pharmpiX

RX BENEFIT MANAGEMENT

PharmNOTES

Summary about new FDA products,
generic medication, medical products,
and WHAT IS IN THE PIPELINE.
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Pharmacy
Benefit
Management
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NEWS……

- No security warning or drug safety communication published during October 2018.

New FDA Approved Products

Drug/ Manufacturer	Therapeutic Class	Indications	Date	Comments
Xyosted™ (testosterone enanthate) Subcutaneous Injection / Antares Pharma, Inc.	Endocrine-Metabolic agent Androgen	Testosterone replacement therapy in adult males for conditions associated with a deficiency or absence of endogenous testosterone **Limitations of use** • Safety and efficacy of Xyosted™ in adult males with "age-related hypogonadism" (also referred to as "late-onset hypogonadism") have not been established. • Safety and efficacy of Xyosted™ in males less than 18 years old have not been established. **Black box warning** Blood pressure increases.	09/28/2018	**DOSAGE AND ADMINISTRATION** The recommended starting dose is 75 mg subcutaneously in the abdominal region once weekly. The dose is adjusted based upon total testosterone trough concentrations (measured 7 days after most recent dose) obtained following 6 weeks of dosing and periodically thereafter. • Prior to initiating Xyosted™, confirm the diagnosis of hypogonadism by ensuring that serum testosterone has been measured in the morning on at least two separate days and that these concentrations are below the normal range. • Avoid intramuscular and intravascular administration. **DOSAGE FORMS AND STRENGTHS** Injectionsupplied as 0.5 mL of sterile solution in an auto-injector for subcutaneous administration in three strengths: • 50 mg/0.5 mL • 75 mg/0.5 mL • 100 mg/0.5 mL **CONTRAINDICATIONS** • Men with carcinoma of the breast or known or suspected carcinoma of the prostate. • Women who are pregnant. Testosterone may cause fetal harm. • Known hypersensitivity to Xyosted™ or its ingredients. • Men with hypogonadal conditions not associated with structural or genetic etiologies. **WARNINGS AND PRECAUTIONS** • **Abuse:** Abuse, usually at higher than prescribed doses and usually in conjunction with other anabolic androgenic steroids, has been reported and may result in serious cardiovascular and psychiatric adverse reactions; if suspected, measure serum testosterone.

New FDA Approved Products

Drug/ Manufacturer	Therapeutic Class	Indications	Date	Comments
Xyosted™ (testosterone enanthate) Subcutaneous Injection / Antares Pharma, Inc. (continuation)	Endocrine-Metabolic agent Androgen	Testosterone replacement therapy in adult males for conditions associated with a deficiency or absence of endogenous testosterone **Limitations of use** • Safety and efficacy of Xyosted™ in adult males with "age-related hypogonadism" (also referred to as "late-onset hypogonadism") have not been established. • Safety and efficacy of Xyosted™ in males less than 18 years old have not been established. **Black box warning** Blood pressure increases.	09/28/2018	**WARNINGS AND PRECAUTIONS** (continuation) • **Cardiovascular:** (1) Possible increased risk of heart attack, stroke, or death has been reported. (2) Edema, with or without congestive heart failure, may occur, especially in patients with preexisting cardiac, hepatic, or renal disease; discontinuation may be necessary and/or lower restarting dose used. • **Endocrine and metabolic:** (1) Hypercalcemia, and associated hypercalciuria, may occur in patients at risk of hypercalcemia; monitoring recommended. (2) Changes in serum lipid profile may occur; monitoring recommended and discontinuation of therapy may required. (3) Thyroxine-binding globulin concentrations may be decreased. • **Hematologic:** (1) Venous thromboembolic events, including DVT, have been reported with testosterone therapy; discontinue use if suspected. (2) Increases in hematocrit reflective of increases in red blood cell mass may occur; monitoring recommended and discontinuation may be required. • **Psychiatric:** Depression and suicidal ideation and behavior, including completed suicide, have been reported; monitoring recommend. • **Reproductive:** (1) Gynecomastia may occur and can possibly persist in those being treated for hypogonadism. (2) Worsening of benign prostatic hyperplasia may occur in patients with condition; monitoring recommended. (3) Increased risk of prostate cancer. (4) Spermatogenesis may be suppressed and result in adverse effects on semen parameters including sperm count. • **Respiratory:** (1) Venous thromboembolic events, including pulmonary embolism, have been reported; discontinue use if suspected. (2) Sleep apnea may occur. **ADVERSE REACTIONS** Most common adverse reactions: hematocrit increased, hypertension, PSA increased, injection site bruising, and headache.

New FDA Approved Products

Drug/ Manufacturer	Therapeutic Class	Indications	Date	Comments
Xyosted™ (testosterone enanthate) Subcutaneous Injection / Antares Pharma, Inc. (continuation)	Endocrine-Metabolic agent Androgen	Testosterone replacement therapy in adult males for conditions associated with a deficiency or absence of endogenous testosterone **Limitations of use** • Safety and efficacy of Xyosted™ in adult males with "age-related hypogonadism" (also referred to as "late-onset hypogonadism") have not been established. • Safety and efficacy of Xyosted™ in males less than 18 years old have not been established. **Black box warning** Blood pressure increases.	09/28/2018	**DRUG INTERACTIONS** • **Insulin:** Androgens may decrease blood glucose, and therefore may decrease insulin requirements in diabetic patients. • **Anticoagulants:** Changes in anticoagulant activity may be seen with androgens. More frequent monitoring of international normalized ratio (INR) and prothrombin time is recommended in patients taking warfarin. • **Corticosteroids:** Use of testosterone with corticosteroids may result in increased fluid retention. Use with caution, particularly in patients with cardiac, renal, or hepatic disease. • **Medications known to increase blood pressure (BP):** Concomitant administration of medications that are known to increase BP with Xyosted™ may lead to additional increases in BP. **USE IN SPECIFIC POPULATIONS** • **Pregnancy:** Not for use in women. Contraindicated in pregnant women. • **Pediatric use:** Safety and effectiveness in pediatric patients less than 18 years old have not been established. • **Geriatric use:** There are insufficient long-term safety data to assess the potential risks of cardiovascular disease and prostate cancer.

