كلية الصيدلة

DRUG INFORMATION CENTER BULLETIN
FACULTY OF PHARMACY
ASSIUT UNIVERSITY

جامعة أسيوط

Ass. Uni. D.I. Bull., Vol. 11, No. 1, March 2015

In This Issue…

Tel. **088/2357399 & 088/2411556**
E-mail: **clinipharm_assiut@yahoo.com**
Website: **www.clinpharm.aun.edu.eg**
FB Page: **facebook.com/DIC.Assiut.Univ**

رقم الايداع: 12632 لسنة 2005

This Bulletin is a free quarterly periodical issued by the Drug Information Center (DIC) located at Faculty of Pharmacy-Assiut University

Abdominal Migraine in Children

What is abdominal migraine?

Like adults, children can develop migraines. This can be the same type of condition seen in adults, which is typically occurs with a headache, and is sometimes preceded by an aura. Nausea, vomiting, and photophobia (decreased tolerance to light) can occur. Children also develop some unusual and atypical variations of migraine, not associated with headaches in particular, that are not usually observed in adults. Abdominal migraine is one of these variants.Abdominal migraine is a condition thought to be related to migraine that is characterized by pain in the abdomen. It is often precipitated by the usual triggers of classic migraine. The pain can be severe, and nausea and vomiting can occur. Abdominal migraine is rare in adults, but it has been estimated that up to 2% of all children may develop abdominal migraines. Children who have the condition usually go on to develop migraine headaches as adults. Girls are affected more frequently than boys. Abdominal migraine typically occurs for the first time between the ages of 2 and 10.

Abdominal migraine in children facts

- Abdominal migraine is characterized by pain in the center of the abdomen that may be severe.
- Symptoms can last for one hour or up to a several days.
- Nausea and vomiting may be associated with the pain.
- Sleep typically brings relief from abdominal migraine. Medications used to treat classic migraine can also be effective, although there is no single treatment that is known to be effective in all patients.
- Most children with abdominal migraine have a family history of migraine, and most go on to develop migraine as adults.
- The exact cause of abdominal migraine is poorly understood. It may be related to both neurologic and endocrinologic (hormone) factors.
- The diagnosis of abdominal migraine can be difficult, and depends upon ruling out other potential causes for the abdominal pain and symptoms. There is no one diagnostic test that confirms the diagnosis.

What causes abdominal migraine?

The cause of abdominal migraine is poorly understood. Abdominal migraine is thought by some researchers to be related to neurologic or endocrinologic changes and may be caused by alterations in the levels of serotonin and histamine in the body. Genetic factors may also be involved as the condition is more common in children who have a family history of migraine. About 60% of children with the condition have a positive family history for migraine.Triggers for abdominal migraine have been described, similar to triggers for classic migraine.These include chocolate or nitrite-containing foods, stress, and anxiety.

What are the symptoms of abdominal migraine?

As mentioned, abdominal migraine causes pain in the abdomen that can be severe and debilitating. It is typically located in the middle portion of the belly, often around the umbilicus. Cramping, nausea, and vomiting can accompany the pain. Pallor (paleness)

of the skin is often observed. There may not be associated headache. The symptoms are usually relieved by sleep and can last anywhere from one hour to several days.

How is abdominal migraine diagnosed?

Because of the frequent absence of headache, the condition can be difficult to diagnose, especially during the first episode. There is no specific test that can establish the diagnosis of abdominal migraine, so the diagnosis is based on exclusion of other conditions. Laboratory tests and imaging studies are usually directed to rule out other conditions that could be responsible for the symptoms. Electroencephalography (EEG) is sometimes done to rule out a seizure disorder as the cause of the symptoms.

Key lifestyle tips for children

- Drink at least two litres of water a day
- Eat regularly and healthily and keep regular sleep patterns
- Make time for rest and relaxation
- Get some exercise (with enough 'fuel' (food) to support this) and fresh air each day
- Don't spend longer than 45 minutes watching TV, on the computer or on video games without a break (and not longer than 3 hours a day)

These simple things, along with avoiding any known 'triggers' can make a huge difference.

