Pharmacy Practice Update

A Newsletter from Department of Pharmacy Practice, Jamia Hamdard

Volume: 02 Issue : 01 June 2004

ONE DAY TREATMENT IS AS EFFECTIVE AS SEVEN TO ERADICATE H. *PYLORI*

Recent studies shows that 2 weeks of triple therapy is ideal to eradicate H pylori .Early results of other studies even suggest that 1 week of triple therapy may be as effective as the 2-week therapy, with fewer side effects. Quadruple therapy, which uses two antibiotics, an acid suppressor, and a stomach-lining shield, looks promising in research studies. It is also called bismuth triple therapy. In a study, One day treatment of Quadruple therapy is seen to be as effective as a seven day triple therapy regimen in patients with H pylori dyspepsia. One hundred and sixty adult patients with dyspepsia scoring 3 or higher (of a possible 20) on the Glasgow dyspepsia severity score (GDSS) were recruited and with a positive urea breath test (signifying the presence of H pylori). Patients were randomised to receive either a four drug cocktail for one day or treatment with three drugs for seven days. Allocation may not have been concealed from the enrolling researcher (patients randomised to receive the seven day treatment were an average seven years older than the other patients and less likely to smoke).One day regimen:consisted of two tablets of 262 mg bismuth subsalicylate (Pepto-Bismol), 500 mg metronidazole (Flagyl), and 2 g amoxicillin (suspension), all taken four times over the course of the day, along with 60 mg lansoprazole (Prevacid) taken once.Seven day regimen: control group took 500 mg clarithromycin (Biaxin), 1 g amoxicillin, and 30 mg lansoprazole twice daily for seven days. The urea breath test was readministered five weeks after the start of treatment to the 150 patients who returned. Eradication rates were similar in the groups: 95% in the one day group and 90% in the seven day group. Treatment success rates were also similar: the GDSS scores dropped an average of 7.5 points in both groups, from a baseline of 7-11. Side effects were tallied at the five week follow up rather than during or immediately after treatment and may not be particularly accurate. Although the bottom line of the study indicates that a four drug, single day treatment was as effective as seven days of treatment with three drugs in eradicating Helicobacter pylori and symptoms in patients with H. pylori positive dyspepsia, results need to be validated in Population at large.

References : **BMJ 2004;328 (13 March),** doi:10.1136/bmj.328.7440.0-f

DRUG OF THE MONTH

CADUET - (Amlodipine besylate atorvas-tatin calcium)

Treating patients with multiple risk factors – A challenge?

Introduction

CADUET is the first medicine to treat two different conditions, high blood pressure and high cholesterol, in one pill.

Mechanism of action

CADUET tablets combine the long acting calcium channel blocker amlodipine besylate with synthetic lipid lowering drug atorvastatin calcium.

Strengths available

CADUET will be available in multiple dosing combinations to provide physicians with the greatest flexibility to get patients to their goal levels. CADUET tablets are available in different combination strengths of amlodipine/atorvastatin (5 mg/10 mg, 5/ 20 mg, 5/ 40 mg, 5/80 mg, 10/10 mg, 10/20 mg, 10/ 40 mg and 10/80 mg).

Pharmacokinetics

The rate and extent of absorption (bioavailability) of

amlodipine and atorvastatin from CADUET are not significantly different from the bioavailability of amlodipine and atorvastatin administered separate.

CADUET	Amlodipine	Atorvastatin
Tmax	**6-12 hours**	**1-2 hours**
Bioavailability	**64-90%**	**14%**
T1/2	**30 -50 hours**	**14 hours**

Indication

CADUET may be substituted for its individually titrated components. Patients may be given the equivalent dose of CADUET or a dose of CADUET with increased amounts of amlodipine, atorvastatin, or both for additional antianginal, blood pressure lowering, or lipid lowering effect.

CADUET may be used to provide additional therapy for patients already on one of its components. As initial therapy for one indication and continuation of treatment of the other, the recommended starting dose of CADUET should be selected based on the continuation of the component being used and the recommended starting dose for the added monotherapy.

CADUET may be used to initiate treatment in patients with hyperlipidemia and either hypertension or angina.. The recommended starting dose of CADUET should be based on the appropriate combination of recommendations for the monotherapies. The maximum dose of the amlodipine component of CADUET is 10 mg once daily. The maximum dose of the atorvastatin component of CADUET is 80 mg once daily.

Safety and Tolerabilty

CADUET (amlodipine besylate/atorvastatin calcium) has been evaluated for safety in 1092 patients in double blind placebo controlled studies treated for co-morbid hypertension and dyslipidemia. In general, treatment with CADUET was well tolerated. For the most part, adverseexperiences have been mild or moderate in severity. In clinical trials with CADUET, no adverse experiences peculiar to this combination have been observed. Adverse experiences are similar in terms of nature, severity, and frequency to those reported previously with amlodipine and atorvastatin. The following information is based on the clinical experience with amlodipine and atorvastatin.The most common side effects reported by CADUET patients were fluid retention, headache, dizziness, abdominal pain and weakness, and were characterized as mild to moderate.

CADUET was well tolerated by patients in clinical trials and has been administered with a variety of anti-hypertensive medications, including thiazide diuretics, beta-blockers, and angiotensin-converting enzyme inhibitors (ACEI).