New FDA Approved Products

Drug/ Manufacturer	Therapeutic Class	Indications	Date	Comments
Seysara™ (sarecycline) Tablets, for oral use / Almirall, S.A.	Anti-infective agent Antibactrial Tetracycline	Treatment of inflammatory lesions of non-nodular moderate to severe acne vulgaris in patients 9 years of age and older **Limitations of use** Efficacy of Seysara™ beyond 12 weeks and safety beyond 12 months have not been established. Seysara™ has not been evaluated in the treatment of infections. To reduce the development of drug-resistant bacteria as well as to maintain the effectiveness of other antibacterial drugs, Seysara™ should be used only as indicated.	10/01/2018	**DOSAGE AND ADMINISTRATION** The recommended dose is once daily with or without food: • 60 mg for patients who weigh 33-54 kg • 100 mg for patients who weigh 55-84 kg • 150 mg for patients who weigh 85-136 kg **DOSAGE FORMS AND STRENGTHS** Tablets: 60 mg, 100 mg, 150 mg. **CONTRAINDICATIONS** • Hypersensitivity to any of the tetracyclines. **WARNINGS AND PRECAUTIONS** • **Dermatologic:** Photosensitivity has been reported with other tetracycline-class antibacterial drugs; minimize or avoid exposure to natural or artificial sunlight (tanning beds or UVA/B treatment) and wear loose-fitting clothes to protect from sun exposure when outside. • **Concomitant use:** Concomitant use with isotretinoin should be avoid; increased risk of intracranial hypertension. • **Gastrointestinal:** (1) Permanent discoloration of the teeth may occur when used during tooth development (second and third trimesters of pregnancy, infancy, and childhood to the age of 8 years); more common during long-term use of the tetracycline-class drugs but has been observed following repeated short-term courses. (2) Enamel hypoplasia has been reported with tetracycline class drugs. (3) Clostridium difficile associated diarrhea (CDAD) has been reported with nearly all antibacterial agents and may range in severity from mild diarrhea to fatal colitis. • **Immunologic:** (1) Bacterial resistance to tetracyclines may occur during therapy. (2) Overgrowth of non-susceptible organisms, including fungi, may occur; discontinue therapy if superinfection occur.

New FDA Approved Products

Drug/ Manufacturer	Therapeutic Class	Indications	Date	Comments
Seysara™ (sarecycline) Tablets, for oral use / Almirall, S.A. (continuation)	Anti-infective agent Antibactrial Tetracycline	Treatment of inflammatory lesions of non-nodular moderate to severe acne vulgaris in patients 9 years of age and older **Limitations of use** Efficacy of Seysara™ beyond 12 weeks and safety beyond 12 months have not been established. Seysara™ has not been evaluated in the treatment of infections. To reduce the development of drug-resistant bacteria as well as to maintain the effectiveness of other antibacterial drugs, Seysara™ should be used only as indicated.	10/01/2018	**WARNINGS AND PRECAUTIONS** (continuation) • **Musculoskeletal:** Decrease in fibula growth has been observed in premature infants given tetracycline; typically reversible upon discontinuation of therapy. • **Neurological:** (1) Central nervous system adverse effects including light-headedness, dizziness, or vertigo have been reported with tetracycline use; may disappear during therapy or when therapy is discontinued. (2) Intracranial hypertension has been reported with tetracycline class drugs with increased risk in women of childbearing age who are overweight; may resolve after discontinuation of therapy however the possibility for sequelae may be permanent or severe. **ADVERSE REACTIONS** Most common adverse reactions: nausea. **DRUG INTERACTIONS** • **Oral retinoids:** Avoid co-administration. • **Antacids and iron preparations:** Separate dosing of Seysara™. • **Penicillin:** Avoid co-administration. • **Anticoagulants:** decrease anticoagulant dosage as appropriate. • **P-glycoprotein substrates:** Monitor for toxicities of drugs that may require dosage reduction. **USE IN SPECIFIC POPULATIONS** • **Pregnancy:** Sarecycline, like other tetracycline-class drugs, can cause fetal harm when administered to a pregnant woman. • **Lactation:** Breastfeeding is not recommended. • **Pediatric use:** Safety and effectiveness in pediatric patients below the age of 9 years has not been established. • **Geriatric use:** Clinical studies did not include sufficient numbers of subjects aged 65 and over.

New FDA Approved Products

Drug/ Manufacturer	Therapeutic Class	Indications	Date	Comments

Nuzyra™ (omadacycline) for Injection, for intravenous, and and Tablets, for oral use / Paratek Pharmaceuticals, Inc.	Anti-infective agent
	
	Antibactrial
	
	Tetracycline
		Treatment of adult patients with the following infections caused by susceptible microorganisms:
		• Community-acquired bacterial pneumonia (CABP)
		• Acute bacterial skin and skin structure infections (ABSSSI)
		
		To reduce the development of drug-resistant bacteria and maintain the effectiveness of Nuzyra™ and other antibacterial drugs, Nuzyra™ should be used only to treat or prevent infections that are proven or strongly suspected to be caused by susceptible bacteria.
			10/02/2018	**DOSAGE AND ADMINISTRATION**
				Recommended dose for CABP:
				• Loading dose – Day 1: 200 mg by intravenous infusion over 60 minutes OR 100 mg by intravenous infusion over 30 minutes twice on day 1.
				• Maintenances dose – 100 mg by intravenous infusion over 30 minutes once daily OR 300 mg orally once daily.
				
				Recommended dose for ABSSSI:
				• Loading dose
				  • Intravenous: Day 1: 200 mg by intravenous infusion over 60 minutes OR 100 mg by intravenous infusion over 30 minutes twice on day 1.
				  • Oral: 450 mg orally once a day on day 1 and day 2.
				• Maintenances dose –
				  • Intravenous: 100 mg by intravenous infusion over 30 minutes once daily OR 300 mg orally once daily.
				  • Oral: 300 mg orally once daily.
				