What is the treatment for abdominal migraine?

The treatment of abdominal migraine has two components to reduce symptoms of an acute attack and to prevent or lessen the severity of future episodes. Research to date has not provided sufficient data to firmly establish the role of any particular medication in either treating symptoms or preventing future episodes of abdominal migraine. Still, many patients respond to anti-migraine medications and other medications.

Some young migraineurs can also benefit from complementary therapies, such as acupuncture or homeopathy. 90% of children with migraine suffer from nausea, and children may benefit from using acupressure wristbands, such as Sea-Bands, for drug-free nausea relief.

Medications to treat abdominal migraine

- ***Simple analgesics*** such as acetaminophen (10–15 mg/kg/dose) and ibuprofen (10 mg/kg/dose) for children under 12 years of age are recommended as first-line early in the attack.Ibuprofen is likely to be more effective. Despite guideline consensus, there is little evidence for their efficacy.
- ***Sumatriptan*** can be given orally for those aged 6 years and older, by subcutaneous injection for those aged 10 years and older, and intranasally for those aged 12 years and older.
- **Zolmitriptan** can be given orally or intranasally to those aged 12 years and older.
- Although none of the selective serotonin receptor agonists or triptans have been approved by the Food and Drug Administration for use with children and adolescents, multiple studies have demonstrated their safety for children's use (Major et al., 2003). Thus far, only sumatriptan in the nasal spray form, 5 and 20 mg, has demonstrated efficacy in adolescents (Ahonen et al., Lewis et al., 2004.)

What is the prognosis for abdominal migraine?

The prognosis for abdominal migraine is good; most children eventually stop having the attacks of abdominal pain. However, most children (about 70% in one study of 54 children) who have abdominal migraine go on to develop migraines in adulthood.

Can Abdominal Migraines Be Prevented?

With appropriate education, children and adults with abdominal migraine may be able to figure out their personal triggers. For example, sometimes food such as chocolate or Chinese food that contains monosodium glutamate (MSG) might increase the chance of abdominal migraines. Avoiding these foods may be useful for some. Many people, though, have no food triggers for abdominal migraines.

Self-managing stress, along with healthy lifestyle habits, may play a role in reducing the risk of abdominal migraines. Children and adults who get abdominal migraines may want to keep a diary of the times that abdominal symptoms occur. They should also consult with their doctors about the best course of action for treatment and prevention.

References: *1) http://www.rxlist.com/abdominal_migraines_in_children_and_adults/page4.htm*
2) http://www.webmd.com/migraines-headaches/abdominal-migraines-children-adults?page=2
3) www.nhs.uk/.../migraine%20action/.../migraineinchildrenandyoungpeopl.
4) http://www.medscape.com/viewarticle/731972_10

Terminology

Paragonimiasis

A tropical disease found mainly in the Far East. It is caused by infections of the lungs by a parasitic fluke called Paragonimus westermani. The infection is acquired by eating insufficiently cooked shellfish. The affected person has symptoms similar to those of chronic bronchitis. Treatment is with the drugs chloroquine and bithionol.

Source: *Marcovitch H. 2005. Black's Medical Dictionary. 41th ed. London: A&C Black Publishers Limited. p 533*

Complementary Medicine

Gentian

Species (Family):Gentiana lutea L. (Gentianaceae)
Synonym(s): Bitterwort, Bitter Root, Gentiana,Yellow Gentian
Part(s) Used: Rhizome, root
Constituents:
Alkaloids Pyridine-type. Gentianine 0.6–0.8%, gentialutine.
Bitters gentiamarin and gentiopicrin) 2%, amarogentin (0.01–0.04%) and swertiamarine ,Gentianose,
Xanthones: Gentisein, gentisin (gentianin), isogentisin and 1,3,7-trimethoxyxanthone.

