-cell precursor ALL
  - **CD19-positive Philadelphia chromosome-negative B-cell precursor ALL in the consolidation phase of multiphase chemotherapy**

Warnings:

- BBW: Cytokine release syndrome (CRS), including serious or life-threatening reactions and Neurologic toxicity including Immune Effector Cell-Associated Neurotoxicity Syndrome (ICANS)
- Infections, effects on ability to drive and use machines, pancreatitis, preparation and administration errors, benzyl alcohol toxicity in neonates, and embryo-fetal toxicity

Recommended Dosage:

- See Full Prescribing Information for recommended dose by indication, patient weight, and schedule
- **CD19-positive Philadelphia chromosome-negative B-cell precursor ALL: Administered as a single cycle of 28 days of continuous infusion followed by a 14-day treatment-free interval (total 42 days)**
  - **Patients ≥ 45 kg: 28 mcg/day;**
  - **Patients < 45 kg:15 mcg/m^2/day (not to exceed 28 mcg/day)**

Availability:

- For injection: 35 mcg of lyophilized powder in a single-dose vial for reconstitution

Oncology, Injectable

Imfinzi (durvalumab)

June 2024 – New Indication

- **FDA approved new indication for use in combination with carboplatin and paclitaxel followed by Imfinzi as a single agent, for treatment of adults with primary advanced or recurrent endometrial cancer that is mismatch repair deficient (dMMR)**

August 2024 – New Indication

- **FDA approved new indication for use with platinum-containing chemotherapy as neoadjuvant treatment, followed by single-agent Imfinzi as adjuvant treatment after surgery for adults with resectable (tumors ≥ 4 cm and/or node positive) NSCLC and no known epidermal growth factor receptor (EGFR) mutations or anaplastic lymphoma kinase (ALK) rearrangements**

FDA Indications:

- **In combination with platinum-containing chemotherapy as neoadjuvant treatment, followed by Imfinzi continued as a single agent as adjuvant treatment after surgery, for the treatment of adult patients with resectable (tumors ≥ 4 cm and/or node positive) NSCLC and no known EGFR mutations or ALK rearrangements**
- As a single agent, for the treatment of adult patients with unresectable, Stage III NSCLC whose disease has not progressed following concurrent platinum-based chemotherapy and radiation therapy
- In combination with tremelimumab-actl and platinum-based chemotherapy, for the treatment of adult patients with metastatic NSCLC with no sensitizing EGFR mutations or ALK genomic tumor aberrations
- In combination with etoposide and either carboplatin or cisplatin, as first-line treatment of adult patients with extensive-stage small cell lung cancer (ES-SCLC)
- In combination with gemcitabine and cisplatin, as treatment of adult patients with locally advanced or metastatic biliary tract cancer (BTC)
- In combination with tremelimumab-actl, for the treatment of adult patients with unresectable hepatocellular carcinoma (uHCC)
- **In combination with carboplatin and paclitaxel followed by Imfinzi as a single agent, for the treatment of adult patients with primary advanced or recurrent endometrial cancer that is mismatch repair deficient (dMMR)**

Imfinzi (durvalumab)

Warnings:

- Immune-Mediated Adverse Reactions: May be severe or fatal, can occur in any organ system or tissue
- Infusion-related reactions: Interrupt, slow the rate of infusion, or permanently discontinue based on the severity of reaction
- Complications of allogeneic HSCT: Fatal and other serious complications can occur in patient who receive allogeneic hematopoietic stem cell transplantation (HSCT) before or after being treated with a PD-1/PD-L1 blocking antibody
- Embryo-Fetal toxicity: Can cause fetal harm; advise females of reproductive potential of the potential risk to a fetus and to use effective method of contraception

Recommended Dosage:

- **See Full Prescribing Information for recommended dose by indication, patient weight, and schedule**
- **dMMR endometrial cancer**
  - **Patients ≥ 30 kg: 1,120 mg in combination with carboplatin and paclitaxel every 3 weeks for 6 cycles, followed by 1,500 mg every 4 weeks as a single agent**
  - **Patients < 30 kg: 15 mg/kg every 3 weeks in combination with carboplatin and paclitaxel for 6 cycles, followed by 20 mg/kg every 4 weeks as a single agent**
- **Resectable NSCLC**
  - **Patients ≥ 30 kg: 1,500 mg**
  - **Patients < 30 kg: 20 mg/kg**
  - **Administered every 3 weeks (neoadjuvant treatment) and every 4 weeks (adjuvant treatment)**

Availability:

- Injection: 500 mg/10 mL (50 mg/mL) or 120mg/2.4 mL (50 mg/mL) solution in a single-dose vial

Epkinly (epcoritamab-bysp)

June 2024 – New Indication

- **FDA granted Accelerated Approval for the treatment of adults with relapsed or refractory follicular lymphoma (FL) after ≥ 2 lines of systemic therapy**

FDA Indications:

- Treatment of adult patients with relapsed or refractory diffuse large B-cell lymphoma (DLBCL), not otherwise specified, including DLBCL arising from indolent lymphoma, and high-grade B-cell lymphoma after two or more lines of systemic therapy
- **Treatment of adult patients with relapsed or refractory follicular lymphoma (FL) after two or more lines of systemic therapy. This indication is approved under accelerated approval based on objective response rate and duration of response. Continued approval for this indication may be contingent upon verification and description of clinical benefit in a confirmatory trial**

