College of Pharmacy and Pharmaceutical Sciences
WASHINGTON STATE UNIVERSITY

Drug Information Center

Highlights of FDA Activities – 11/1/19 – 11/30/19

FDA Drug Safety Communications & Drug Information Updates:

Biotin May Interfere with Lab Tests: Drug Safety Communication - Update 11/5/19
The FDA issued a reminder that biotin can significantly interfere with certain lab tests and cause incorrect results that may be undetected. The FDA is particularly concerned about biotin interference causing a falsely low result for troponin, an important biomarker to aid in the diagnosis of heart attacks.

Major Medication/Drug-Related Product Recalls Announced Through MedWatch:

LETS GEL KIT Convenience Packs by Fagron Inc: Recall – Potential Microbial Contamination 11/1/19
Fagron Inc. recalled all lots of the topical anesthetic LETS GEL KIT Convenience Packs to the hospital, pharmacy, and distributor level. FDA analysis identified *Bacillus fortis/Geobacillus toebii, Bacillus spp,* and *Bacillus circulans* as contaminants in samples of the non-sterile suturagel methylcellulose base component obtained during inspection.

MiniMed Insulin Pump by Medtronic: Recall – Cybersecurity Risks 11/5/19
Medtronic recalled MiniMed Model 500 Remote Control and 503 Remote Transmitter insulin pumps due to the potential for an unauthorized person to record and replay wireless communication between the remote and the pump, thereby altering insulin delivery to the patient.

Ranitidine tablets, capsules & syrup by Aurobindo Pharma USA: Recall – NDMA 11/6/19
Aurobindo Pharma USA recalled 1 lot of ranitidine tablets 150 mg to the retail level and 37 lots of ranitidine capsules 150 mg and 300 mg, and ranitidine syrup 15 mg/mL to the consumer level due to detection of N-nitrosodimethylamine (NDMA) impurity. A complete list of recalled lots can be found on the FDA recall site.

Ranitidine Liquid Unit Dose Cups by American Health Packaging: Recall – NDMA 11/8/19
American Health Packaging recalled 8 lots of Ranitidine Syrup 150 mg/10 mL Liquid Unit Dose Cups due to detection of NDMA in the finished product. A list of recalled lots can be found on the FDA recall site.

Ranitidine tablets and syrup by Amneal Pharmaceuticals, LLC: Recall – NDMA 11/12/19
Amneal Pharmaceuticals recalled ranitidine tablets 150 mg and 300 mg, and ranitidine syrup (oral solution, USP) 15 mg/mL due to potential NDMA amounts above levels established by the FDA. A full list of recalled lots can be found on the FDA site.

Ranitidine capsules from Golden State Medical Supply (Novitium Pharma LLC): Recall – NDMA 11/15/19
Golden State Medical Supply, Inc based upon a manufacturer's recall by Novitium Pharma LLC recalled ranitidine HCl 150 mg and 300 mg capsules due to potential presence of NDMA. Recalled lots can be found on the FDA site.

Ranitidine oral solution by Precision Dose, Inc: Recall – Potential NMDA Amounts 11/19/19
Precision Dose Inc is recalling 5 lots of ranitidine oral solution, USP 150 mg/10 mL due to potential presence of NDMA. The list of recalled lots can be found on the FDA site.

Blood Administration Sets by B. Braun Medical: Recall – Potential leakage between filters & tubing 11/26/19
B. Braun Medical recalled 22 lots of Blood Administration Sets due to potential for leakage at the joint between the blood filters and tubing. The list of recalled lots can be found on the FDA site.

Dietary Supplement Recalls & Public Notifications

Notifications were issued regarding undeclared active ingredients or contaminants in the following products. Patients are advised not to purchase or use these products.