Food Use

Gentian preparations are listed by the Council of Europe as a source of food flavouring.

Herbal Use

Gentian is stated to possess bitter, gastric stimulant, sialogogue,and cholagogue properties. Traditionally, it has been used for anorexia, atonic dyspepsia,gastrointestinal atony, and specifically for dyspepsia with anorexia. The German Commission E approved use for digestive disorders such as loss of appetite,
fullness and flatulence .Gentian is used in combination with angelica root and caraway fruit or with ginger and wormwood for loss of appetite and peptic discomfort.

Dosage

Dosages for oral administration (adults) for traditional uses recommended in standard herbal reference texts are given below.
Dried rhizome/root 0.6–2 g as an infusion or decoction three times daily.
Tincture: 1–4mL (1: 5 in 45% alcohol) three times daily.

Pharmacological Actions

Root extracts have antifungal activity, and are reported to stimulate phagocytic activity of human lymphocytes, indicating immunostimulant activity.Choleretic properties have been documented for gentian, gentianine has anti-inflammatory activity .The bitter principles stimulate secretion of gastric juices and bile, thus aiding appetite and digestion.

Side-effects, Toxicity

Extracts of gentian are considered to be non-toxic, and are generally well-tolerated, although clinical safety and toxicity data for gentian are limited and further investigation of these aspects is required.

Contra-indications, Warnings

Gentian is stated to be contra-indicated in individuals with high blood pressure although no rationale is given for this statement, and in individuals with hyperacidity, gastric or duodenal ulcers.

Pregnancy and lactation Gentian is reputed to affect the menstrual cycle and it has been stated that gentian should not be used in pregnancy. In view of this and the documented mutagenic activity, gentian is best avoided in pregnancy and lactation.

Source: Barnes. J., Anderson L. A., Phillipson J.D.2007. Herbal Medicines,3rd ed. Pharmaceutical Press p.290

Test Your Knowledge

1. Lomotil should NOT be given to patients taking oral clindamycin because

(A) the antimicrobial action of clindamycin will be impaired
(B) aplastic anemia may be more likely to occur
(C) an insoluble complex will be formed
(D) the rate of hydrolytic destruction of clindamycin in the GI tract will increase
(E) toxic effects of clindamycin may be enhanced

2. A patient who has recently suffered a myocardial infarction (MI) will most likely have elevated serum levels of:

(A) catechol-O-methyltransferase (B) amylase
(C) acid phosphatase (D) creatine kinase (CK)
(E) alkaline phosphatase

3. Peripheral veins are seldom used for the administration of total parenteral nutrition (TPN) fluids because

(A) TPN fluids tend to infiltrate surrounding tissue
(B) the blood flow in peripheral vessels is not great enough to protect the peripheral vessels from irritation
(C) large-bore needles must be used
(D) the hypotonic solution causes local hemolysis
(E) the vessels are easily occluded

4. A major advantage of celecoxib over most other NSAIDs is that it
(A) has a longer half-life than most
(B) can safely be used in patients who are allergic to aspirin
(C) decreases the production of gastric mucus
(D) causes fewer adverse GI effects
(E) is metabolized to a corticosteroid in the body

Ask the Expert

What are plant sterols/stanols and how do they affect blood lipid levels?