Warnings:

- BBW: Cytokine release syndrome (CRS), including serious or life-threatening reactions and Neurologic toxicity including Immune Effector Cell-Associated Neurotoxicity Syndrome (ICANS)
- Cytopenias: Monitor complete blood counts during treatment
- Embryo-Fetal Toxicity: Advise females of reproductive potential of the potential risk to the fetus and to use effective contraception

Recommended Dosage:

- **Requires step-up dosing over the course of 10 cycles (cycle length of 28 days) to a 48 mg dose given on day 1 of each cycle by the 10th cycle**

Availability:

- Injection: 4 mg/0.8 mL or 48 mg/0.8 mL in a single-dose vial

Oncology, Injectable

Darzalex Faspro (daratumumab/hyaluronidase-fihj)

August 2024 – New Indication

- **FDA approved in combination with bortezomib, lenalidomide, and dexamethasone (D-VRd) for induction and consolidation in patients with newly diagnosed multiple myeloma who are eligible for autologous stem cell transplant (ASCT)**

FDA Indications:

- **Multiple myeloma in combination with bortezomib, lenalidomide, and dexamethasone for induction and consolidation in newly diagnosed patients who are eligible for autologous stem cell transplant**
- Multiple myeloma in combination with bortezomib, melphalan and prednisone in newly diagnosed patients who are ineligible for ASCT
- Multiple myeloma in combination with lenalidomide and dexamethasone in newly diagnosed patients who are ineligible for autologous stem cell transplant and in patients with relapsed or refractory multiple myeloma who have received at least one prior therapy
- Multiple myeloma in combination with bortezomib, thalidomide, and dexamethasone in newly diagnosed patients who are eligible for autologous stem cell transplant multiple myeloma in combination with bortezomib and dexamethasone in patients who have received at least one prior therapy
- Multiple myeloma in combination with pomalidomide and dexamethasone in patients who have received at least one prior line of therapy including lenalidomide and a proteasome inhibitor
- Multiple myeloma in combination with carfilzomib and dexamethasone in patients with relapsed or refractory multiple myeloma who have received one to three prior lines of therapy
- Multiple myeloma as monotherapy, in patients who have received at least three prior lines of therapy including a proteasome inhibitor (PI) and an immunomodulatory agent or who are double-refractory to a PI and an immunomodulatory agent light chain (AL) amyloidosis in combination with bortezomib, cyclophosphamide and dexamethasone in newly diagnosed patients. This indication is approved under accelerated approval based on response rate. Continued approval for this indication may be contingent upon verification and description of clinical benefit in a confirmatory trial(s)

Limitation:

- **Not indicated and is not recommended for the treatment of patients with light chain (AL) amyloidosis who have NYHA Class IIIB or Class IV cardiac disease or Mayo Stage IIIB outside of controlled clinical trials**

Oncology, Injectable

Darzalex Faspro (daratumumab/hyaluronidase-fihj)

Warnings:

- Cardiac Toxicity in Patients with Light Chain (AL) Amyloidosis: Monitor patients with cardiac involvement more frequently for cardiac adverse reactions and administer supportive care as appropriate
- Neutropenia: Monitor complete blood cell counts periodically during treatment; monitor patients with neutropenia for signs of infection; consider withholding to allow recovery of neutrophils
- Thrombocytopenia: Monitor complete blood cell counts periodically during treatment; consider withholding to allow recovery of platelets
- Embryo-Fetal Toxicity: Can cause fetal harm; advise pregnant women of the potential risk to a fetus and advise females of reproductive potential touse effective contraception

Recommended Dosage:

- **For subcutaneous use only**
- **1,800 mg/30,000 units (1,800 mg daratumumab and 30,000 units hyaluronidase) administered subcutaneously into the abdomen over approximately 3 to 5 minutes according to recommended schedule**
- **Labeling includes full dosing schedule for induction and consolidation phases**

Availability:

- Injection: 1,800 mg daratumumab and 30,000 units hyaluronidase per 15 mL (120 mg and 2,000 units/mL) solution in a single-dose vial

Jemperli (dostarlimab-gxly)

August 2024 – Expanded Indication

- **FDA has approved Jemperli in combination with carboplatin and paclitaxel, followed by Jemperli as a single agent, for all adults with primary advanced or recurrent endometrial cancer (EC)**

FDA Indications:

- **In combination with carboplatin and paclitaxel, followed by Jemperli as a single agent, for the treatment of adult patients with primary advanced or recurrent endometrial cancer (EC)**
- As a single agent for the treatment of adult patients with mismatch repair deficient (dMMR) recurrent or advanced EC, as determined by an FDA-approved test, that has progressed on or following prior treatment with a platinum-containing regimen in any setting and are not candidates for curative surgery or radiation
- As a single agent for the treatment of adult patients with dMMR recurrent or advanced solid tumors, as determined by an FDA-approved test, that have progressed on or following prior treatment and who have no satisfactory alternative treatment options. This indication is approved under accelerated approval based on response rate. Continued approval for this indication may be contingent upon verification and description of clinical benefit in a confirmatory trial(s)