Product	***Promoted Use***	***Undeclared Ingredient(s) or Contaminants***
Man Erect	Sexual enhancement	Sildenafil[1]
Nature's Rx Silver Bullet*	Sexual Enhancement	Sildenafil[1]
Power Khan	Sexual enhancement	Desmethyl thiosildenafil, thioaildenafil, aildenafil[1]
SHENGDA	Sexual enhancement	sildenafil[1]
Silver Bullet 10 Male Enhancement Capsules*	Sexual enhancement	sildenafil[1]
Up2*	Sexual enhancement	Sildenafil[1]

*recalled

[1]Sildenafil and tadalafil, metabolites, and structural analogs may interact with nitrates to lower blood pressure to dangerous levels

New Product Shortages	***Date Initially Posted***
Oxytocin Injection USP, Synthetic	11/6/19
Loxapine Capsules	11/25/19

Product Discontinuations/Withdrawals	***Date Posted***
Chlordiazepoxide HCl capsules 5 mg, 10 mg, and 25 mg (Bausch Health); chlordiazepoxide capsules remain available from other manufacturers.	11/19/19
Clozapine 12.5 mg, 25 mg, 100 mg, 150 mg, and 200 mg orally disintegrating tablets (FazaClo, Jazz Pharmaceuticals, Inc); clozapine remains available from other manufacturers.	11/22/19
Eptifibatide (Integrilin) 0.75 mg/mL and 2 mg/mL injection (Merck Sharp & Dohme Corp); eptifibatide injection remains available from other manufacturers.	11/18/19
Hydrocortisone Acetate Suppository, box of 12, 24, and 100 by Torrent Pharma; hydrocortisone acetate suppositories remain available from other manufacturers.	11/25/19
Ketoprofen Capsules, 25 mg in 100 and 1000 count bottles by Avet Pharmaceuticals; ketoprofen capsules remain available from other manufacturers.	11/25/19
Loxapine capsules, 5 mg, 10 mg, 25 mg, and 50 mg capsules, 1000 count bottle by Lannett Company, Inc; loxapine capsules remain available from other manufacturers.	11/25/19
Nystatin Cream, 100,000 USP units per gram, 15 g and 30 g (Teva Pharmaceuticals); nystatin cream remains available from other manufacturers.	11/14/19
Oxycodone HCl tablets 5 mg, 15 mg, 30 mg (Teva); product remains available from other manufacturers.	11/7/19
Oxytocin synthetic injection (Pitocin, Par Pharmaceutical); oxytocin synthetic injection remains available from other manufacturers, although a shortage currently exists.	11/1/19
Paclitaxel injection 100 mg in 16.7 mL (6 mg/mL) multi-dose vial by Mylan Institutional; paclitaxel injection remains available from other manufacturers.	11/22/19
Phenobarbital oral solution, 473 mL (Torrent Pharma); phenobarbital oral solution remains available from other manufacturers.	11/25/19
Quinapril HCl (Accupril, Pfizer) 5 mg, 10 mg, 20 mg tablets in 10x10 blister packs; quinapril HCl tablets remain available from other manufacturers and in other package sizes as Accupril.	11/12/19
Tizanidine HCl tablets (Mylan Pharmaceuticals); tizanidine tablets remain available from other manufacturers.	11/21/19
Valacyclovir HCl 1-gram tablets (Teva Pharmaceuticals); valacyclovir HCl remains available from other manufacturers.	11/15/19
Vinorelbine tartrate injection (Pierre Fabre Pharmaceuticals, Inc); vinorelbine tartrate remains available from other manufacturers.	11/8/19

New Drug Approvals:	***Description (See Attached Drug Summaries)***	***Date Approved***
Air Polymer-type A / ExEm Foam / IQ Medical Ventures BV	Ultrasound contrast agent for use in assessing fallopian tube patency in women with known or suspected infertility.	11/7/19
Luspatercept-aamt / Reblozyl / Celgene	For treatment of anemia in adult patients with beta thalassemia requiring regular red blood cell transfusions.	11/8/19
Zanubrutinib / Brukinsa / BeiGene USA Inc	For the treatment of adult patients with relapsed or refractory mantle cell lymphoma.	11/14/19
Cefiderocol / Fetroja / Shionogi & Co., Ltd	Treatment of complicated urinary tract infections caused by susceptible Gram-negative microorganisms.	11/14/19
Crizanlizumab-tmca / Adakveo / Novartis	To reduce the frequency of vaso-occlusive crisis in sickle cell disease.	11/15/19
Givosiran / Givlaari / Ajinomoto Althea Inc	Treatment of adults with acute hepatic porphyria.	11/20/19
Cenobamate / Xcopri / SK Life Science Inc	Treatment of partial-onset seizures in adult patients.	11/21/19
Voxelotor / Oxbryta / Global Blood Therapeutics	Treatment of sickle cell disease in adults and pediatric patients 12 years of age and older.	11/25/19