Sterols represent a group of compounds that are an essential constituent of cell membranes in animals and plants. Cholesterol is the sterol of mammalian cells, whereas multiple sterols, or phytosterols, are produced by plants. Plant sterols are very poorly absorbed by the human intestine. The specific plant sterols that are currently incorporated into foods intended to lower blood cholesterol levels are extracted from soybean oil or tall (pine tree) oil. The plant sterols currently incorporated into foods are esterified into unsaturated fatty acids (creating sterol esters) to increase lipid solubility, thus allowing maximal incorporation into a limited amount of fat. Some plant sterols currently available are saturated, to form the stanol derivatives sitostanol and campestanol, which after esterification form stanol esters.Sterol balance studies have suggested that decreased blood cholesterol levels are attributable, at least in part, to an inhibition of cholesterol absorption.This inhibition has been ascribed to a number of mechanisms, including partitioning in the micellar phase of the intestinal lumen, presence in the unstirred water layer or other mucosa barriers that may limit transmembrane transport and alteration in rates of cholesterol esterification in the intestinal wall. Generally, the inclusion of 2 g/day of plant stanols/sterols from commercially available enriched products would be expected to reduce LDL cholesterol by 6–15%. Sterols and stanols are ubiquitous in the plant world. They are most effective when taken with food and are produced commercially to add to food.They are usually sold in the form of margarine but can occur in other forms like yoghurt. Rich natural sources include rice bran, avocado oil, original wheat germ and extra virgin olive oil.

Source:*1)K. Nikolaos,D.Charilaos,K.Meropi ,M. Evangelia,A. Kalliopi,* 2010,*Clinical Nutritionin Practice,1st ed.* A John Wiley & Sons, Ltd., Publication p.*85*
2)http://www.patient.co.uk/doctor/cholesterol-lowering-sterols-and-stanols.

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: Prof.Omayma Abdel-Rahman Assiut Uni. hospital.

Enquiry: Can Mycophenolate mofetil tablets dispersed with juice for children?

***Summary of* Answer:**

Mycophenolate mofetil (Immunosuppressive Agents) is a prodrug that is hydrolyzed in vivo to mycophenolic acid, the pharmacologically active metabolite. Mycophenolate sodium delayed-release tablets release the active moiety, mycophenolic acid, in the small intestine.So do not crush the tablets and do not open or crush the capsules. Tablets should be swallowed whole to maintain integrity of enteric coating.so this tablet should not be dispersed with any liquid.

Source: *McEvoy G.K (2011) .AHFS Drug Information Essentials. Bethesda: American Society of Health System pharmacists Inc*

FDA News

FDA approves Lenvima for a type of thyroid cancer

February 13, 2015- The U.S. Food and Drug Administration granted approval to Lenvima (lenvatinib) to treat patients with progressive, differentiated thyroid cancer (DTC) whose disease progressed despite receiving radioactive iodine therapy (radioactive iodine refractory disease).

The most common type of thyroid cancer, DTC is a cancerous growth of the thyroid gland which is located in the neck and helps regulate the body's metabolism. The National Cancer Institute estimates that 62,980 Americans were diagnosed with thyroid cancer and 1,890 died from the disease in 2014. Lenvima is a kinase inhibitor, which works by blocking certain proteins from helping cancer cells grow and divide.

This approval gives patients and healthcare professionals a new therapy to help slow the progression of DTC." Lenvima was reviewed under the FDA's priority review program, which provides for an expedited review of drugs that, if approved, would provide significant improvement in safety or effectiveness in the treatment of a serious condition. The drug also received orphan product designation because it is intended to treat a rare disease.

The most common side effects of Lenvima were high blood pressure (hypertension), fatigue, diarrhea, joint and muscle pain (arthralgia/myalgia), decreased appetite, decreased weight, nausea, inflammation of the lining of the mouth (stomatitis), headache, vomiting, excess protein in the urine (proteinuria), swelling and pain in the palms, hands and/or the soles of the feet (palmar-plantar erythrodysesthesia syndrome), abdominal pain and changes in voice volume or quality (dysphonia). Lenvima may cause serious side effects, including cardiac failure, blood clot formation (arterial

thromboembolic events), liver damage (hepatotoxicity), kidney damage (renal failure and impairment), an opening in the wall of the stomach or intestines (gastrointestinal perforation) or an abnormal connection between two parts of the stomach or intestines (fistula formation), changes in the heart's electrical activity (QT Interval Prolongation), low levels of calcium in the blood (hypocalcemia), the simultaneous occurrence of headache, confusion, seizures and visual changes (Reversible Posterior Leukoencephalopathy Syndrome), serious bleeding (hemorrhage), risks to an unborn child if a patient becomes pregnant during treatment, and impairing suppression of the production of thyroid-stimulating hormone.

