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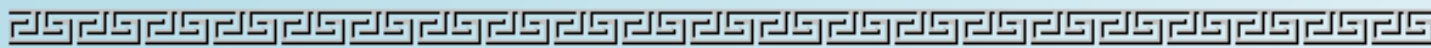


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Editorial Board

Prof. Mahrous Osman Ahmed,
On behalf Dean of Faculty of Pharmacy
Prof. Tahani Hassan Elfaham, Director
of DIC

Pharmacists:

Wafaa Abd Elmoneim
Hanan Mohamed Gaber
Tel. 088/2080388 & 088/2411556

E-mail:

clinipharm_assiut@yahoo.com

Website: www.clinipharm.aun.edu.eg

FBPage:facebook.com/DIC.pharmacy/

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Zika virus

Introduction

Zika virus is an emerging mosquito-borne virus that was first identified in Uganda in 1947 in Rhesus monkeys through a monitoring network of sylvatic yellow fever. It was subsequently identified in humans in 1952 in Uganda and the United Republic of Tanzania. Outbreaks of Zika virus disease have been recorded in Africa, the Americas, Asia and the Pacific.

Genre: Flavivirus

Vector: *Aedes* mosquitoes (which usually bite during the morning and late afternoon/evening hours)

Reservoir: Unknown



Zika virus disease outbreaks were reported for the first time from the Pacific in 2007 and 2013 (Yap and French Polynesia, respectively), and in 2015 from the Americas (Brazil and Colombia) and Africa (Cabo Verde). In addition, more than 13 countries in the Americas have reported sporadic Zika virus infections indicating rapid geographic expansion of Zika virus.

Signs and Symptoms

The incubation period (the time from exposure to symptoms) of Zika virus disease is not clear, but is likely to be a few days. The symptoms are similar to other arbovirus infections such as dengue, and include fever, skin rashes, conjunctivitis, muscle and joint pain, malaise, and headache. These symptoms are usually mild and last for 2-7 days.

Potential complications of Zika virus disease

During large outbreaks in French Polynesia (an overseas collectivity of the French Republic) and Brazil in 2013 and 2015 respectively, national health authorities reported potential neurological and auto-immune complications of Zika virus disease. Recently in Brazil, local health authorities have observed an increase in Guillain-Barré syndrome which coincided with Zika virus infections in the general public, as well as Pregnant women who become infected with Zika virus may be at risk for not only having a child with microcephaly, but also having a fetus with other serious health issues, including problems with the nervous system and even fetal death. A study provided some of the strongest evidence that Zika virus causes microcephaly found that nearly one-third of women who had Zika infections during their pregnancy had an ultrasound that showed fetal abnormalities. These abnormalities included problems with growth, such as microcephaly, problems with the placenta and lesions in the brain or spine.

Transmission

Zika virus is transmitted to people through the bite of an infected mosquito from the *Aedes* genus, mainly *Aedes aegypti* in tropical regions. This is the same mosquito that transmits dengue, chikungunya and yellow fever. However, sexual transmission of Zika virus has been described in 2 cases, and the presence of the Zika virus in semen in 1 additional case was recorded.

Diagnosis

Zika virus diagnosis can only be confirmed by laboratory testing for the presence of Zika virus RNA in the blood or other body fluids, such as urine or saliva.

Prevention

Mosquitoes and their breeding sites pose a significant risk factor for Zika virus infection. Prevention and control relies on reducing mosquitoes through source reduction (removal and modification of breeding sites) and reducing contact between mosquitoes and people.

This can be done by using insect repellent regularly; wearing clothes (preferably light-coloured) that cover as much of the body as possible; using physical barriers such as window screens, closed doors and windows; and if needed, additional personal protection, such as sleeping under mosquito nets during the day. It is extremely important to empty, clean or cover containers regularly that can store water, such as buckets, drums, pots etc. Other mosquito breeding sites should be cleaned or removed including flower pots, used tyres and roof gutters. Communities must support the efforts of the local government to reduce the density of mosquitoes in their locality.