				Treatment duration is 7 to 14 days.
				
				DOSAGE FORMS AND STRENGTHS
				• For Injection: 100 mg of omadacycline (equivalent to 131 mg omadacycline tosylate) as a lyophilized powder in a single dose vial for reconstitution and further dilution before intravenous infusion.
				• Tablets: 150 mg omadacycline (equivalent to 196 mg omadacycline tosylate).
				
				CONTRAINDICATIONS
				• Known hypersensitivity to omadacycline, tetracycline-class antibacterial drugs or any of the excipients.

New FDA Approved Products

Drug/ Manufacturer	Therapeutic Class	Indications	Date	Comments
Nuzyra™ (omadacycline) for Injection, for intravenous, and and Tablets, for oral use / Paratek Pharmaceuticals, Inc. (continuation)	Anti-infective agent Antibactrial Tetracycline	Treatment of adult patients with the following infections caused by susceptible microorganisms: • Community-acquired bacterial pneumonia (CABP) • Acute bacterial skin and skin structure infections (ABSSSI) To reduce the development of drug-resistant bacteria and maintain the effectiveness of Nuzyra™ and other antibacterial drugs, Nuzyra™ should be used only to treat or prevent infections that are proven or strongly suspected to be caused by susceptible bacteria.	10/02/2018	**WARNINGS AND PRECAUTIONS** • **Mortality imbalance in patients with CABP:** In the CABP trial, mortality rate of 2% was observed in Nuzyra™-treated patients compared to 1% in moxifloxacin-treated patients. The cause of the mortality imbalance has not been established. Closely monitor clinical response to therapy in CABP patients, particularly in those at higher risk for mortality. • **Tooth discoloration and enamel hypoplasia:** The use of Nuzyra™ during tooth development (last half of pregnancy, infancy and childhood to the age of 8 years) may cause permanent discoloration of the teeth (yellow-gray-brown) and enamel hypoplasia. • **Inhibition of bone growth:** The use of Nuzyra™ during the second and third trimester of pregnancy, infancy and childhood up to the age of 8 years may cause reversible inhibition of bone growth. • **Clostridium difficile-associated diarrhea:** Evaluate if diarrhea occurs. **ADVERSE REACTIONS** Most common adverse reactions: nausea, vomiting, infusion site reactions, alanine aminotransferase increased, aspartate aminotransferase increased, gamma-glutamyl transferase increased, hypertension, headache, diarrhea, insomnia, and constipation. **DRUG INTERACTIONS** • **Anticoagulants:** Patients who are on anticoagulant therapy may require downward adjustment of their anticoagulant dosage while taking Nuzyra™. • **Antiacids:** Absorption of tetracyclines, including Nuzyra™ is impaired by antacids containing aluminum, calcium, or magnesium, bismuth subsalicylate and iron containing preparations.

New FDA Approved Products

Drug/ Manufacturer	Therapeutic Class	Indications	Date	Comments
Nuzyra™ (omadacycline) for Injection, for intravenous, and and Tablets, for oral use / Paratek Pharmaceuticals, Inc. (continuation)	Anti-infective agent Antibactrial Tetracycline	Treatment of adult patients with the following infections caused by susceptible microorganisms: • Community-acquired bacterial pneumonia (CABP) • Acute bacterial skin and skin structure infections (ABSSSI) To reduce the development of drug-resistant bacteria and maintain the effectiveness of Nuzyra™ and other antibacterial drugs, Nuzyra™ should be used only to treat or prevent infections that are proven or strongly suspected to be caused by susceptible bacteria.	10/02/2018	**USE IN SPECIFIC POPULATIONS** • **Pregnancy:** Like other tetracycline-class drugs, can cause fetal harm when administered to a pregnant woman. • **Lactation:** Breastfeeding is not recommended. • **Pediatric use:** Safety and effectiveness in pediatric patients have not been established.

New FDA Approved Products

Drug/ Manufacturer	Therapeutic Class	Indications	Date	Comments
Revcovi™ (elapegademase-lvlr) Injection, for intramuscular use / Leadiant Biosciences, Inc.	Endocrine-Metabolic Agent Enzyme replacement therapy (ERT) Note: Orphan drug designation	Treatment of adenosine deaminase severe combined immune deficiency (ADA-SCID) in pediatric and adult patients	10/05/2018	**DOSAGE AND ADMINISTRATION** Recommended dose for patients transitioning from Adagen™ (pegademase bovine) to Revcovi™: • The starting dose of Revcovi™ is 0.2 mg/kg weekly, intramuscularly. Recommended dose for Adagen™-naïve patients: • The starting dose of Revcovi™ is 0.4 mg/kg weekly based on ideal body weight, divided into two doses (0.2 mg/kg twice a week), intramuscularly. **DOSAGE FORMS AND STRENGTHS** Injection: 2.4 mg/1.5 mL (1.6 mg/mL) in a single-dose vial. **CONTRAINDICATIONS** None. **WARNINGS AND PRECAUTIONS** • **Hematologic:** Injection site bleeding in patients with thrombocytopenia may occur; do not use if thrombocytopenia is severe. • **Immunologic:** Protect immune deficient patients from infection; timing and degree of immune improvement varies. **ADVERSE REACTIONS** Most common adverse reactions: cough and vomiting. **DRUG INTERACTIONS** The drug interaction potential of Revcovi™ is not known. **USE IN SPECIFIC POPULATIONS** • **Geriatric use:** Revcovi™ was not studied in patients 65 years and older.