Warnings:

- Immune-mediated adverse reactions, infusion-related reactions, complications of allogeneic HSCT, and embryo-fetal toxicity

Recommended Dosage:

- For complete dosing instructions, see full prescribing information
- **In combination with carboplatin and paclitaxel, for primary advanced or recurrent EC: 500 mg IV every 3 weeks for 6 cycles, then 1,000 mg IV every 6 weeks as monotherapy until disease progression or unacceptable toxicity, or up to 3 year**

Availability:

- Injection: 500 mg/10 mL (50 mg/mL) solution in a single-dose vial

Tecentriq Hybreza (atezolizumab/hyaluronidase-tqjs)

September 2024 – New Formulation

- **FDA approved the combination PD-L1 blocking antibody (atezolizumab) and endoglycosidase (hyaluronidase) as the first and only PD-L1 inhibitor for subcutaneous injection in the United States**
  - **Approved for all of the adult indications of IV atezolizumab (Tecentriq)**

FDA Indications:

- **Non-Small Cell Lung Cancer (NSCLC)**
  - **As adjuvant treatment following resection and platinum-based chemotherapy for adult patients with Stage II to IIIA NSCLC whose tumors have PD-L1 expression on ≥ 1% of tumor cells, as determined by an FDA-approved test**
  - **For the first-line treatment of adult patients with metastatic NSCLC whose tumors have high PD-L1 expression (PD-L1 stained ≥ 50% of tumor cells [TC ≥ 50%] or PD-L1 stained tumor-infiltrating immune cells [IC] covering ≥ 10% of the tumor area [IC ≥ 10%]), as determined by an FDA approved test, with no EGFR or ALK genomic tumor aberrations**
  - **In combination with bevacizumab, paclitaxel, and carboplatin, for the first-line treatment of adult patients with metastatic non-squamous NSCLC with no EGFR or ALK genomic tumor aberrations**
  - **In combination with paclitaxel protein-bound and carboplatin for the first line treatment of adult patients with metastatic non-squamous NSCLC with no EGFR or ALK genomic tumor aberrations**
  - **For the treatment of adult patients with metastatic NSCLC who have disease progression during or following platinum-containing chemotherapy. Patients with EGFR or ALK genomic tumor aberrations should have disease progression on FDA-approved therapy for NSCLC harboring these aberrations prior to receiving Tecentriq Hybreza**
- **Small Cell Lung Cancer (SCLC)**
  - **In combination with carboplatin and etoposide, for the first-line treatment of adult patients with ES-SCLC**

Tecentriq Hybreza (atezolizumab/hyaluronidase-tqjs)

FDA Indications continued:

- **Hepatocellular Carcinoma (HCC)**
  - In combination with bevacizumab for the treatment of adult patients with unresectable or metastatic HCC who have not received prior systemic therapy
- **Melanoma**
  - In combination with cobimetinib and vemurafenib for the treatment of adult patients with BRAF V600 mutation-positive unresectable or metastatic melanoma as determined by an FDA-approved test
- **Alveolar Soft Part Sarcoma (ASPS)**
  - For the treatment of adult patients with unresectable or metastatic ASPS

Warnings:

- Immune-mediated adverse reactions, infusion-related reactions, complications of allogeneic HSCT, and embryo-fetal toxicity

Recommended Dosage:

- Has different recommended dosage and administration than intravenous atezolizumab products
- One 15 mL injection (containing 1,875 mg of atezolizumab and 30,000 units of hyaluronidase) administered subcutaneously into the thigh over approximately 7 minutes every 3 weeks by a healthcare professional
- See labeling for additional dosing details based on indication

Availability:

- Injection: 1,875 mg atezolizumab and 30,000 units hyaluronidase per 15 mL (125 mg/2,000 units per mL) solution in a single-dose vial

Oncology, Oral - Other

ONCOLOGY AGENTS : GAMMA SECRETASE INHIBITORS

Disease State Description – Gamma Secretase Inhibitors

Desmoid Tumors

- For every one million people worldwide, two to four are diagnosed with a desmoid tumor per year
- In 5% to 10% of cases, desmoid tumors may run in families
- Also known as aggressive fibromatosis or desmoid-type fibromatosis
- Most common in people between the ages of 15 and 60 years, and are more common in females than males
- Desmoid tumors grow from the connective tissue in the body and can occur anywhere in the body
- While the cells of the desmoid tumor do not travel to other parts of the body like cancer can, they can invade nearby tissue and are often very painful
- Desmoid tumors can be hard to predict; they can shrink and go away on their own, they can remain the same size, or they can grow quickly
- Treatment options include:
  - Watch and wait: In some cases, the tumor grows very slowly, or even shrinks without any treatment
  - Surgery: Has been a standard treatment for desmoid tumors in the past but this may be changing; given that the tumor often returns to the same location after surgery, doctors are looking for other treatment options
  - Radiation therapy: Treatment option for some desmoid tumors; may cause other cancers in the future
  - Chemotherapy: There is no standard chemotherapy for desmoid tumors but promising new drugs have been shown to shrink these tumors

Gamma Secretase Inhibitors

Ogsiveo (nirogacestat)

November 2023 – New Drug

- **FDA approved for adults with progressing desmoid tumors who require systemic treatment**