Repellents should contain DEET (N, N-diethyl-3-methylbenzamide), IR3535 (3-[N-acetyl-N-butyl]-aminopropionic acid ethyl ester) or icaridin (1-piperidinecarboxylic acid, 2-(2-hydroxyethyl)-1-methylpropylester). Product label instructions should be strictly followed. Special attention and help should be given to those who may not be able to protect themselves adequately, such as young children, the sick or elderly.

During outbreaks, health authorities may advise that spraying of insecticides be carried out. Insecticides recommended by the WHO Pesticide Evaluation Scheme may also be used as larvicides to treat relatively large water containers.

Travellers should take the basic precautions described above to protect themselves from mosquito bites.

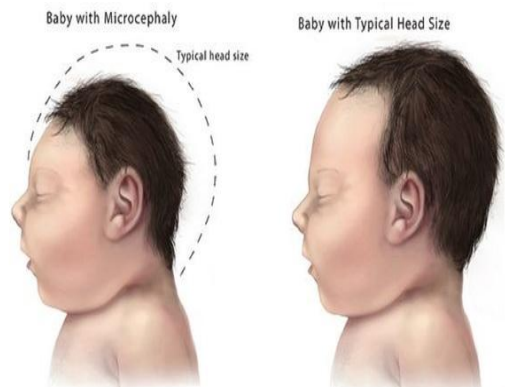
Treatment

Zika virus disease is usually relatively mild and requires no specific treatment. People sick with Zika virus should get plenty of rest, drink enough fluids, and treat pain and fever with common medicines. If symptoms worsen, they should seek medical care and advice. There is currently no vaccine available.

WHO response

WHO is supporting countries to control Zika virus disease through:

- Define and prioritize research into Zika virus disease by convening experts and partners.
- Enhance surveillance of Zika virus and potential complications.
- Strengthen capacity in risk communication to help countries meet their commitments under the International Health Regulations.
- Provide training on clinical management, diagnosis and vector control including through a number of WHO Collaborating Centres.



- Strengthen the capacity of laboratories to detect the virus.
- Support health authorities to implement vector control strategies aimed at reducing Aedes mosquito populations such as providing larvicide to treat standing water sites that cannot be treated in other ways, such as cleaning, emptying, and covering them.
- Prepare recommendations for clinical care and follow-up of people with Zika virus, in collaboration with experts and other health agencies.

References: <http://www.who.int/mediacentre/factsheets/zika/en/>

Terminology

Wry-Neck

A condition in which the head is twisted to one side. It may be caused by the contraction of a scar, such as that resulting from a burn or by paralysis of some of the muscles; as a result of injury at birth; or trauma to the area later in life. Treatment is by an orthopaedic collar, heat or ultrasound, or physiotherapy. Sometimes a local injection of botulism toxin will produce temporary relief. Rarely, surgery is necessary.



References <http://www.healthylifelive.org/wry-neck/>

Complementary Medicine

Licorice

Species (Family): Glycyrrhiza glabra L. Fabaceae

Part Used: Dried root

Constituents:

Oleanane triterpenes (glycyrrhizin, glycyrrhetic acid, and phytosterols); flavanones; isoflavonoids; chalcones; polysaccharides (mainly glucans); volatile oil (containing fenchone, linalool, furfuryl alcohol, benzaldehyde); miscellaneous: starch, sugars.

Actions:

Expectorant, demulcent, anti-inflammatory, antihepatotoxic, antispasmodic, mild laxative

Indications:

Licorice is a traditional herbal remedy with an ancient history and worldwide usage. Modern research has demonstrated that the herb has effects upon the endocrine system and the liver, among other organs. The triterpenes of Glycyrrhiza are metabolized in the body to molecules with a structure similar to that of the adrenal cortex hormones. This may be the basis of the herb's anti-inflammatory action. As an antihepatotoxic, licorice can be effective in the treatment of chronic hepatitis and cirrhosis, for which it is widely used in Japan. Much of the liver-oriented research has focused upon the triterpene glycyrrhizin. Studies show that this constituent inhibits hepatocyte injury caused by carbon tetrachloride, benzene hexachloride, and polychlorinated biphenyl (PCB).