New FDA Approved Products

Drug/ Manufacturer	Therapeutic Class	Indications	Date	Comments
Tegsedi™ (inotersen) Injection, for subcutaneous use / Ionis Pharmaceuticals, Inc.	Endocrine-Metabolic Agent Transthyretin Amyloidosis Agent	Treatment of the polyneuropathy of hereditary transthyretin-mediated amyloidosis in adults **Black box warning** Thrombocytopenia and glomerulonephritis.	10/05/2018	**DOSAGE AND ADMINISTRATION** The recommended dose is 284 mg administered by subcutaneous injection once weekly. Laboratory tests must be measured prior to treatment, continue to be monitored after treatment initiation, and for 8 weeks following discontinuation of treatment, as directed. **DOSAGE FORMS AND STRENGTHS** Injection: 284 mg/ 1.5 mL in a single-dose prefilled syringe. **CONTRAINDICATIONS** • Platelet count less than 100 x 10^9 /L. • History of acute glomerulonephritis caused by Tegsedi™. • History of a hypersensitivity reaction to Tegsedi™. **WARNINGS AND PRECAUTIONS** • **Cardiovascular:** Cervicocephalic arterial dissection has been reported; occurred within 2 day of the first dose, when the patient also had symptoms of cytokine release, and a high sensitivity C-reactive protein level greater than 100 mg/L. • **Endocrine and metabolic:** Decreased serum vitamin A levels have been reported; supplementation recommended. • **Hematologic:** Uninterpretable platelet counts due to platelet clumping, sometimes caused by a reaction between antiplatelet antibodies and EDTA, has been reported; hold dosing until an acceptable platelet count is confirmed with an interpretable blood sample. • **Hepatic:** (1) Increased ALT at least 3 and 8 times the upper limit of normal has been reported; monitoring recommended and therapy interruption or discontinuation may be necessary if signs or symptoms suggestive of hepatic dysfunction occur. (2) Immune-mediated biliary diseases have been reported; monitoring recommended and therapy interruption or discontinuation may be necessary if signs or symptoms suggestive of hepatic dysfunction occur.

New FDA Approved Products

Drug/ Manufacturer	Therapeutic Class	Indications	Date	Comments
Tegsedi™ (inotersen) Injection, for subcutaneous use / Ionis Pharmaceuticals, Inc. (continuation)	Endocrine-Metabolic Agent Transthyretin Amyloidosis Agent	Treatment of the polyneuropathy of hereditary transthyretin-mediated amyloidosis in adults **Black box warning** Thrombocytopenia and glomerulonephritis.	10/05/2018	**WARNINGS AND PRECAUTIONS** (continuation) • **Immunologic:** (1) Avoid use in patients for whom immunosuppressive treatment is not advised. (2) Serious inflammatory and immune reactions, have been reported. (3) Hypersensitivity reactions have been reported and generally occurred within 2 hours of administration; discontinue use if reactions occur. • **Neurologic:** (1) Stroke has been reported; occurred within 2 day of the first dose, when the patient also had symptoms of cytokine release, and a high sensitivity C-reactive protein level greater than 100 mg/L. (2) Change in gait progressing to paraparesis has been reported. (3) Progressive lumbar pain, weight loss, headache, vomiting, and impaired speech has been reported. • **Ophthalmic:** Ocular symptoms (e.g. night-blindness) may occur; refer patient to ophthalmologist if they develop symptoms suggestive of vitamin A deficiency. • **Renal:** (1) Cases of glomerulonephritis were accompanied by nephrotic syndrome. (2) Accumulation of antisense oligonucleotides in proximal tubule cells of the kidney, sometimes resulting in increased tubular proteinuria, has been reported; monitoring recommended. **ADVERSE REACTIONS** Most common adverse reactions: injection site reactions, nausea, headache, fatigue, thrombocytopenia, and fever. **DRUG INTERACTIONS** • **Antiplatelet drugs or anticoagulant medications:** Because of the risk of thrombocytopenia, caution should be used when using antiplatelet drugs, including non-prescription products that affect platelets, or anticoagulants, concomitantly with Tegsedi™. • **Nephrotoxic drugs:** Because of the risk of glomerulonephritis and renal toxicity, caution should be used when using nephrotoxic drugs and other drugs that may impair renal function concomitantly with Tegsedi™.

New FDA Approved Products

Drug/ Manufacturer	Therapeutic Class	Indications	Date	Comments
Tegsedi™ (inotersen) Injection, for subcutaneous use / Ionis Pharmaceuticals, Inc. (continuation)	Endocrine-Metabolic Agent Transthyretin Amyloidosis Agent	Treatment of the polyneuropathy of hereditary transthyretin-mediated amyloidosis in adults **Black box warning** Thrombocytopenia and glomerulonephritis.	10/05/2018	**USE IN SPECIFIC POPULATIONS** • **Pediatric use:** Safety and effectiveness in pediatric patients have not been established. • **Geriatric use:** May have increased risk of congestive heart failure, chills, myalgia, and extremity pain.

New FDA Approved Products

Drug/ Manufacturer	Therapeutic Class	Indications	Date	Comments
Yutiq™ (fluocinolone acetonide) Intravitreal Implant / EyePoint Pharmaceuticals, Inc.	Ophthalmologic Agent Anti-inflammatory Corticosteroid	Treatment of chronic non-infectious uveitis affecting the posterior segment of the eye	10/12/2018	**DOSAGE AND ADMINISTRATION** For ophthalmic intravitreal injection. **DOSAGE FORMS AND STRENGTHS** Non-bioerodible intravitreal implant containing 0.18 mg fluocinolone acetonide in a drug delivery system. **CONTRAINDICATIONS** • Ocular or periocular infections. • Hypersensitivity. **WARNINGS AND PRECAUTIONS** • Intravitreal injections have been associated with endophthalmitis, eye inflammation, increased intraocular pressure, and retinal detachments. Patients should be monitored following the injection. • Use of corticosteroids may produce posterior subcapsular cataracts, increased intraocular pressure, glaucoma, and may enhance the establishment of secondary ocular infections due to bacteria, fungi, or viruses. • The implant may migrate into the anterior chamber if the posterior lens capsule is not intact. **ADVERSE REACTIONS** Most common adverse reactions: cataract development and increases in intraocular pressure.