Warnings:

- **Diarrhea: Severe diarrhea can occur; monitor and dose modify for Grade 3-4 diarrhea**
- **Ovarian Toxicity: Female reproductive function and fertility may be impaired; advise females of reproductive potential of the potential risk prior to treatment and monitor routinely**
- **Hepatotoxicity: Elevated AST and ALT can occur; monitor AST and ALT regularly and modify dose as recommended**
- **Non-Melanoma Skin Cancers: Perform dermatologic examination prior to initiation and routinely during treatment**
- **Electrolyte Abnormalities: Monitor phosphate and potassium regularly and modify dose as recommended**
- **Embryo-Fetal Toxicity: Can cause fetal harm; advise patients of reproductive potential of the potential risk to a fetus and to use effective contraception**

Recommended Dosage

- **150 mg orally twice daily until disease progression or unacceptable toxicity**

Availability:

- **Oral Tablets: 50 mg**

Oncology, Oral - Renal Cell

ONCOLOGY AGENTS : HIF-2-ALPHA INHIBITORS

Disease State Description - Oncology, HIF-2-Alpha Inhibitors

Renal cell carcinoma (RCC)

- Cancers of the kidney and renal pelvis account for approximately 4% of all newly-diagnosed cancers in the United States (US), with a 5% incidence in males and a 3% incidence in females
  - The median age at diagnosis is 65 years, and > 75% of cases are diagnosed in patients ages 55 or older
  - The overall 5-year survival for patients diagnosed with RCC was 77.6% from the period of 2013 to 2019
  - If the disease is localized at time of diagnosis, outcomes are excellent with a 5-year survival of approximately 93%; however, patients diagnosed with advanced, metastatic disease, accounting for approximately 15% of diagnoses, have much poorer outcomes with approximately a 17.4% survival rate at 5 years
- Approximately 85% of kidney tumors are RCC, and approximately 70% of all RCC have a clear cell histology
  - Other less common histologies are usually grouped together as “non-clear cell” tumors
- The incidence of RCC in men is more than twice that of women in the United States (US)
- The most common presenting triad of symptoms includes hematuria, flank mass, and flank pain; however, as the use of routine imaging has become more widespread, the frequency of incidental detection of RCC has increased, and only about 30% of patients are now diagnosed on the basis of symptoms

Guidelines - Oncology, HIF-2-Alpha Inhibitors

National Comprehensive Cancer Network (NCCN) Guidelines, 2023

- For first-line systemic therapy of favorable risk, clear cell histology, relapsed or stage 4 RCC recommend a tyrosine kinase inhibitors (TKI) plus an immune checkpoint inhibitor (CPI) as the category 1, preferred options
  - Specifically, axitinib (Inlyta) plus pembrolizumab (Keytruda) or cabozantinib (Cabometyx) plus nivolumab (Opdivo) or lenvatinib (Lenvima) plus pembrolizumab are the 3 TKI/CPI regimens included
  - Other recommended regimens for this same group of patients include monotherapy with sunitinib (Sutent) or pazopanib (Votrient), or the combination of axitinib (Inlyta) plus avelumab (Bavencio) or ipilimumab (Yervoy) plus nivolumab (all category 2A)
  - Axitinib monotherapy is a NCCN category 2B recommendation listed as useful in certain circumstances
- For this same group of patients with poor or intermediate risk, rather than favorable risk, ipilimumab (Yervoy) plus nivolumab and the same 3 TKI/CPI regimens are listed as category 1, preferred along with single agent cabozantinib being a category 2A, preferred option
  - Other options largely mirror the favorable risk options defined above
- For subsequent therapy of RCC with clear cell histology, no preferred options are provided
- Other recommended regimen options are based on whether the patient is immune-oncology (IO) therapy naïve or has received prior IO therapy (all category 2A)
  - For those that are IO therapy naïve, options include axitinib in combination with pembrolizumab, cabozantinib with or without nivolumab, lenvatinib plus pembrolizumab or lenvatinib plus everolimus, ipilimumab plus nivolumab, or single agent nivolumab
  - For patients who have received prior IO therapy, other recommended regimens include axitinib, cabozantinib, lenvatinib plus everolimus, or tivozanib
- For patients with non-clear cell histology, single agent cabozantinib, sunitinib, axitinib (useful in certain circumstances), pazopanib (useful in certain circumstances), and everolimus (useful in certain circumstances) are all category 2A recommendations, though cabozantinib and sunitinib are the preferred regimens

Oncology, HIF-2-Alpha Inhibitors

Welireg (belzutifan)

December 2023 – Expanded Indication

- **FDA-approved for patients with advanced renal cell carcinoma (RCC) following a programmed death receptor-1 (PD-1) or programmed death-ligand 1 (PD-L1) inhibitor and a vascular endothelial growth factor tyrosine kinase inhibitor (VEGF-TKI)**

FDA Indications:

- Treatment of adult patients with von Hippel-Lindau (VHL) disease who require therapy for associated renal cell carcinoma (RCC), central nervous system (CNS) hemangioblastomas, or pancreatic neuroendocrine tumors (pNET), not requiring immediate surgery
- **Treatment of adult patients with advanced RCC following a PD-1 or PD-L1 inhibitor and a VEGF-TKI**