New Indications:	***Description***	***Date Approved***
Calcipotriene foam, 0.005% / Sorilux / Mayne Pharma LLC	Indication expanded to include use in patients 4 years and older	11/5/19
Sulfur hexafluoride lipid-type A microspheres / Lumason / Bracco Diagnostics	Indication expanded to include use in echocardiography in pediatric patients with suboptimal echocardiograms	11/13/19
Calquence / Acalabrutinib / AstraZeneca	Treatment of adults with chronic lymphocytic leukemia or small lymphocytic lymphoma.	11/21/19
Insulin glargine injection U-300 / Toujeo / Sanofi-aventis	Indication expanded to include pediatric patients 6 to 17 years of age with diabetes mellitus	11/26/19

New Dosage Forms or Formulation:	***Description***	***Date Approved***
Palbociclib / Ibrance / Pfizer Inc	Tablets: 75 mg, 100 mg, 125 mg; breast cancer therapy	11/1/19
Influenza vaccine / Fluzone High-Dose Quadrivalent / Sanofi Pasteur	Influenza vaccination in patients 65 years and older	11/4/19
Pegfilgrastim-Bmez / Ziextenzo / Sandoz	Biosimilar to Neulasta	11/4/19
Omeprazole magnesium, amoxicillin, rifabutin / Talicia / Redhill Biopharma	Capsule, delayed-release. Administered every 8 hours for 14 days to treat Helicobacter pylori infection in adults.	11/4/19
Riluzole / Exservan / Aquestive Therapeutics	Oral film: 50 mg; for the treatment of amyotrophic lateral sclerosis.	11/22/19

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Luspatercept-aamt / Reblozyl / Celgene	
Generic Name / Brand Name / Company	Luspatercept-aamt / Reblozyl / Celgene
Date of approval	11/8/19
Drug Class (Mechanism of Action if novel agent)	Erythroid maturation agent; recombinant fusion protein that binds endogenous TGF-β superfamily ligands, thereby diminishing Smad2/3 signaling
Indication	Treatment of anemia in adult patients with beta thalassemia who require regular red blood cell transfusions.
Comparative agent – Therapeutic interchange?	None
Dosage forms/strengths	For injection: 25 mg and 75 mg lyophilized powder in a single-dose vial for reconstitution
Common Dose/sig	1 mg/kg once every 3 weeks by subcutaneous injection; dose may be increased to 1.25 mg/kg after 6 weeks (2 doses) if reduction in transfusion burden isn't achieved
DEA Schedule	None
Date of market availability	Available
Similar Medication Names	Etanercept
Clinical Use Evaluation	
Common Adverse Effects	>10%: headache, bone pain, arthralgia, fatigue, cough, abdominal pain, diarrhea, dizziness
Severe Adverse Effects	Thrombosis/thromboembolism, hypertension, bone pain, hyperuricemia
Severe Drug-Drug Interactions	None known
Severe Drug-Food Interactions	None
Important Labs Values to assess prior to order entry or at point of clinical follow up.	Hemoglobin should be assessed prior to each dose.
Used in Pediatric Areas	Safety and effectiveness in pediatric patients have not been established.
Renal or Hepatic Dosing	No recommended dosing adjustments.
Critical Issues (i.e., contraindications, warnings, etc) that should be emphasized	No labeled contraindications. Warnings: thrombosis risk, hypertension, embryo-fetal toxicity. If the pre-dose Hgb is $\geq$ 11.5 g/dL and the Hgb level is not influenced by recent transfusion, delay dosing until the Hgb is $\leq$ 11 g/dL. Discontinue therapy if no response after 9 weeks (3 doses).
Special administration technique or considerations	Reconstitute with Sterile Water for Injection, USP only. Luspatercept should be reconstituted and administered by a healthcare professional. Administer into the upper arm, thigh, and/or abdomen.
Prepared by	Debbie Li
Source	Reblozyl (luspatercept-ammt) [prescribing information]. Summit, NJ: Celgene Corporation, November 2019.