New FDA Approved Products

Drug/ Manufacturer	Therapeutic Class	Indications	Date	Comments
Talzenna™ (talazoparib) Capsules, for oral use / Pfizer Inc.	Antineoplastic Agent Poly (ADP-ribose) polymerase (PARP) inhibitor	Treatment of adult patients with deleterious or suspected deleterious germline BRCA-mutated (gBRCAm) HER2-negative locally advanced or metastatic breast cancer. • Select patients for therapy based on an FDA-approved companion diagnostic for Talzenna™.	10/16/2018	**DOSAGE AND ADMINISTRATION** The recommended dose is 1 mg taken as a single oral daily dose, with or without food. • Patients should be treated until disease progression or unacceptable toxicity occurs. • For adverse reactions, consider dosing interruption or dose reduction. • For patients with moderate renal impairment (CsCl 30 - 59 mL/min), the recommended dose of Talzenna™ is 0.75 mg once daily. **DOSAGE FORMS AND STRENGTHS** Capsules: 0.25 mg, 1 mg. **CONTRAINDICATIONS** None. **WARNINGS AND PRECAUTIONS** • **Myelodysplastic Syndrome/Acute Myeloid Leukemia (MDS/AML):** MDS/AML has been reported in 2 out of 584 (0.3%) solid tumor patients treated with Talzenna™ in clinical studies. Monitor patients for hematological toxicity at baseline and monthly thereafter. Discontinue if MDS/AML is confirmed. • **Myelosuppression:** Talzenna™ may affect hematopoiesis and can cause anemia, neutropenia, and/or thrombocytopenia. • **Embryo-Fetal Toxicity:** Talzenna™ can cause fetal harm. Advise of the potential risk to the fetus and to use effective contraception. **ADVERSE REACTIONS** Most common adverse reactions: fatigue, anemia, nausea, neutropenia, headache, thrombocytopenia, vomiting, alopecia, diarrhea, decreased appetite.

New FDA Approved Products

Drug/ Manufacturer	Therapeutic Class	Indications	Date	Comments
Talzenna™ (talazoparib) Capsules, for oral use / Pfizer Inc. (continuation)	Antineoplastic Agent Poly (ADP-ribose) polymerase (PARP) inhibitor	Treatment of adult patients with deleterious or suspected deleterious germline BRCA-mutated (gBRCAm) HER2-negative locally advanced or metastatic breast cancer. • Select patients for therapy based on an FDA-approved companion diagnostic for Talzenna™.	10/16/2018	**ADVERSE REACTIONS** (continuation) Most common laboratory abnormalities: decreases in hemoglobin, platelets, neutrophils, lymphocytes, leukocytes, and calcium. Increases in glucose, alanine aminotransferase, aspartate aminotransferase, and alkaline phosphatase. **DRUG INTERACTIONS** • **P-gp Inhibitors:** Reduce Talzenna™ dose for certain P-gp inhibitors, and monitor for potential increased adverse reactions as appropriate. • **BCRP Inhibitors:** Monitor for potential increased adverse reactions. **USE IN SPECIFIC POPULATIONS** • **Pregnancy:** Can cause fetal harm. Pregnancy test is recommended for females of reproductive potential prior to initiating treatment. • **Females and males of reproductive potential:** Advise females of reproductive potential to use effective contraception during treatment and for at least 7 months following the last dose. Advise male patients with female partners of reproductive potential and pregnant partners to use effective contraception during treatment and for at least 4 months following the last dose. • **Lactation:** Advise women not to breastfeed. • **Pediatric use:** Safety and effectiveness have not been established in pediatric patients. • **Renal impairment:** Reduce the recommended dose in patients with moderate renal impairment (CrCl 30 - 59 mL/min). No dose adjustment is required for patients with mild renal impairment. Talzenna™ has not been studied in patients with severe renal impairment or patients requiring hemodialysis. • **Hepatic impairment:** Talzenna™ has not been studied in patients with moderate hepatic impairment. No dose adjustment is required for patients with mild hepatic impairment.

New FDA Approved Products

Drug/ Manufacturer	Therapeutic Class	Indications	Date	Comments

Khapzory™ (levoleucovorin) for Injection, for intravenous use / Spectrum Pharmaceuticals, Inc.	Antineoplastic agent / Antidote / Methotrexate Rescue
	
	Folate analog
		• Rescue after high-dose methotrexate therapy in patients with osteosarcoma
		• Diminishing the toxicity associated with overdosage of folic acid antagonists or impaired methotrexate elimination
		• Treatment of patients with metastatic colorectal cancer in combination with fluorouracil
		
		Limitations of use
		Khapzory™ is not indicated for the treatment of pernicious anemia and megaloblastic anemia secondary to lack of vitamin B12 because of the risk of progression of neurologic manifestations despite hematologic remission.
			10/19/2018	**DOSAGE AND ADMINISTRATION**
				<u>Rescue after high-dose methotrexate (MTX) therapy</u>
				• Rescue recommendations are based on a MTX dose of 12 grams/m2 administered by intravenous infusion over 4 hours. Initiate rescue at a dose of 7.5 mg (approximately 5 mg/m2) every 6 hours, 24 hours after the beginning of the MTX infusion.
				• Continue until the MTX level is below 5 x 10-8 M (0.05 micromolar). Adjust dose if necessary based on MTX elimination.
				
				<u>Overdosage of folic acid antagonists or impaired MTX elimination</u>
				• Start as soon as possible after MTX overdosage, or within 24 hours of delayed MTX elimination.
				• Administer Khapzory™ 7.5 mg (approximately 5 mg/m2) intravenously every 6 hours until MTX level is less than 5 x 10-8 M (0.05 micromolar).
				
				<u>Metastatic colorectal cancer in combination with fluorouracil</u>
				• The following regimens have been used for the treatment of colorectal cancer:
				  • Khapzory™ 100 mg/m2 by intravenous injection over a minimum of 3 minutes, followed by fluorouracil 370 mg/m2 once daily for 5 consecutive days.
				  • Khapzory™ 10 mg/m2 by intravenous injection followed by fluorouracil 425 mg/m2 once daily for 5 consecutive days.
				• The above five-day courses may be repeated every 4 weeks for 2 courses, then every 4-5 weeks, if the patient has recovered from toxicity from the prior course.
				
				DOSAGE FORMS AND STRENGTHS
				For Injection: 175 mg and 300 mg of levoleucovorin lyophilized powder in a single-dose vial for reconstitution.