Warnings:

- BBW: Exposure during pregnancy can cause embryo-fetal harm
- Anemia: Withhold until hemoglobin ≥ 8g/dL, then resume at the same or reduced dose or discontinue
- Hypoxia: For hypoxia at rest, withhold until resolved, resume at reduced dose, or discontinue depending on severity; for life-threatening hypoxia, permanently discontinue

Recommended Dosage:

- 120 mg administered orally once daily with or without food

Availability:

- Oral tablets: 40 mg

Oncology, Oral - Lung

ONCOLOGY AGENTS : KRAS INHIBITORS

Disease State Description and Guidelines – Oncology, KRAS Inhibitors

Colon Cancer

- In the United States (US), colon cancer is the third most diagnosed cancer, as well as the second leading cause of death from cancer in both men and women
- In 2023, an estimated 106,970 cases of colon cancer will be diagnosed, and an estimated 52,550 deaths will occur in the US
- Colon cancer typically affects older adults, though it can happen at any age
- Treatments include surgery, radiation therapy and medicines, such as chemotherapy, targeted therapy and immunotherapy

Oncology, KRAS Inhibitors

Krazati (adagrasib)

June 2024 – New Indication

- **FDA has granted accelerated approval for use in combination with cetuximab, for treatment of adults with KRAS G12C-mutated locally advanced or metastatic colorectal cancer (CRC), as determined by an FDA-approved test, who have received prior treatment with fluoropyrimidine-, oxaliplatin-, and irinotecan-based chemotherapy**

FDA Indications:

- As a single agent, for the treatment of adult patients with KRAS G12C-mutated locally advanced or metastatic Non-small cell lung cancer (NSCLC), as determined by an FDA-approved test, who have received at least one prior systemic therapy
- **In combination with cetuximab, for the treatment of adult patients with KRAS G12C-mutated locally advanced or metastatic CRC, as determined by an FDA-approved test, who have received prior treatment with fluoropyrimidine-, oxaliplatin-, and irinotecan-based chemotherapy**

Warnings:

- Gastrointestinal adverse reactions (diarrhea, nausea and vomiting), QTc interval prolongation, hepatotoxicity, interstitial lung disease (ILD)/penumonitis

Recommended Dosage:

- **600 mg orally twice daily**

Availability:

- Oral Tablets: 200 mg

Oncology, Oral - Other

ONCOLOGY AGENTS : ORNITHING DECARBOXYLASE INHIBITORS

Disease State Description – Ornithing Decarboxylase Inhibitor

Neuroblastoma

- Cancer that starts in very early forms of nerve cells, most often found in an embryo or fetus
- Most common cancer in infants (younger than 1 year old)
- There are about 700 to 800 new cases of neuroblastoma each year in the United States
- Some neuroblastomas grow and spread quickly, while others grow slowly
  - Sometimes, in very young children, the cancer cells die for no reason and the tumor goes away on its own
  - In other cases, the cells sometimes mature on their own into normal ganglion cells and stop dividing
- Treatment depends on the risk group of the cancer, the child's age, and other factors, and might include more than one type of treatment
- Treatment options include surgery, chemotherapy and related drugs, radiation therapy, high-dose chemotherapy and Stem Cell Transplant, retinoid therapy, and immunotherapy

Ornithing Decarboxylase Inhibitor

Iwilfin (eflornithine)

December 2023 – New Drug

- **FDA approved to reduce the risk of relapse of high-risk neuroblastoma (HRNB) in adult and pediatric patients with at least a partial response to prior multiagent, multimodality therapy, including anti-GD2 immunotherapy**

Warnings:

- **Hearing Loss: Monitor hearing before and during treatment; withhold, reduce dose, or permanently discontinue based on severity**
- **Myelosuppression: Monitor blood counts before and during treatment; withhold, reduce dose, or permanently discontinue based on severity**
- **Hepatotoxicity: Monitor liver function tests before and during treatment; withhold, reduce dose, or permanently discontinue based on severity**
- **Embryo-Fetal Toxicity: Advise females of reproductive potential of the potential risk to a fetus and to use effective contraception**

Recommended Dosage:

- **Based on body surface area (BSA)**
- **Taken orally twice daily with or without food until disease progression, unacceptable toxicity, or for a maximum of two years**

Availability:

- **Oral tablets: 192 mg**

Phosphate Binders

ENDOCRINE AND METABOLIC AGENTS : NH3 INHIBITORS

Disease State Description - Phosphate Binders

Hyperphosphatemia

- Hyperphosphatemia is a risk factor for cardiovascular disease (CVD)
- Studies have shown an increased risk of mortality in patients with Chronic Kidney Disease (CKD) stage 5 receiving dialysis (5D) with hyperphosphatemia
- Long-term hyperphosphatemia, along with elevated calcium x phosphorus (Ca X P) values (≥ 55 mg^2/dL^2), is linked to an increased risk of vascular, valvular, and other soft tissue calcification in patients with CKD
- Soft tissue calcifications occurring in vascular and cardiac tissue can lead to increased morbidity and mortality
- Patients with elevated Ca X P values are at a significantly higher risk of death
- The Ca X P product is calculated by using the patient's corrected serum calcium level and serum phosphorus level

