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NEWS LETTER OF CLINICAL PHARMACY

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Vision

St.Peter's is committed to generate, disseminate and preserve knowledge and work with pioneers of this knowledge, and to be the most sought after institute globally in the field of pharmaceutical sciences by creating world class pharmacy professionals and researchers.

Mission

To achieve academic excellence with integrity and creating opportunities for leadership and responsibilities through groundbreaking performance in the field of Pharmaceutical Sciences by educating students with pharmaceutical needs of the society and to advance the knowledge through research and to serve the profession and community.

2019 – FDA APPROVED DRUGS LIST (JULY-SEPTEMBER)

Drug Name	Date of Approval	Category	Mechanism of Action	Precautions
Imipenem, Cilatatin	16/07/2019	Antibiotic	It inhibits Pencillin binding proteins and causes bactericidal activity by disruption of bacterial cell wall synthesis.	Stop using this drug if hypersensitivity occurs.
Ferric Maltol	25/07/2019	Fe-Fe supplement	Iron stores in hemoglobin, myoglobin , and enzymes ; transport oxygen Delivers iron for take up across the GI wall and move to transferrin and ferritin.	Don't administer to patients receiving Intravenous Iron infusion. Don't use in patients having inflammatory bowel disease
Pexidartinib	02/08/2019	Anti neoplastic agent	It targets the CSF1/CSF1R pathway. It inhibits the CSF1R signalling pathway, so works by inhibiting tumour cell proliferation and down modulate cells such as macrophages.	Don't use this drug in pregnancy, liver diseases, and kidney diseases.
Tenapanor	12/08/2019	Na-H exchanger 3 inhibitor	By repressing NHE3 on apical surface of the enterocytes , tenapanor lessens ingestion of sodium, bringing about an expansion in water emission into GI lumen which speeds up GI travel and thus results in milder stool consistency	In the event that serious loose bowels happen, suspend dosing and rehydrate.
Pretomanid	14/08/2019	Anti mycobacterial	It increases nitric oxide levels leading to bactericidal activity.	Consult doctor if you have pain or tenderness in upper stomach, dark urine, and nausea.
Upadacitinib	16/08/2019	DMARD	Upadacitinib works by hindering the activity of compounds called Janus kinases. These proteins are engaged with setting up measures that lead to irritation, and impeding their impact acquires aggravation the joints under control.	Don't use this drug in patients having active infections including localised infections. Don't use this drug in breastfeeding or pregnant women.
Lefamulin	19/08/2019	Semi-synthetic pleuromutilin antibiotic	It inhibits protein synthesis by binding to the centre of 50s bacterial ribosome. By this it finally prevents binding of transfer of RNA for peptide transfer.	Inform the doctor if you have Diarrhea, arrhythmias, liver diseases.
Nintedanib	09/09/2019	Small molecule kinase inhibitor	It blocks the autophosphorylation of FGFRs, PDGFRs and VEGFRs.	Don't take in pregnancy, diarrhea conditions.
Oral semaglutide	20/09/2019	Glucagon like peptide1 analogue	It increases secretion of insulin and decreases glucagon secretion when glucose in blood increases. Thus reduces blood glucose.	Don't drink alcohol because it may cause severe low blood sugar.
Canagliflozin	30/09/2019	Na/Glucose Co-transporter 2	It inhibits SGLT2 co transporter and causes low absorption of filtered glucose into body and reduces renal threshold for glucose.	Drink plenty of water in hot weather, Don't take in pregnancy ,tell your doctor if you are having nausea, light headedness.

MONOGRAPH ON PEXIDARTINIB

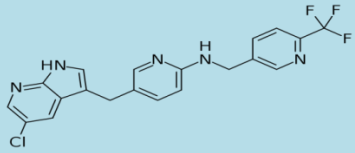
Category: antitumor agent

Indication: used for treating tenosynovial giant cell tumors by inhibiting colony stimulating factor 1 and its receptor.