New FDA Approved Products

Drug/ Manufacturer	Therapeutic Class	Indications	Date	Comments
Khapzory™ (levoleucovorin) for Injection, for intravenous use / Spectrum Pharmaceuticals, Inc. (continuation)	Antineoplastic agent / Antidote / Methotrexate Rescue Folate analog	• Rescue after high-dose methotrexate therapy in patients with osteosarcoma • Diminishing the toxicity associated with overdosage of folic acid antagonists or impaired methotrexate elimination • Treatment of patients with metastatic colorectal cancer in combination with fluorouracil **Limitations of use** Khapzory™ is not indicated for the treatment of pernicious anemia and megaloblastic anemia secondary to lack of vitamin B12 because of the risk of progression of neurologic manifestations despite hematologic remission.	10/19/2018	**CONTRAINDICATIONS** • Severe hypersensitivity reactions to leucovorin products, folic acid, or folinic acid. **WARNINGS AND PRECAUTIONS** • **Concomitant use:** Increased risk of gastrointestinal toxicities, including stomatitis and diarrhea, when concomitantly used with fluorouracil; deaths from severe enterocolitis, diarrhea, and dehydration have been reported in elderly patients receiving d,l-leucovorin and fluorouracil. Monitoring recommended. Do not initiate or continue therapy in patients with symptoms of gastrointestinal toxicity until symptoms have resolved. **ADVERSE REACTIONS** Most common adverse reactions: diarrhea, nausea, stomatitis, vomiting. **DRUG INTERACTIONS** • **Fluorouracil:** Leucovorin products increase the toxicities of fluorouracil. • **Trimethoprim-sulfamethoxazole:** Increased rates of treatment failure and morbidity with concomitant use of d,l-leucovorin with trimethoprim-sulfamethoxazole for Pneumocystis jiroveci pneumonia in patients with HIV. **USE IN SPECIFIC POPULATIONS** • **Pediatric use:** Safety and effectiveness have been established in pediatric patients for rescue after high-dose methotrexate therapy in osteosarcoma and diminishing the toxicity associated with overdosage of folic acid antagonists or impaired methotrexate elimination. Safety and effectiveness have not been established for the treatment of pediatric patients with advanced metastatic colorectal cancer.

New FDA Approved Products

Drug/ Manufacturer	Therapeutic Class	Indications	Date	Comments
Xofluza™ (baloxavir marboxil) Tablets, for oral use / Genentech, Inc.	Anti-infective Agent Antiviral	Treatment of acute uncomplicated influenza in patients 12 years of age and older who have been symptomatic for no more than 48 hours. **Limitations of use** Influenza viruses change over time, and factors such as the virus type or subtype, emergence of resistance, or changes in viral virulence could diminish the clinical benefit of antiviral drugs. Consider available information on drug susceptibility patterns for circulating influenza virus strains when deciding whether to use Xofluza™.	10/24/2018	**DOSAGE AND ADMINISTRATION** The recommended dose is a single dose orally within 48 hours of symptoms onset with or without food. The dose depends on weight: • 40 kg to less than 80 kg: Single dose of 40 mg • At least 80 kg: Single dose of 80 mg **DOSAGE FORMS AND STRENGTHS** Tablets: 20 mg and 40 mg. **CONTRAINDICATIONS** • History of hypersensitivity to baloxavir marboxil or any of its ingredients. **WARNINGS AND PRECAUTIONS** • **Immunologic:** Secondary bacterial infections may occur; bacterial infection may start with flu-like symptoms, may coexist with, or occur as a complication of flu; if infection occurs, treat as appropriate. **ADVERSE REACTIONS** Most common adverse reactions: diarrhea, bronchitis, nasopharyngitis, headache and nausea. **DRUG INTERACTIONS** • Avoid co-administration of Xofluza™ with polyvalent cation-containing laxatives, antacids, or oral supplements (e.g., calcium, iron, magnesium, selenium, or zinc). • Live attenuated influenza vaccines may be affected by antivirals. **USE IN SPECIFIC POPULATIONS** • **Pediatric use:** Safety and efficacy in patients less than 12 years of age or weighing less than 40 kg have not been established.

New FDA Approved Products

Drug/ Manufacturer	Therapeutic Class	Indications	Date	Comments
Bijuva™ (estradiol and progesterone) Capsules, for oral use / TherapeuticsMD, Inc.	Endocrine-Metabolic Agent	Treatment of moderate to severe vasomotor symptoms due to menopause in woman with uterus **Black box warning** Cardiovascular disorders, breast cancer, endometrial cancer, and probable dementia	10/28/2018	**DOSAGE AND ADMINISTRATION** The recommended dose is one capsule orally each evening with food. **DOSAGE FORMS AND STRENGTHS** Capsules: 1 mg estradiol/100 mg progesterone. **CONTRAINDICATIONS** • Undiagnosed abnormal genital bleeding. • Known, suspected, or history of breast cancer. • Known or suspected estrogen-dependent neoplasia. • Active DVT, PE, or history of these conditions. • Active arterial thromboembolic disease (e.g. stroke and MI), or a history of these conditions. • Known anaphylactic reaction or angioedema with Bijuva™. • Known liver impairment or disease. • Known protein C, protein S, or antithrombin deficiency, or other known thrombophilic disorders. **WARNINGS AND PRECAUTIONS** • Estrogens increase the risk of gallbladder disease. • Discontinue estrogen if severe hypercalcemia, loss of vision, severe hypertriglyceridemia, or cholestatic jaundice occurs. • Monitor thyroid function in women on thyroid replacement hormone therapy. **ADVERSE REACTIONS** Most common adverse reactions: breast tenderness, headache, vaginal bleeding, vaginal discharge and pelvic pain. **DRUG INTERACTIONS** • Inducers and inhibitors of CYP3A4 may affect estrogen drug metabolism and decrease or increase the estrogen plasma concentration.