Guidelines - Phosphate Binders

The Kidney Disease: Improving Global Outcomes (KDIGO), 2017

- Clinical Practice Guideline for the Diagnosis, Evaluation, Prevention, and Treatment of Chronic Kidney Disease – Mineral and Bone Disorder (CKD-MBD) advises that treatment of hyperphosphatemia includes the reduction of dietary phosphorus, phosphate binding therapy, and removal of phosphorus by dialysis and decision-making should consider serial phosphate, calcium, and PTH levels
- The guidelines recommend lowering serum phosphate levels in patients with CKD stages 3a through 5D toward the normal range (grade 2C), avoiding hypercalcemia in adults (grade 2C), and maintaining age-appropriate serum calcium in pediatrics (grade 2C)
- There is no evidence that lowering serum phosphorus to a specific target range leads to improved clinical outcomes, and goals of therapy should be based on observational data
  - Although the recommendation is not graded, they advise basing decisions regarding phosphate-lowering treatment on progressively or persistently elevated serum phosphate rather than to prevent hyperphosphatemia
- They further recommend restricting the dose of calcium-based phosphate binders in adults with CKD stages 3a through 5D (grade 2B) and that the choice of phosphate-lowering therapy should be based on serum calcium levels in children with CKD stages 3a through 5D (not graded)
- They recommend avoiding long-term use of aluminum-containing phosphate binders in these patients and avoiding dialysate aluminum contamination in patients with CKD stage 5D to avoid aluminum intoxication (grade 1C)

Phosphate Binders

Xphozah (tenapanor)

October 2023 – New Drug

- **FDA approved to reduce serum phosphorus in adults with chronic kidney disease (CKD) on dialysis as add-on therapy in patients who have an inadequate response to phosphate binders or who are intolerant of any dose of phosphate binder therapy**

Warnings:

- **CI: Pediatric patients under 6 years of age and patient with known or suspected mechanical gastrointestinal obstruction**
- **Severe diarrhea**

Recommended Dosage:

- **30 mg orally twice daily before the morning and evening meals**
- **Monitor serum phosphorus and adjust the dosage as needed to manage gastrointestinal tolerability**
- **Do not take right before a hemodialysis session**
  - Take right before the next meal following dialysis

Availability:

- Oral tablet: 10 mg, 20 mg, 30 mg

Hyperparathyroid Agents

ENDOCRINE AND METABOLIC AGENTS : PARATHYROID HORMONES

Disease State Description - Parathyroid Hormones

Hypoparathyroidism

- Rare disease most often caused by damage to the parathyroid glands from surgery or autoimmune disease
- Patients with hypoparathyroidism have low levels of parathyroid hormone (PTH), which leads to hypocalcemia
- Patients with hypoparathyroidism are typically treated with active vitamin D and calcium to raise blood calcium into the low-normal range and can require large doses of calcium taken more than once a day
- Symptoms of hypoparathyroidism vary depending on blood calcium levels, and can include tingling or numbness in the fingertips, toes, and lips; muscle cramps and spasms; and seizures

Parathyroid Hormones

Yorvipath (palopegteriparatide)

August 2024 – New Drug

- **FDA approved for treatment of hypoparathyroidism in adults**

Limitation:

- **Not studied for acute post-surgical hypoparathyroidism**
- **Titration scheme only evaluated in adults who first achieved an albumin-corrected serum calcium of at least 7.8 mg/dL using calcium and active vitamin D treatment**

Warnings:

- **Unintended Changes in Serum Calcium Levels Related to Number of Daily Injections: Use only one daily Yorvipath injection; using two injections to achieve the recommended once daily dosage increases the variability of the total delivered dose**
- **Serious Hypercalcemia and Hypocalcemia: Periodically measure serum calcium and monitor for signs and symptoms**
- **Potential Risk of Osteosarcoma: Not recommended in patients at increased risk of osteosarcoma**

Recommended Dosage:

- **Dosage is individualized based on serum calcium and may be administered by patient or caregiver after proper training**
- **Recommended starting dose is 18 mcg subcutaneously once daily and is titrated in 3 mcg increments or decrements with the goal of maintaining serum calcium within the normal range without the need for active vitamin D (e.g., calcitriol) or therapeutic calcium doses (elemental calcium >600 mg/day)**
- **Maximum dosage is 30 mcg once daily**
  - **If adequate response is not achieved with 30 mcg dose, consider adding or restarting calcium and/or active vitamin D therapy and/or seek other treatment options**

Availability:

- **Injection: 168 mcg/0.56 mL, 294 mcg/0.98 mL, or 420 mcg/1.4 mL in a single-patient-use prefilled pen**

Stem Cell Mobilizers

HEMATOPOIETIC AGENTS : CXCR4 RECEPTOR ANTAGONISTS

Disease State Description - Stem Cell Mobilizers

WHIM syndrome (warts, hypogammaglobulinemia, infections and myelokathexis)

- Rare genetic disease that causes the body's immune system to not function properly
- Reduces the number of mature neutrophils and lymphocytes circulating within the body
- It is estimated to occur in about 1 in 5 million live births with approximately 60 cases have been reported in the medical literature
- While symptoms vary, patients with WHIM syndrome can have recurrent infections, including pneumonia, sinusitis, and skin infections and are at risk for life-threatening bacterial and viral infections