Lenvima is marketed by Woodcliff Lake, New Jersey-based Eisai Inc.

Source:*http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm434288.htm*

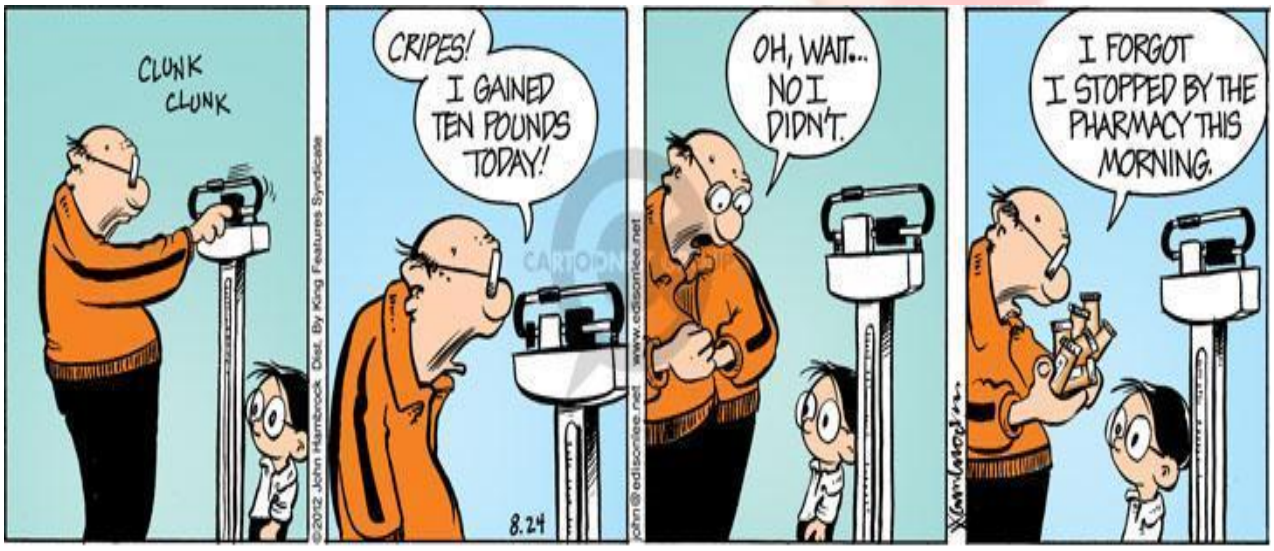
Answers:

1.(E) The development of inflammatory conditions of the colon has been associated with antibiotic therapy. Although many antibiotics have been implicated,there have been a disproportionate number of reports specifically involving clindamycin and lincomycin. Colitis has been associated with both oral and parenteral administration of these drugs, and no clear predisposing conditions have been identified.Because antiperistaltic drugs (eg, diphenoxalate) used to treat the resulting diarrhea seem to prolong the disease, they should not be used.

2.(D) Creatine kinase (CK) is an enzyme that is found primarily in muscle tissue. It is released into the blood in response to muscle injury. Serum concentrations of CK are elevated in disorders involving muscle damage such as myocardial infarction, muscular dystrophy,muscle trauma, and muscular inflammation**.**

3.(B) Peripheral veins are seldom used in the administration of hypertonic nutrient solutions because blood flow is insufficient to provide the necessary dilution of the fluid to protect the intima of the vessel. The exception occurs when the slightly hypertonic amino acid solutions containing limited amounts of dextrose are administered.

4.(D) Celecoxib (Celebrex) is a cyclooxygenase -2 (COX-2) inhibitor. It is, therefore, less likely to cause GI upset than most other NSAIDs.



©John Hambrock.