New FDA Approved Products

Drug/ Manufacturer	Therapeutic Class	Indications	Date	Comments
Bijuva™ (estradiol and progesterone) Capsules, for oral use / TherapeuticsMD, Inc. (continuation)	Endocrine-Metabolic Agent	Treatment of moderate to severe vasomotor symptoms due to menopause in woman with uterus **Black box warning** Cardiovascular disorders, breast cancer, endometrial cancer, and probable dementia	10/28/2018	**USE IN SPECIFIC POPULATIONS** • **Pediatric use:** Not indicated in children. • **Geriatric use:** An increased risk of probable dementia in women over 65 years of age was reported in the Women's Health Initiative Memory ancillary studies of the Women's Health Initiative.

New FDA Approved Products

Drug/ Manufacturer	Therapeutic Class	Indications	Date	Comments
Hyrimoz™ (adalimumab-adaz) Injection, for subcutaneous use / Sandoz Inc.	Antirheumatic Anti-TNF-α monoclonal antibody Note: Biosimilar to Humira™	Treatment of: • Rheumatoid Arthritis (RA) • Juvenile Idiopathic Arthritis (JIA) • Psoriatic Arthritis (PsA) • Ankylosing Spondylitis (AS) • Adult Crohn's Disease (CD) • Ulcerative Colitis (UC) • Plaque Psoriasis (Ps)	10/30/2018	**DOSAGE AND ADMINISTRATION** Rheumatoid Arthritis, Psoriatic Arthritis, Ankylosing Spondylitis: • 40 mg every other week. • Some patients with RA not receiving methotrexate may benefit from increasing the frequency to 40 mg every week. Juvenile Idiopathic Arthritis: • ≥ 30 kg (66 lbs): 40 mg every other week. Adult Crohn's Disease and Ulcerative Colitis: • Initial dose (Day 1): 160 mg (four 40 mg injections in one day or two 40 mg injections per day for two consecutive days). • Second dose two weeks later (Day 15): 80 mg. • Two weeks later (Day 29): Begin a maintenance dose of 40 mg every other week. • For patients with Ulcerative Colitis only: Only continue Hyrimoz™ in patients who have shown evidence of clinical remission by eight weeks (Day 57) of therapy. Plaque Psoriasis: • 80 mg initial dose, followed by 40 mg every other week starting one week after initial dose. **DOSAGE FORMS AND STRENGTHS** • Injection: 40 mg/0.8 mL in a single-dose pre-filled glass syringe (with BD UltraSafe Passive™ Needle Guard). • Injection: 40 mg/0.8 mL in a single-dose pre-filled pen (Sensoready® Pen). **CONTRAINDICATIONS** None. **WARNINGS AND PRECAUTIONS** • **Serious infections:** Do not start HYRIMOZ during an active infection. If an infection develops, monitor carefully, and stop Hyrimoz™ if infection becomes serious.

New FDA Approved Products

Drug/ Manufacturer	Therapeutic Class	Indications	Date	Comments
Hyrimoz™ (adalimumab-adaz) Injection, for subcutaneous use / Sandoz Inc. (continuation)	Antirheumatic Anti-TNF-α monoclonal antibody Note: Biosimilar to Humira™	Treatment of: • Rheumatoid Arthritis (RA) • Juvenile Idiopathic Arthritis (JIA) • Psoriatic Arthritis (PsA) • Ankylosing Spondylitis (AS) • Adult Crohn's Disease (CD) • Ulcerative Colitis (UC) • Plaque Psoriasis (Ps)	10/30/2018	**WARNINGS AND PRECAUTIONS** (continuation) • **Invasive fungal infections:** For patients who develop a systemic illness on Hyrimoz™, consider empiric antifungal therapy for those who reside or travel to regions where mycoses are endemic. • **Malignancies:** Incidence of malignancies was greater in adalimumab - treated patients than in control. • Anaphylaxis or serious allergic reactions may occur. • **Hepatitis B virus reactivation:** Monitor HBV carriers during and several months after therapy. If reactivation occurs, stop Hyrimoz™ and begin anti-viral therapy. • **Demyelinating disease:** Exacerbation or new onset, may occur. • **Cytopenias, pancytopenia:** Advise patients to seek immediate medical attention if symptoms develop, and consider stopping Hyrimoz™. • **Heart failure:** Worsening or new onset, may occur. • **Lupus-like syndrome:** Stop Hyrimoz™ if syndrome develops. **ADVERSE REACTIONS** Most common adverse reactions: infections (e.g. upper respiratory, sinusitis), injection site reactions, headache and rash. **DRUG INTERACTIONS** • **Abatacept:** Increased risk of serious infection. • **Anakinra:** Increased risk of serious infection. • **Live vaccines:** Avoid use with Hyrimoz™.

New FDA Approved Indications

Drug/ Manufacturer	Therapeutic class	Indications	Date	Comments
Hemlibra™ (emicizumab-kxwh) Injection / Genentech, Inc.	Antihemophilic Agent; Monoclonal antibody	**Previous indication(s):** To prevent or reduce the frequency of bleeding episodes in patients with hemophilia A (congenital factor VIII deficiency) with factor VIII inhibitors **New indication:** To prevent or reduce the frequency of bleeding episodes in patients with hemophilia A (congenital factor VIII deficiency) without factor VIII inhibitors	10/04/2018	Hemlibra™ is now the only prophylactic treatment for people with hemophilia A with and without factor VIII inhibitors that can be administered subcutaneously (under the skin) and at multiple dosing options (once weekly, every two weeks or every four weeks).
Gardasil 9 (human papillomavirus 9-valent vaccine, recombinant) Injection / Merck	Immunological Agent; Vaccine	**Previous indication(s):** For the prevention of cervical, vulvar, vaginal, and anal cancers caused by HPV types 6, 11, 16, 18, 31, 33, 45, 52 and 58 **Patient population altered:** To include individuals 27 through 45 years old	10/05/2018	The FDA approved a supplemental application for Gardasil 9 expanding the approved use of the vaccine to include women and men aged 27 through 45 years. Gardasil 9 prevents certain cancers and diseases caused by the nine HPV types covered by the vaccine.