It inhibits the growth of several DNA and RNA viruses and irreversibly inactivates herpes simplex virus particles.

Licorice has a wide range of applications for bronchial problems, including catarrh, bronchitis, and coughs in general. The herb is used as a treatment for peptic ulcers, and is similarly used in herbal medicine for gastritis and ulcers. It may also be effective in relieving abdominal colic.

Liquorice root is emollient, demulcent and nutritive. It acts upon mucous surfaces, lessening irritation and is consequently useful in coughs, catarrhs, irritation of the urinary organs and pain of the intestines in diarrhea.



Safety Considerations:

Side effects are minimal if daily intake is less than 10 mg of glycyrrhizin. Chronic use may cause hypokalemia, headache, spastic numbness, hyper-tension, weak limbs, dizziness, and edema. Glycyrrhizin and glycyrrhetic acid have antidiuretic, mineralocorticoid-type actions, but these constituents are removed from most commercial extracts. The resulting extracts are denoted as "deglycyrrhizinated."

Prolonged use of Licorice in conjunction with thiazide and loop diuretics and cardiac glycosides is contraindicated, and licorice should not be administered in combination with spironolactone or amiloride. This herb is not recommended for patients taking cardiac glycosides, hypotensive agents, corticoids, diuretic drugs, or monoamine oxidase inhibitors.

Preparations and Dosage:

Tincture dosage is 1 to 3 ml three times a day (1:5 in 40%). To make a decoction, put 1/2 to 1 teaspoon of root in 1 cup of water, bring to a boil, and simmer for 10 to 15 minutes. This should be drunk three times a day.

Commission E recommends an average daily dosage of 5 to 15 g root, equivalent to 200 to 600 mg of glycyrrhizin. Dosage according to the BHP is 1 to 5 g (by infusion or decoction) or 2 to 5 ml liquid extract three times a day.

Source: Hoffmann D., 2003. The Science and Practice of Herbal Medicine India P.554

Test Your Knowledge

1. Concomitant use of Tegretol should be avoided with:

- A) Ranitidine
- B) Gabapentin
- C) Clarithromycin
- D) All of the above

2. Arnica:

- A) Is traditionally used for sprains and bruises
- B) Contains terpenoids
- C) Is not suitable for internal use
- D) All of the above



3. In patients receiving long-term warfarin who undergo dental extraction:
- A) An INR assessment should be carried out 72 hours before the procedure
 - B) Warfarin may be continued in patients with an INR below 4.0 without dose adjustments
 - C) Metronidazole therapy may enhance effect of warfarin
 - D) All of the above

Ask the Expert

Q: I have been diagnosed with Stage IV COPD, what does Stage IV indicate?

Chronic obstructive pulmonary disease (COPD), a progressive condition that obstructs air flow through the airways in and out of the lungs, has been categorized by the GOLD (Global Obstructive Lung Disease initiative) into four groups, or stages, according to the severity of the condition Stage 0, Stage I, Stage II, and Stage III. These categories are based on an individual's lung function. In this system Stage III corresponds to severe COPD, the most advanced disease. This group includes individuals with severe airflow limitation. Another proposed staging system for COPD includes a Stage IV, which represents very severe COPD. People in this group often have evidence of respiratory failure (either low blood oxygen or high carbon dioxide levels) or clinical signs of right heart failure (such as leg swelling), that characteristically accompany respiratory failure. At this stage, quality of life is appreciably impaired. Exacerbations of the condition may occur three to four times per year and may be life-threatening.



Real Enquiries

At the "Drug Information Center", we respond to enquiries from the professional health team as well as from others. Here's one of the enquiries received at the center!

Enquiry received from: Ph. Jaklin Gamil, Womens' Health Hospital.Assiut,Uni.

Enquiry: What is the dose of Teicoplanin in hemodialysis patient?