Zanubrutinib / Brukinsa / BeiGene USA Inc	
Generic Name / Brand Name / Company	Zanubrutinib / Brukinsa / BeiGene USA Inc
Date of approval	11/14/19
Drug Class (Mechanism of Action if novel agent)	Bruton's tyrosine kinase inhibitor
Indication	Treatment of adult patients with mantle cell lymphoma who have received at least one prior therapy.
Comparative agent – Therapeutic interchange?	Ibrutinib, acalabrutinib
Dosage forms/strengths	Capsules: 80 mg
Common Dose/sig	160 mg orally twice daily or 320 mg orally once daily
DEA Schedule	None
Date of market availability	Available
Similar Medication Names	Zanamivir, Brucelin
Clinical Use Evaluation	
Common Adverse Effects	>20%: decreased neutrophil count, decreased platelet count, upper respiratory tract infection, decreased white blood cell count, decreased hemoglobin, rash, bruising, diarrhea, cough
Severe Adverse Effects	Pneumonia, hemorrhage, cytopenias, hypertension, musculoskeletal pain, hypokalemia, hyperuricemia
Severe Drug-Drug Interactions	CYP3A inhibitors and inducers; modify zanubrutinib dose with inhibitors and avoid co-administration with moderate or strong inducers.
Severe Drug-Food Interactions	None known
Important Labs Values to assess prior to order entry or at point of clinical follow up.	CBC
Used in Pediatric Areas	Safety and effectiveness in pediatric patients have not been established.
Renal or Hepatic Dosing	- No dosage modification recommended in patients with mild to moderate renal impairment (CrCl $\geq$30 mL/min). Monitor for adverse reactions in patients with severe renal impairment (CrCl < 30 mL/min) or on dialysis. - No dosage modification for mild to moderate hepatic impairment. Dosing for severe hepatic impairment is 80 mg orally twice daily.
Critical Issues (i.e., contraindications, warnings, etc) that should be emphasized	No labeled contraindications. Warnings: hemorrhage, infections, cytopenias, atrial fibrillation and atrial flutter, second primary malignancies, embryo-fetal toxicity. New cancers have happened in people during treatment, including skin cancers and non-skin cancers. Advise use of sun protection. Dose adjustments recommended for grade 3 or 4 toxicities.
Special administration technique or considerations	Capsules should not be opened, broken, or chewed. Should be swallowed whole with water and with or without food.
Prepared by	Debbie Li
Source	Brukinsa (zanubrutinib) [prescribing information]. San Mateo, CA: BeiGene USA, Inc, November 2019.

Cefiderocol / Fetroja / Shionogi & Co., Ltd	
Generic Name / Brand Name / Company	Cefiderocol / Fetroja / Shionogi & Co., Ltd
Date of approval	11/14/19
Drug Class (Mechanism of Action if novel agent)	Siderophore cephalosporin antibacterial with activity against Gram-negative aerobic bacteria; exerts bactericidal action by inhibiting cell wall biosynthesis through binding to penicillin-binding proteins
Indication	Complicated urinary tract infections, including pyelonephritis, caused by susceptible Gram-negative microorganisms
Comparative agent – Therapeutic interchange?	None; reserved for use in patients with limited or no alternative treatment options
Dosage forms/strengths	Injection: 1 g as a lyophilized powder for reconstitution
Common Dose/sig	Dose is based on estimated creatinine clearance; duration 7 to 14 days. - CrCl 120 mL/min or greater: 2 g IV every 6 hours - CrCl 60 to 119 mL/min: 2 g IV every 8 hours - CrCl 30 to 59 mL/min: 1.5 g every 8 hours - CrCl 15 to 29 mL/min: 1 g every 8 hours - ESRD Patients (CrCl less than 15 mL/min) with or without intermittent hemodialysis: 0.75 g every 12 hours
DEA Schedule	None
Date of market availability	Anticipated in early 2020
Similar Medication Names	Chloramphenicol
Clinical Use Evaluation	
Common Adverse Effects	≥ 2%: diarrhea, infusion site reactions, constipation, rash, candidiasis, cough, elevations in liver tests, headache, hypokalemia, nausea, vomiting.
Severe Adverse Effects	Increase in all-cause mortality with carbapenem-resistant gram-negative bacterial infections, hypersensitivity reactions, seizures, diarrhea, increased hepatic enzymes
Severe Drug-Drug Interactions	None reported
Severe Drug-Food Interactions	None reported
Important Labs Values to assess prior to order entry or at point of clinical follow up.	Renal function prior to initiation
Used in Pediatric Areas	Safety and efficacy in pediatric patients have not been established
Renal or Hepatic Dosing	No dosage adjustments in hepatic impairment. Dosed based on renal function.
Critical Issues (i.e., contraindications, warnings, etc) that should be emphasized	Contraindications: Known history of severe hypersensitivity to cefiderocol or any of the inactive ingredients or other beta-lactam antibacterial drugs Warnings: - Increase in all-cause mortality in patients with carbapenem-resistant gram-negative bacterial infections. Reserve cefiderocol for use in patients who have limited or no alternative treatment options. - Serious and occasionally fatal hypersensitivity (anaphylactic) reactions - Clostridium-difficile associated diarrhea - Seizures and CNS Adverse Reactions have been reported with cefiderocol. If focal tremors, myoclonus, or seizures occur, evaluate patient to determine if treatment should be discontinued.
Special administration technique or considerations	Administer via intravenous infusion over 3 hours only after dilution in an appropriate infusion solution.
Prepared by	Brittany Craft
Source	Fetroja (cefiderocol) [prescribing information]. Florham Park, NJ: Shionogi Inc., November 2019.