Chemical formula: C20 H15 ClF3N5

Molecular weight: Average molecular weight: 417.82; **FDA approval:** August 2 2019.

Structure:



Available dosage form: 200mg oral capsule; **Available brands:**Turalio

Indications: It is indicated for the treatment of symptomatic tenosynovial giant cell tumor in adult patients who are associated with severe morbidity or functional limitations.

Mechanism of action: It targets CSF1/CSF1R pathway as a selective CSF1R inhibitor. It stimulates auto inhibited state of CSF1R by interacting with juxtamembrane region of CSF1R and prevents the binding of CSF1 and ATP to the region.

pharmacokinetics:

- **Absorption**: Tmax was 2.5 hrs and time to reach steady state concentration was 7 days.
- **Volume of distribution:** Apparent volume of distribution is 187 L
- **Protein binding**:bound to serum albumin by 99.9% and alpha-1 acid glycoprotein by 89.99%.
- **Metabolism**: It undergoes oxidation mediated by hepatic CYP3A4 and glucuronidation by UGT1A4. CYP1A2 and CYP2C9may play minor role in drug metabolism.
- **Route of elimination:** It is mainly excreted by feces which accounts for 65%, renal elimination accounts for 27%, more than 10% is found as N-glucuronide metabolite.
- **Half life and clearence**: Elimination half life is 26.6 hours; apparent clearance is about 5.1L/h

Pharmacodynamics: It works by suppressing the growth of tenosynovial giant cell tumors. It works by inhibiting the activation and signaling of tumor permissive cytokines and receptor tyrosine kinesis.

Adverse drug reactions: Nausea, vomiting, constipation, itching , changes in hair color**,** lowers the ability to fight infections, Affect fertility in men and womenand Can cause mild rash that is usually not serious

Precautions: It affects the immune system or may worsen any current infections. Avoid contact with people who have infections. The drug may blur the vision so avoid driving, use of machinery. During pregnancy this drug may be used only when needed

Drug interactions: Interacts with rifabutin, rifampin, carbamazepine, and phenytoin. It may decrease the effect of birth control pills, patch, and ring; **Storage:** Store at room temperature away from light and moisture.

Howthismedicationshouldbeused: Take on empty stomach. Take at least 1 hour before or 2 hours after eating. Take antibiotics at least 2hrs before or after pexidartinib

TREATMENT GUIDELINES FOR ASTHAMA

Asthma, a chronic inflammatory airway disease characterized by airway hyper responsiveness, may present with symptoms such as wheezing, shortness of breath, chest tightness, and cough. These symptoms may vary over time and in intensity, making effective management of asthma important. Symptom triggers may include exercise, viral respiratory infections, and environmental factors, such as smoking. Symptoms that are left untreated may lead to exacerbations. An exacerbation is an acute episode in which symptoms worsen drastically and lung function progressively declines. Any occurrence of an exacerbation warrants a discussion regarding the patient's current asthma treatment regimen because of the risks of hospitalization, emergency-care visits, and asthma-related death.

GINA recommends the following asthma-treatment steps:

• Step 1: This step is advised for patients with mild asthma who have symptoms less than twice per month and no risk of exacerbations. As mentioned previously, based on new evidence, the 2019 GINA guidelines no longer recommend SABA use alone to treat asthma.

• Step 2: The preferred controller regimen is as-needed low-dose ICS-formoterol or daily low-dose ICS plus as-needed SABA. The ICS-formoterol regimen avoids the need for daily ICS while providing similar benefits for exercise-induced broncho constriction as daily ICS with as-needed SABA.

• Step 3: Preferred controller treatments include a low-dose ICS–long-acting beta2 agonist (LABA) plus as-needed SABA or low-dose ICS-formoterol for both maintenance and reliever therapy.

• Step 4: The preferred controller treatment is low-dose ICS-formoterol as maintenance and reliever therapy or medium-dose ICS-LABA as maintenance plus as-needed SABA. Note that ICS-formoterol should not be combined with an ICS-LABA containing a different LABA.