Summary of Answer:

Dose adjustment is not required until the fourth day of treatment, at this time dosing should be adjusted to maintain a serum trough concentration of at least 10 mg/L.

After the fourth day of treatment:

- In mild and moderate renal insufficiency (creatinine clearance 30-80 mL/min): maintenance dose should be halved, either by administering the dose every two days or by administering half of this dose once a day.

- In severe renal insufficiency (creatinine clearance less than 30 mL/min) and in haemodialysed patients: dose should be one-third the usual dose, either by administering the initial unit dose every third day or by administering one-third of this dose once a day.

FDA News

FDA approves Briviact to treat partial onset seizures

February 19, 2016

The U.S. Food and Drug Administration yesterday approved Briviact (brivaracetam) as an add-on treatment to other medications to treat partial onset seizures in patients aged 16 years and older with epilepsy. Epilepsy is a brain disorder that causes people to have recurring seizures. A seizure is an episode, usually of relatively short duration, of abnormal brain activity. Seizures can cause a variety of symptoms, including uncontrolled movements or spasms, abnormal thinking and behavior, and abnormal sensations. Muscle spasms can be violent, and loss of consciousness can occur. Seizures occur when clusters of nerve cells (neurons) in the brain undergo uncontrolled activation. A partial onset seizure begins in a limited area of the brain.



Epilepsy has many possible causes including, among others, stroke, infection, tumors, traumatic brain injury, and abnormal brain development. In many cases, the specific cause is unknown. Epilepsy is one of the most common conditions affecting the brain. Approximately 5.1 million people in the United States have a history of epilepsy and approximately 2.9 million people in the United States have active epilepsy.

Briviact's effectiveness was studied in three clinical trials involving 1,550 participants. Briviact, taken along with other medications, was shown to be effective in reducing the frequency of seizures.

The most common side effects reported by people taking Briviact in clinical trials included drowsiness, dizziness, fatigue, nausea and vomiting.

Briviact must be dispensed with a medication guide for patients, which provides important information about the medication's use and risks. As is true for all drugs that treat epilepsy, the most serious risks include thoughts about suicide, attempts to commit suicide, feelings of agitation, new or worsening depression, aggression, and panic attacks. Rarely, patients may exhibit an allergic reaction associated with swelling of the lips, eyelids, or tongue with or without difficulty breathing.

Briviact is marketed by UCB, Inc. of Smyrna, Georgia.

Source: <http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm486827.htm>

Kitchen Remedy to Ward Off a Cold

- 1 ounce fresh ginger, sliced
- 1 stick of cinnamon, broken
- 1 teaspoon coriander seeds
- 3 cloves
- 1 slice of lemon

Decoct ingredients for 15 minutes in 1 pint of water; strain. Drink a cupful hot every 2 hours. Sweeten with organic honey to taste.



Answers:

1. (C) Tegretol consists of carbamazepine, which is an anti-epileptic drug. There is a clinically significant drug interaction between carbamazepine and clarithromycin (macrolide antibacterial agent) resulting in higher plasma concentrations of carbamazepine.
2. (D) Arnica has been used for medicinal purposes. It can be applied topically as a cream, ointment, liniment, salve or tincture, to soothe muscle aches, reduce inflammation and heal wounds. It is often used for injuries such as sprains and bruises. Arnica is primarily restricted to topical (external) use because it can cause serious side-effects when ingested. Arnica consists of a number of flavonoid glycosides and terpenoids.
3. (D) Patients receiving oral anticoagulants such as warfarin may be liable to excessive bleeding after extraction of teeth or other dental surgery. For a patient who is on long-term warfarin, the INR should be assessed 72 hours before the dental procedure. This timeframe is recommended since it allows for sufficient time for dose modification if necessary. Patients undergoing minor dental procedures and dental extractions who have an INR below 4.0 do not require any dose adjustments. Drugs that have potentially serious interactions with warfarin include metronidazole, which is a commonly used anti-infective agent in dental practice because of its antiprotozoal activity. Metronidazole may enhance the effect of warfarin.