Crizanlizumab-tmca / Adakveo / Novartis	
Generic Name / Brand Name / Company	Crizanlizumab-tmca / Adakveo / Novartis
Date of approval	11/15/19
Drug Class (Mechanism of Action if novel agent)	Humanized IgG2 kappa monoclonal antibody that binds to P-selectin and blocks interactions with its ligands including P-selectin glycoprotein ligand 1. Binding P-selectin on the surface of the activated endothelium and platelets blocks interactions between endothelial cells, platelets, red blood cells, and leukocytes.
Indication	Reduce the frequency of vasoocclusive crises in adults and pediatric patients aged 16 years and older with sickle cell disease
Comparative agent – Therapeutic interchange?	None
Dosage forms/strengths	Injection: 100 mg/10 mL solution in a single dose vial
Common Dose/sig	5 mg/kg by IV infusion over a period of 30 minutes at week 0, week 2, and every 4 weeks thereafter.
DEA Schedule	None
Date of market availability	Anticipated availability in late 2019
Similar Medication Names	Crizotinib
Clinical Use Evaluation	
Common Adverse Effects	≥ 10%: nausea, arthralgia, back pain, and pyrexia
Severe Adverse Effects	Infusion-related reactions, pyrexia, arthralgia
Severe Drug-Drug Interactions	None known
Severe Drug-Food Interactions	None known
Important Labs Values to assess prior to order entry or at point of clinical follow up.	Interference with automated platelet counts (platelet clumping) has been observed when blood samples were collected in tubes containing ethylenediaminetetraacetic acid (EDTA). which may lead to unevaluable or falsely decreased platelet counts. Run blood samples within 4 hours of blood collection or collect blood samples in tubes containing citrate. When needed, estimate platelet count via peripheral blood smear.
Used in Pediatric Areas	Safety and effectiveness have not been established in pediatric patients younger than 16 years.
Renal or Hepatic Dosing	No dosage adjustments recommended. The effect of renal or hepatic impairment on the pharmacokinetics of crizanlizumab is unknown
Critical Issues (i.e., contraindications, warnings, etc) that should be emphasized	No labeled contraindications. Warnings: infusion-related reactions; monitor.
Special administration technique or considerations	Administer diluted solution by IV infusion over a period of 30 minutes through a line with a sterile, nonpyrogenic 0.2-micron filter. Flush the line after administration. May be given with or without hydroxyurea
Prepared by	Audrian Santos
Source	Adakveo (crizanlizumab-tmca) [prescribing information]. East Hanover, NJ: Novartis Pharmaceutical Corporation, November 2019.