Stem Cell Mobilizers

Xolremdi (mavorixafor)

April 2024 – New Drug

- **FDA approved as the first drug for patients ≥ 12 years old with warts, hypogammaglobulinemia, infections, and myelokathexis (WHIM) syndrome to increase the number of circulating mature neutrophils and lymphocytes**

Warnings:

- **CI with drugs that are highly dependent on CYP2D6 for clearance**
- **Embryo-fetal toxicity: Expected to cause fetal harm; advise women of reproductive potential to use effective contraception**
- **QTc Interval Prolongation: Correct any modifiable risk factors, assess QTc at baseline and monitor QTc during treatment as clinically indicated; dose reduction or discontinuation may be required due to drug-drug interactions**

Recommended Dosage:

- **Patients ≤ 50 kg: 300 mg orally once daily**
- **Patients > 50 kg: 400 mg orally once daily**
- **Administer on an empty stomach after an overnight fast and at least 30 minutes before food**

Availability:

- **Oral Capsules: 100 mg**

Pulmonary Arterial Hypertension (PAH) Agents, Injectable

PULMONARY HYPERTENSION AGENTS : ACTIVIN SIGNALING INHIBITOR

Disease State Description – PAH Agents, Injectable

Pulmonary arterial hypertension (PAH)

- Progressive disorder characterized by increased pressure in the pulmonary artery, which carries oxygen-poor blood from the right side of the heart to the lungs
- This is defined by the American Heart Association (AHA) as a resting mean pulmonary arterial pressure (mPAP) > 20 mm Hg
- Approximately 500 to 1,000 new cases of pulmonary arterial hypertension (PAH) are diagnosed in the United States (US) each year
  - The prevalence of PAH is estimated to range from 15 to 50 per million in the US and Europe
  - Although the number of approved therapies for PAH has grown in the past years, the prognosis is still poor, with a 3-year mortality rate estimated at 21%
- Symptoms include dyspnea, light-headedness, syncope, fatigue, edema (peripheral), chest pain, palpitations, and visible or enlarged veins on the side of the neck, which may be exacerbated by exertion
- Management of Pulmonary Hypertension (PH) should be limited to specialized centers where clinicians are experienced in the evaluation and treatment of patients with PH

Disease State Description – PAH Agents, Injectable

Pulmonary arterial hypertension (PAH)

- There are many causes of PAH including idiopathic or underlying disease and hereditary causes
  - Cellular changes in the walls of pulmonary arteries, and it appears that mutations in the bone morphogenetic protein receptor type 2 (BMPR2) gene plays a key role in the pathogenesis of heritable PAH
  - Other etiologies in PAH include drugs and toxins, collagen vascular resistance, human immunodeficiency virus (HIV), portal hypertension, chronic thromboembolism, and congenital heart disease
- The World Health Organization (WHO) classifies PH patients into five groups based on etiology
  - Group I refers to PAH
  - Group II refers to PH due to left heart disease
  - Group III refers to PH due to lung disease
  - Group IV refers to PH due to blood clots in the lungs
  - Group V refers to PH due to blood and other rare disorders

PAH Agents, Injectable

Winrevair (sotatercept-csrk)

March 2024 – New Drug

- **FDA approved for the treatment of adults with pulmonary arterial hypertension (PAH, WHO Group 1) to increase exercise capacity, improve WHO functional class and reduce the risk of clinical worsening events**

Warnings:

- **Erythrocytosis: If severe, may increase the risk of thromboembolic events and hyperviscosity syndrome; monitor hemoglobin (Hgb) before each dose for the first 5 doses, or longer if values are unstable, and periodically thereafter to determine if dose adjustments are required**
- **Severe Thrombocytopenia: May increase the risk of bleeding; monitor platelets before each dose for the first 5 doses, or longer if values are unstable, and periodically thereafter to determine if dose adjustments are required**
- **Serious Bleeding: Serious bleeding events were reported and were more likely with concomitant prostacyclin and/or antithrombotic agents, or with low platelet counts**
- **Embryo-Fetal Toxicity: Advise females of reproductive potential of the potential risk to a fetus and use of effective contraception**
- **Impaired Fertility: May impair female and male fertility**

Recommended Dosage:

- **Starting dose: 0.3 mg/kg subcutaneously**
- **Target dose: 0.7 mg/kg subcutaneously every 3 weeks**
- **May be administered by patient or caregiver with proper training**

Availability:

- **For injection: 45 mg or 60 mg lyophilized cake or powder in a single-dose vial**

Pulmonary Arterial Hypertension (PAH) Agents, Oral and Inhaled

PULMONARY HYPERTENSION AGENTS : COMBINATIONS

PAH Agents, Oral and Inhaled

Opsynvi (macitentan/tadalafil)

March 2024 – New Formulation

- **FDA approved a combination of macitentan, an endothelin receptor antagonist (ERA), and tadalafil, a phosphodiesterase 5 (PDE5) inhibitor, for chronic treatment of pulmonary arterial hypertension (PAH, WHO Group I) in adults in WHO functional class (FC) II-III**
  - **Macitentan reduces the risk of clinical worsening events and hospitalization, and tadalafil improves exercise ability**

