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جامعة مصر الدولية

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DRUG INFORMATION CENTER

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Drug Information Newsletter

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Rare Monkeypox Virus Hitting us

Monkeypox is a zoonotic orthopoxvirus that incidentally causes disease in humans similar to smallpox, but with relatively low mortality. The first human confirmed case was in 1970 in the Democratic Republic of Congo. This virus re-appeared again in May 2021, when a family returned to the United Kingdom after traveling to Nigeria. Three family members became infected with the monkey pox virus.[1] Then another case appeared in Texas in the United States followed by another in Maryland. The incubation period of the virus is usually 7–14 days but can range from 5–21 days. It begins with fever, headaches, backache, chills, exhaustion, and swollen lymph nodes. In the first three days after the development of a fever, a rash starts to develop. This rash often starts on the face then spreads to other body parts. These lesions follow the following stages before falling of: Macules, papules, vesicles, pustules, scabs. The illness typically lasts 2-4 weeks. Monkeypox showed to have one death case every 10 cases.[2] The treatment for monkeypox is still a supportive treatment, as the illness is usually mild and most of those who got infected will recover within a few weeks without treatment. Smallpox vaccine, cidofovir, and tecovirimat can be used to control outbreaks of monkeypox.[3]

Stage	Stage Duration	Characteristics
Enanthem		• The first lesions to develop are on the tongue and in the mouth.
Macules	1–2 days	• Following the enanthem, a macular rash appears on the skin, starting on the face and spreading to the arms and legs and then to the hands and feet, including the palms and soles. • The rash typically spreads to all parts of the body within 24 hours becoming most concentrated on the face, arms, and legs (centrifugal distribution).
Papules	1–2 days	• By the third day of rash, lesions have progressed from macular (flat) to papular (raised).
Vesicles	1–2 days	• By the fourth to fifth day, lesions have become vesicular (raised and filled with clear fluid).
Pustules	5–7 days	• By the sixth to seventh day, lesions have become pustular (filled with opaque fluid) – sharply raised, usually round, and firm to the touch (deep seated). • Lesions will develop a depression in the center (umbilication). • The pustules will remain for approximately 5 to 7 days before beginning to crust.
Scabs	7–14 days	• By the end of the second week, pustules have crusted and scabbed over. • Scabs will remain for about a week before beginning to fall off.

References:

1. ***"Home - Books - NCBI." National Center for Biotechnology Information, U.S. National Library of Medicine, https://www.ncbi.nlm.nih.gov/books.***
2. ***"Treatment." Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, 9 June 2022, https://www.cdc.gov/poxvirus/monkeypox/clinicians/treatment.html.***
3. ***"Monkeypox: Background Information." GOV.UK, https://www.gov.uk/guidance/monkeypox#treatment.***

Increased risk of cardiovascular events when administering hydroxychloroquine and Macrolide antibiotics.

An observational study done in 2020 compared the adverse events associated with taking hydroxychloroquine plus azithromycin vs the use of hydroxychloroquine plus amoxicillin. The study showed that there was an increased risk of some cardiovascular events risk of angina or chest pain, heart failure, and cardiovascular mortality compared with the combination of hydroxychloroquine and amoxicillin.. The study also concluded that there were no excess severe adverse events identified when taking hydroxychloroquine alone, but long term use (more than 30 days) showed an association with increased cardiovascular mortality. The study suggested that the severe adverse effect may be due to the by cumulative effects of hydroxychloroquine and azithromycin on the QT interval, potentiating arrhythmias and cardiac death.

References:

Risk of Hydroxychloroquine Alone and in Combination with Azithromycin ... https://www.thelancet.com/journals/lanrhe/article/PIIS2665-9913(20)30276-9/fulltext.

The adverse events of taking ceftriaxone and ketorolac (Case report)

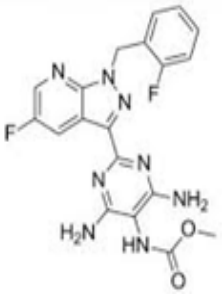
A case report was documented in the pharmaceutical vigilance center in Alexandria about a ten years old girl that was prescribed ceftriaxone and Ketorolac for the treatment of tonsillitis. The girl suffered from severe allergic reaction due to the administration of the ceftriaxone with no sensitivity test prior to the injection. Morever, the administration of ketorolac for the treatment of mild pain is not recommended as it is indicated for the treatment of moderately severe acute pain that requires analgesia at the opioid level. The use of ketolac is not recommended for children younger than 16 years.

The pharmaceutical vigilance center recommended against use of ceftriaxone without testing of sensitivity and also against use of any Diluents containing calcium as a precipitate can form. It recommends that if anaphylaxis is suspected, then assess airway, breathing, circulation, and mentation as rapidly as possible, as cardiac arrest and death can occur within several minutes.