Givosiran sodium / Givlaari / Alnylam Pharmaceuticals Inc.	
Generic Name / Brand Name / Company	Givosiran / Givlaari / Alnylam Pharmaceuticals Inc.
Date of approval	11/20/19
Drug Class (Mechanism of Action if novel agent)	Aminolevulinate synthase 1-directed small interfering ribonucleic acid (RNAi). Reduces elevated levels of liver ALAS1 mRNA leading to reduced circulating concentrations of neurotoxic intermediates aminolevulinic acid and porphobilinogen.
Indication	Treatment of adults with acute hepatic porphyria
Comparative agent – Therapeutic interchange?	None
Dosage forms/strengths	Injection: 189 mg/mL in a single-dose vial.
Common Dose/sig	2.5 mg/kg administered via subcutaneous injection once monthly.
DEA Schedule	None
Date of market availability	By end of 2019
Similar Medication Names	Gianvi
Clinical Use Evaluation	
Common Adverse Effects	≥20%: nausea and injection site reactions
Severe Adverse Effects	Anaphylaxis, hepatic toxicity, renal toxicity, and
Severe Drug-Drug Interactions	Givosiran increased the concentration of CYP1A2 or CYP2D6 substrates, potentially leading to adverse reactions for these products. Avoid concomitant use of CYP1A2 or CYP2D6 substrates for which minimal changes in concentration may lead to serious or life-threatening reactions.
Severe Drug-Food Interactions	None identified
Important Labs Values to assess prior to order entry or at point of clinical follow up.	Liver function test at baseline and repeat monthly during the first six months of treatment, and as clinically indicated thereafter. Renal function should be monitored during treatment.
Used in Pediatric Areas	Safety and efficacy have not been established
Renal or Hepatic Dosing	In patients with severe or clinically significant transaminase elevations, who have dose interruption and subsequent improvement, reduce the dose to 1.25 mg/kg once monthly from 2.5 mg/kg once monthly. No dosage adjustment in renal impairment.
Critical Issues (i.e., contraindications, warnings, etc) that should be emphasized	Contraindications: known severe hypersensitivity Warnings: Anaphylaxis, hepatic toxicity, renal toxicity, and injection site reactions. Dose adjustment recommended if severe transaminase elevations.
Special administration technique or considerations	Givosiran should be administered subcutaneously by a healthcare professional only. Medical support should be available to appropriately manage anaphylactic reactions when administering this product. Administer into abdomen, upper arms, thighs; rotate injection sites. If more than one injection necessary, separate injection sites by at least 2 cm.
Prepared by	Li-Wei Chen
Source	Givlaari (givosiran) injection [prescribing information]. Cambridge, MA: Alnylam Pharmaceuticals Inc; November 2019.

Cenobamate / Xcopri / SK Life Science, Inc.	
Generic Name / Brand Name / Company	Cenobamate / Xcopri / SK Life Science, Inc.
Date of approval	11/21/19
Drug Class (Mechanism of Action if novel agent)	Positive allosteric modulator of the γ-aminobutyric acid ($GABA_A$) ion channel; reduced repetitive neuronal firing by inhibiting voltage-gated sodium currents. Precise mechanism in patients with partial onset seizures is unknown.
Indication	Treatment of partial-onset seizures in adult patients.
Comparative agent – Therapeutic interchange?	Felbamate – not first line
Dosage forms/strengths	Tablets: 12.5 mg, 25 mg, 50 mg, 100 mg, 150 mg, and 200 mg.
Common Dose/sig	Initial dose: 25 mg orally once daily, titrated over 10 weeks to the recommended maintenance dosage of 200 mg once daily. Maximum dosage is 400 mg once daily.
DEA Schedule	To be determined after DEA Review
Date of market availability	Second quarter of 2020; pending DEA review
Similar Medication Names	Felbamate, meprobamate, mebutamate, tybamate
Clinical Use Evaluation	
Common Adverse Effects	> 10%: somnolence, dizziness, fatigue, diplopia, and headache.
Severe Adverse Effects	Suicidal ideation, hypersensitivity reactions
Severe Drug-Drug Interactions	Phenytoin: Gradually decrease phenytoin dose by up to 50%. Phenobarbital and clobazam: Reduce dosage as needed when used with cenobamate. Lamotrigine and carbamazepine: Increase dosage as needed when used with cenobamate CYP2B6 and CYP3A substrates: Increase dosage as needed. CYP2C19 substrates: Reduce dosage as needed. Oral Contraceptives (OC): Effectiveness of hormonal OC may be reduced; women should use additional or alternative non-hormonal birth control.
Severe Drug-Food Interactions	Not applicable
Important Labs Values to assess prior to order entry or at point of clinical follow up.	None required
Used in Pediatric Areas	Safety and effectiveness in pediatric patients have not been established.
Renal or Hepatic Dosing	Renal: Use with caution or dose reduction in mild to severe renal impairment. Use in end-stage renal disease undergoing dialysis is not recommended Hepatic: Maximum dosage is 200 mg once daily in mild or moderate impairment. Use in severe hepatic impairment is not recommended.
Critical Issues (i.e., contraindications, warnings, etc) that should be emphasized	Contraindications: Hypersensitivity and familial short QT syndrome Warnings: - Drug reaction with Eosinophilia and Systemic Symptoms (DRESS)/Multi-organ Hypersensitivity: discontinue if no alternate etiology. - QT shortening: caution with other drugs that shorten QT interval. - Suicidal Behavior and Ideation: Monitor patients - Neurological Adverse Reactions: Monitor for somnolence and fatigue; concomitant CNS depressants or alcohol can have additive effects. - Withdraw gradually when discontinuing to minimize potential of increased seizure frequency.
Special administration technique or considerations	Swallow tablets whole with liquid. Do not crush or chew.
Prepared by	Brittany Craft
Source	Xcopri (cenobamate) [prescribing information]. Paramus, NJ: SK Life Science Inc., November 2019.