• Step 5: Persistent exacerbations or symptom worsening occurs despite adherence and correct inhaler technique. These patients are considered to have severe or difficult-to-treat asthma and should be referred to a pulmonologist.

Changes in the 2019 guidelines

The 2019 guidelines include five notable changes with regard to asthma treatment in adults. The first change is the switch from SABA-only treatment to ICS-containing treatment for as-needed treatment of symptoms in mild asthma. The second change is the use of add-on low-dose azithromycin three times per week for long-term treatment of patients with symptomatic asthma despite moderate-dose or high-dose ICS-LABA treatment; however, potential adverse events should be considered.

The third change is the recommendation for dupilumab, an anti–interleukin-4 receptor alpha monoclonal antibody, as an additional treatment option for patients aged 12 years and older with severe type 2 asthma or OCS-dependent asthma. A trial by Wenzel and colleagues demonstrated that dupilumab increased lung function and reduced severe exacerbations in patients with uncontrolled persistent asthma.

The fourth change is to include high-dose ICS-LABA treatment only in step 5, whereas previously it had been included in step 4 with moderate-dose ICS-LABA; this is because of the recommendation that high-dose ICS should be prescribed for only a few months based on the consideration of associated adverse events. The fifth change is the switch of maintenance OCS from a “preferred” treatment option to “other controller option” in step 5, based on the high risk of adverse outcomes.

Conclusion: Based on new data, the updated 2019 GINA guidelines do not recommend the use of a SABA inhaler alone for the treatment of mild asthma; instead, low-dose ICS-formoterol is recommended for as-needed and maintenance therapy. For patients who present with severe or difficult-to-treat asthma, other options may be considered as add-on treatment to inhaler therapy, including LTRA, tiotropium, biologics, azithromycin, and OCS. To ensure better medication adherence, asthma therapy regimens should be patient-specific, with a stepwise approach taken to find a regimen that controls the patient’s asthma symptoms while keeping the patient on the lowest dose possible, and should also be cost-effective.

ANGELMAN SYNDROME

Angelman condition (AS) is an uncommon hereditary issue. It causes deferred advancement, issues with discourse and equilibrium, scholarly handicap, and some of the time, seizures.

Individuals with AS regularly grin and snickers habitually, and have cheerful, sensitive characters. Formative deferrals, which start between around 6 and a year old enough, are normally the primary indications of Angelman condition. Seizures might start between the ages of 2 and 3 years of age.

Symptoms: Intellectual disability, No speech or minimal speech, Difficulty walking, moving or balancing well, Frequent smiling and laughter, Happy, excitable personality, Trouble going to sleep and staying asleep.

Causes: AS normally brought about by issues with a quality situated on chromosome 15 called the ubiquitin protein ligase E3A (UBE3A) quality.

Typically, just the maternal duplicate of the UBE3A quality is dynamic in the cerebrum. Most instances of AS happen when portion of the maternal duplicate is absent or harmed.

Risk factors

A great many people with AS don't have a family background of the disease. Periodically, Angelman condition might be acquired from a parent. A family background of the infection might build a child's danger of creating AS.

Complications: Feeding hardships, Hyperactivity, Sleep problems, Curvature of the spine (scoliosis),Obesity.

Prevention: In uncommon cases, AS might be passed from an influenced parent to a youngster through blemished qualities. In case you're worried about a family background of AS or on the other hand in the event that you as of now have a youngster with the problem, consider conversing with your doctor or a hereditary instructor for help arranging future pregnancies.

Diagnosis: A combination of genetic tests can reveal the chromosome defects related to AS. These tests may review:

- Parental DNA pattern
- Missing chromosomes
- Gene mutation

Treatment: There's no cure for AS. Depending on child's signs and symptoms, treatment for AS may involve:

- Anti-seizure medication to control seizures
- Physical therapy to help with walking and movement problems
- Communication therapy, which may include sign language and picture communication