Emerging Therapy Targeting Cardiopulmonary Disease

The American Heart Association (AHA) recommended the use of soluble Guanylate cyclase stimulator "Vericiguat" in the management of heart failure. It was listed as a treatment option in the AHA guidelines 2022.[1] This class of medications is used for the treatment of heart failure with reduced ejection fraction (HFrEF). It works by restoring the cyclic guanosine monophosphate (cGMP) under low nitric oxide conditions and oxidative stress. The increased production of cGMP leads to several benefits like vasodilation, improvement in endothelial function, as well as the decrease in fibrosis and remodeling of the heart. Vericiguat when compared to other nitro-vasodilators doesn't induce tolerance on long-term administration.The dose of vericiguat, according to phase III of the Vericiguat Global Study in Subjects with Heart Failure with Reduced Ejection Fraction (VICTORIA), was 2.5 mg to 10 mg depending on patient response. While Phase II of VITALITY Heart Failure with Preserved Ejection Fraction study reported that the dose could be titrated up to 15 mg.

The adverse effects listed were headache and postural dizziness which could be due to vasodilation effect of Vericiguat. Diarrhea, nausea, and abdominal discomfort have been also reported assumingly due to the smooth muscle relaxation action of the medication. Moreover, symptomatic hypotension, orthostatic hypotension, anemia is some of the known side effects of vericiguat. It was recommended to avoid using this drug in patients with severe anemia because of concerns of a decrease in hemoglobin level.[2] On the contrary, the use of vericiguat with patients having a mild increase in serum creatinine or potassium levels, showed no significant difference in worsening renal function between vericiguat or placebo used in the study.



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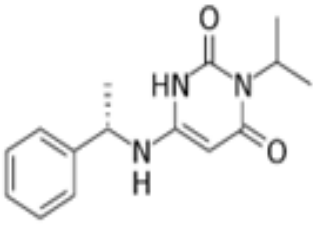
1. *Heidenreich, Paul A., et al. "2022 AHA/ACC/HFSA Guideline for the Management of Heart Failure: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines." Circulation, 1 Apr. 2022, https://www.ahajournals.org/doi/10.1161/CIR.0000000000001063#d1e5665.*
2. *Stasch, Johannes-Peter, et al. "Soluble Guanylate Cyclase as an Emerging Therapeutic Target in Cardiopulmonary Disease." Circulation, U.S. National Library of Medicine, 24 May 2011, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3103045/.*

Mavacamten for Treatment of Symptomatic Obstructive Hypertrophic Cardiomyopathy

FDA approved the use of Mavacamten (Camzyos ™) for the treatment of obstructive hypertrophic cardiomyopathy (HCM) on the 24th of April,2022. HCM is a significant cause of sudden cardiac death in young people including well-trained athletes, and affects men and women equally across all races. It results from asymmetric septal hypertrophy causing outflow obstruction of the left ventricle. Unfortunately, this disease causes a challenge for the health care providers to diagnose and most often it is not diagnosed until a serious cardiac event takes place. HCM results from a mutation in genes that encode for one of the nine sarcomere proteins, such as B-myosin heavy chain, troponin, actin. The mutations cause structural abnormalities in myofibril and myocytes that have the potential to lead to abnormal force generation and conduction abnormalities. Camzyos™ (mavacamten) is the first and only cardiac myosin inhibitor approved by the U.S. Food and Drug Administration (FDA) indicated for the treatment of adults with symptomatic New York Heart Association (NYHA) class II-III

CAMZYOS™ (mavacamten) 2.5, 5, 10, 15mg capsules



obstructive hypertrophic cardiomyopathy (HCM) to improve functional capacity and symptoms in adult patients. Camzyos™ is an allosteric and reversible inhibitor selective for cardiac myosin. It modulates the number of myosin heads that cross-bridge to actin during systole or diastole. The recommended dose is 5 mg once daily without regard to food; Allowable subsequent doses with titration are 2.5, 5, 10, or 15 mg once daily. The most common side effect is dizziness and fainting. The patient should tell the physician all his medication as there is a serious risk of developing heart failure when taking Camzyos™ with other medications especially if the patient is taking omeprazole, esomeprazole, cimetidine.

References

Center for Drug Evaluation and Research. "FDA Approves New Drug to Improve Heart Function." U.S. Food and Drug Administration, FDA, https://www.fda.gov/drugs/news-events-human-drugs/fda-approves-new-drug-improve-heart-function-adults-rare-heart-condition.

Hypertrophic Obstructive Cardiomyopathy - Statpearls - NCBI Bookshelf. https://www.ncbi.nlm.nih.gov/books/NBK430820/.

"Camzyos: Uses, Dosage, Side Effects & Warnings." Drugs.com, https://www.drugs.com/camzyos.html.

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