New FDA Approved Indications

Drug/ Manufacturer	Therapeutic class	Indications	Date	Comments
Xarelto™ (rivaroxaban) Tablets / Janssen Pharmaceuticals, Inc.	Anticoagulant; Factor Xa Inhibitor	**Previous indication(s):** To reduce the risk of stroke and systemic embolism in patients with non-valvular Afib; Treatment of DVT; Treatment of PE; To reduce in the risk of recurrence of DVT and/or PE in patients at continued risk for recurrent DVT and/or PE after completion of initial treatment lasting at least 6 months; Prophylaxis of DVT, which may lead to PE in patients undergoing knee or hip replacement surgery **New indication:** In combination with aspirin, to reduce the risk of major cardiovascular events (cardiovascular (CV) death, myocardial infarction (MI) and stroke) in patients with chronic coronary artery disease (CAD) or peripheral artery disease (PAD)	10/11/2018	Xarelto™ is now the first and only Factor Xa inhibitor approved for patients living with chronic CAD and/or PAD. This new indication is based on results from the landmark COMPASS trial, which showed a significant 24% reduction of the risk of major CV events in patients with chronic CAD and/or PAD with the Xarelto™ 2.5-mg vascular dose twice daily plus aspirin 100 mg once daily, compared to aspirin alone. This finding was driven by a 42% reduction in stroke, 22% reduction in CV death and 14% reduction in heart attack. However, it is of note that the risk of major bleeding was significantly higher in patients taking the Xarelto/aspirin regimen compared to aspirin alone, with no significant increase in fatal or intracranial bleeds.
Dupixent™ (dupilumab) Injection / Sanofi and Regeneron Pharmaceuticals, Inc.	Interleukin-4 receptor alpha antagonist	**Previous indication(s):** Treatment of adult patients with inadequately controlled moderate-to-severe atopic dermatitis **New indication:** As an add-on maintenance treatment in patients aged 12 years and older with moderate-to-severe asthma	10/19/2018	The FDA has approved Dupixent™ as an add-on maintenance therapy in patients with moderate-to-severe asthma aged 12 years and older with an eosinophilic phenotype or with oral corticosteroid-dependent asthma.

New FDA Approved Formulations

Drug/ Manufacturer	Therapeutic class	Indications	Date	Comments
Xyosted™ (testosterone enanthate) Subcutaneous Injection / Antares Pharma, Inc.	Endocrine-Metabolic agent; Androgen	Testosterone replacement therapy in adult males for conditions associated with a deficiency or absence of endogenous testosterone	09/28/2018	Xyosted™ is the first FDA-approved subcutaneous testosterone enanthate product. Xyosted™ has been approved in three dosage strengths, 50 mg, 75 mg and 100 mg.
Yutiq™ (fluocinolone acetonide) Intravitreal Implant / EyePoint Pharmaceuticals, Inc.	Ophthalmologic Agent; Anti-inflammatory; Corticosteroid	Treatment of chronic non-infectious uveitis affecting the posterior segment of the eye	10/12/2018	Yutiq™ is an intravitreal microinsert that utilizes the Durasert™ drug delivery technology. Yutiq™ contains 0.18 mg of fluocinolone acetonide and is designed to release over 36 months. Before the approval of Yutiq™, a fluocinolone acetonide intraocular implant was already available under the brand name Retisert™. Retisert™ contains 0.56 mg of fluocinolone acetonide and is designed to release over 30 months.
QMIIZ ODT™ (meloxicam) / TerSera Therapeuticss LLC	Non-steroidal anti-inflammatory drug (NSAID)	• Osteoarthritis in adults • Rheumatoid Arthritis in adults • Juvenile Rheumatoid Arthritis Pauciarticular and Polyarticular Course, in pediatric patients who weigh greater than or equal to 60 kg	10/19/2018	Meloxicam was already available as oral tablet and oral capsule. Qmiiz ODT™ will be available as 7.5 mg or 15 mg orally disintegrating tablets.

New First Time Generic Drug Approval

Drug/Manufacturer	Therapeutic Class	Date	Comments
Cefixime Capsules 400 mg / Alkem Laboratories Limited	Anti-infective agent; Antibiotic; 3rd generation cephalosporin	10/09/2018	Generic for: Suprax Capsules
Clobazam Tablets 10 mg and 20 mg / Amneal Pharmaceuticals LLC; Bionpharma Inc.; Breckenridge Pharmaceutical, Inc.; Camber Pharmaceuticals, Inc.; Sandoz Inc.; Taro Pharmaceuticals U.S.A., Inc.; Upsher-Smith Laboratories, LLC; West-Ward Pharmaceuticals Corp.; Zydus Pharmaceuticals (USA) Inc.	Central nervous system agent; Benzodiazepine	10/22/2018	Generic for: Onfi Tablets
Clobazam Oral Suspension 2.5 mg/mL / Amneal Pharmaceuticals LLC; Bionpharma Inc.; Mylan Pharmaceuticals Inc.; Upsher-Smith Laboratories, LLC; West-Ward Pharmaceuticals Corp.	Central nervous system agent; Anticonvulsant; Benzodiazepine	10/22/2018	Generic for: Onfi Oral Suspension
Naproxen Sodium and Diphenhydramine Hydrochloride Tablets 220mg/25mg / Amneal Pharmaceuticals LLC	Analgesic/Anti-inflammatory; Non-steroidal anti-inflammatory drug	10/23/2018	Generic for: Aleve PM

Source: https://www.drugs.com/generic-approvals.html

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Drug/Manufacturer	Date	Indications	Comments	Impact
Feraccru™ (ferric maltol) / Shield Therapeutics plc	10/01/2018	Treatment for: Iron Deficiency	Feraccru™ (ferric maltol) is a non-salt formulation of ferric iron in development for the treatment of iron deficiency. Shield Therapeutics submitted and NDA for Feraccru™.	Moderate

Soruce: https://www.drugs.com/new-drug-applications.html

References:

- Drugs.com (www.drugs.com)
- Food and Drug Administration (www.fda.gov)
- IBM Micromedex® (www.micromedexsolutions.com)
- Pharmacist Letter (www.pharmacistletter.com)
- P&T Community (www.ptcommunity.com)