Warnings:

- **BBW: Embryo-Fetal Toxicity [for all female patients, available only through Macitentan-Containing Products Risk Evaluation and Mitigation Strategy (REMS)]**
- **CI: Pregnancy, Hypersensitivity, Concomitant Organic Nitrates, Concomitant Guanylate Cyclase (GC) Stimulators**
- **Fluid Retention: May require intervention**
- **Hepatotoxicity: Obtain baseline liver enzymes and monitor as clinically indicated**

Recommended Dosage:

- **One 10 mg/20 mg or 10 mg/40 mg tablet taken orally once daily with or without food**

Availability:

- **Film-coated tablets:**
  - **Macitentan 10 mg and tadalafil 20 mg**
  - **Macitentan 10 mg and tadalafil 40 mg**

Antifungals, Topical
ANTIFUNGALS : TOPICAL

Antivirals, Influenza
ANTIVIRALS : INFLUENZA AGENTS

Antivirals, Other
ANTIVIRALS : SMALLPOX AGENTS

Sinus Node Inhibitor
CARDIOVASCULAR AGENTS : SINUS NODE INHIBITORS

Transthyretin Agents
CARDIOVASCULAR AGENTS : TRANSTHYRETIN STABILIZERS

Vasodilators, Coronary
CARDIOVASCULAR AGENTS : VASOACTIVE SOLUBLE GUANYLATE CYLCASE STIMULATORS (SGC)

Fabry's Disease
ENDOCRINE AND METABOLIC AGENTS : FABRY DISEASE AGENTS - INJECTABLE
ENDOCRINE AND METABOLIC AGENTS : FABRY DISEASE AGENTS – ORAL

Nutritionals, Triglycerides
ENDOCRINE AND METABOLIC AGENTS : FATTY ACID METABOLISM AGENTS

Uterine Disorder Treatments; Pituitary Suppressive Agents
ENDOCRINE AND METABOLIC AGENTS : PITUITARY SUPPRESSANTS

GI Motility, Chronic
GASTROINTESTINAL AGENTS : IRRITABLE BOWEL SYNDROME (IBS) AGENTS / GI MOTILITY

Ulcerative Colitis (UC) Agents
GASTROINTESTINAL AGENTS : INFLAMMATORY BOWEL AGENTS

Bladder Relaxant
GENITOURINARY AGENTS : OVERACTIVE BLADDER AGENTS

Hereditary Angioedema (HAE) Agents
HEMATOLOGICAL AGENTS : HEREDITARY ANGIOEDEMA AGENTS

Multiple Sclerosis (MS) Agents
MULTIPLE SCLEROSIS AGENTS:

Friedreich Ataxia
NEUROMUSCULAR AGENTS : FREIDRICHS ATAXIA AGENTS

Rett Syndrome
NEUROMUSCULAR AGENTS : RETT SYNDROME AGENTS

Hematopoietic Progenitor Cell Therapy
ONCOLOGY AGENTS : ALLOGENIC CELLULAR IMMUNOTHERAPY

Oncology, Oral- Prostate
ONCOLOGY AGENTS : GONADOTROPIN-RELEASING HORMONE (GNRH) RECEPTOR ANTAGONISTS - ORAL

Immunomodulators, Misc
ONCOLOGY AGENTS : INTERFERONS

Pituitary Suppressive Agents, LHRH
ONCOLOGY AGENTS : LHRH ANALOGS – INJECTABLE

Chemotherapy Rescue
ONCOLOGY AGENTS : URINARY TRACT PROTECTIVE RESCUE AGENTS - ORAL

Ophthalmics, Anti-inflammatory/Immunomodulator; Ophthalmic, Glaucoma Agent
OPHTHALMIC AGENTS : CHOLINERGIC AGONISTS

Macular Degeneration Agents
OPHTHALMIC AGENTS : COMPLEMENT INHIBITORS

Vitamin D Preparations; Hyperparathyroid
VITAMINS : VITAMIN D / VITAMIN D ANALOGS - ORAL

Ulcerative Colitis Agents

GASTROINTESTINAL AGENTS : INFLAMMATORY BOWEL AGENTS

Ulcerative Colitis Agents

Discontinuation

- **October 2023 - Delzicol (mesalamine)**
  - FDA posted that Abbvie will discontinue Delzicol 400 mg delayed-release capsules and its generic
  - Generic version is available by Teva

Multiple Sclerosis (MS) Agents

MULTIPLE SCLEROSIS AGENTS

MS Agents

FDA Communication

- **May 2024 - Copaxone, generics (glatiramer acetate)**
  - FDA alerted patients, caregivers, and Health Care Professionals (HCPs) of labeling updates for glatiramer acetate injection products that includes a new warning that using an autoinjector that is not compatible with a specific glatiramer acetate injection product may increase the risk for medication errors, such as a missed dose or administration of a partial dose
  - The availability of optional compatible autoinjectors for each glatiramer acetate injection drug product may change with time
    - The FDA will no longer update this information on their website
    - Patients can continue to confirm the compatibility of their autoinjector by speaking with their HCP, visiting the drug manufacturer's patient information website, contacting the drug manufacturer for more information, or referring to the autoinjector labeling