Voxelotor / Oxbryta / Global Blood Therapeutics	
Generic Name / Brand Name / Company	Voxelotor / Oxbryta / Global Blood Therapeutics
Date of approval	11/25/19
Drug Class (Mechanism of Action if novel agent)	Hemoglobin S (HbS) polymerization inhibitor; binds to HbS with 1:1 stoichiometry and exhibits preferential partitioning to red blood cells. By increasing the affinity of Hb for oxygen, voxelotor demonstrates dose-dependent inhibition of HbS polymerization.
Indication	Treatment of sickle cell disease in adults and pediatric patients 12 years of age or older.
Comparative agent – Therapeutic interchange?	None
Dosage forms/strengths	Tablets: 500 mg
Common Dose/sig	1500 mg orally once daily with or without food
DEA Schedule	None
Date of market availability	Available
Similar Medication Names	Voxilaprevir
Clinical Use Evaluation	
Common Adverse Effects	>10%: headache, diarrhea, abdominal pain, nausea, fatigue, rash, pyrexia
Severe Adverse Effects	Serious hypersensitivity reactions (rash, urticaria, mild shortness of breath, mild facial swelling, eosinophilia), headache, pulmonary embolism
Severe Drug-Drug Interactions	Sensitive CYP3A4 substrates, strong CYP3A4 inhibitors and inducers: avoid; Adjust dose if must be administered concomitantly.
Severe Drug-Food Interactions	None known
Important Labs Values to assess prior to order entry or at point of clinical follow up.	Hgb response is indicative of efficacy
Used in Pediatric Areas	Safety and effectiveness have not been established in pediatric patients younger than 12 years. Pharmacokinetics, safety, and efficacy in pediatric patients 12 years to < 17 years were similar to that observed in adults.
Renal or Hepatic Dosing	Severe hepatic impairment (Child Pugh C): 1000 mg orally once daily No adjustments in renal impairment or mild to moderate hepatic impairment.
Critical Issues (i.e., contraindications, warnings, etc) that should be emphasized	Contraindications: serious hypersensitivity reaction Warnings: hypersensitivity Voxelotor administration may interfere with measure of Hb subtypes (HbA, HbS, HbF) by high-performance liquid chromatography (HPLC). If precise quantitation of Hb species is required, chromatography should be performed when the patient is not receiving voxelotor therapy.
Special administration technique or considerations	Tablets should be swallowed whole. Do not cut, crush, or chew. May be given with or without hydroxyurea.
Prepared by	Debbie Li
Source	Oxbryta (voxelotor) [prescribing information]. South San Francisco, CA: Global Blood Therapeutics, Inc., November 2019.