CADUET is contraindicated in patients with hypersensitivity to any component of this medication; CADUET is contraindicated in patients with active liver disease or unexplained persistent elevations of serum transaminases; in women during pregnancy and in nursing mothers. With any statin, promptly report muscle pain, tenderness, or weakness. This could be a sign of serious side effects.

Rarely, patients, particularly those with severe obstructive coronary artery disease, have developed documented increased frequency, duration and/or severity of angina or acute myocardial infarction on starting calcium channel blocker therapy or at the time of dosage increase. The mechanism of this effect has not been elucidated.

References : URL : http://www.drugs.com/CADUET.html
URL : http://www.Rxlist.com

DISEASE OF THE MONTH

Fifth Disease

Erythema infectiosum, or “fifth disease”, is a common infection of childhood caused by a virus. It is fifth of six classic exanthems, or rash-associated diseases of

childhood.The numbering is of historic interest only: the other examthems, in order are first: measles; second: scarlet fever; third: rubella; fourth: "Dukes' disease", which was never clearly distinguished from other rash-producing diseases and is now thought to have been either measles, rubella, scarlet fever, a Staphylococcal infection, or one of several unspecified enteroviral infections; and sixth:roseola.

Frequency

Worldwide, epidemics of erythema infectiosum tend to occur in the late winter or early spring, with cyclical peaks of incidence occurring every 4-7 years. Approximately 60% of adults are seropositive for PV-B19 by age 20 years. Infection rates vary from 20-50% in schools and households during outbreaks. The epidemic periods of rubella and Erythema Infectiosum have often been overlapped.It was stated that about half of the patients diagnosed as rubella were actually B19 infection in a serological survey conducted in UK.It is, therefore, expected that differential diagnosis of the two diseases will depend more on the laboratory diagnosis.

Mortality / Morbidity

Erythema infectiosum is a self-limited illness that resolves without complications or sequelae in its classic childhood form. Infection in adults, hosts who are immunocompromised, and patients who are anemic or pregnant can result in more significant morbidity.

How it spread

It spreads by breathing in tiny droplets present in the air through infected peoples' coughs and sneezes. It can also spread through blood transfusions and from mother to baby.

Symptoms

About 7 days after contact with the virus, there is usually a mild flu-like illness that may last a week. A few days later the signs of infection are seen. This usually takes the form of a bright red rash on the face, often referred to as the 'slapped cheek' rash. A fainter rash may also be seen on the arms and legs. The rash is usually over in less than a week, but may reappear. Sore throat and swollen glands may also occur. In Adults, pain in the joints, especially the hands, knees, wrists and ankles is associated. Women are more prone to joint symptoms than men.

In pregnant woman, there is a risk of losing the baby. It is also possible for parvovirus B19 infection during pregnancy to cause "hydrops" (fluid overload and heart failure) in the developing fetus; however, this happens in less than 10% of mothers with *proven* parvovirus infection in the first trimester (which probably means that the risk is much less than 10%, since many infections go unnoticed). The risk seems to be much lower in the second trimester and may be nonexistent past that point. No one has shown that parvovirus B19 infection during pregnancy is associated with birth defects.

In people with disorders of the blood, EI can trigger severe anaemia and lowering of the white blood cell numbers. Sometimes a blood transfusion is needed to deal with this problem.

Treatment

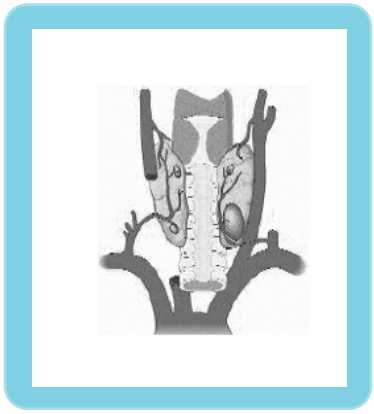
There is presently ***no*** vaccine available for parvovirus B19, and no good and simple test for it outside of hospital and research laboratories.Recently, however, antibody diagnostic reagents making use of B19 particle antigen expressed by recombinant DNA techniques have been developed.As with most viral infections there is no specific treatment for EI. Rest and paracetemol will keep the child more comfortable until the illness is over.

References : URL : http:// www.emedicine.com
URL : http:// www.drreddy.com

RECENT NEWS

Calcimimetics

Treatment of secondary hyperparathyroidism may reduce the high rates of death and cardiovascular disease among patients with end-stage renal disease. The goal of current therapy is to reduce the synthesis and secretion of parathyroid hormone by the hyperplastic parathyroid tissue in patients with secondary hyperparathyroidism decrease the serum phosphate level and supplement the levels of calcium and vitamin D.



Calcium-based phosphate binders are inexpensive but entail the risk of increasing the serum calcium–phosphate product, which has been statistically associated with adverse outcomes. Non–calcium-based polymers (e.g., sevelamer) are more expensive to use than calcium-based binders, but they do not increase the serum calcium level and they may also avert the increases in calcium scores in the coronary arteries and aorta, which have been associated with an increased risk of cardiovascular events and death in patients with one or more cardiac risk factors. Thus, these agents may be beneficial in patients who are receiving dialysis. Nonetheless, the polymers alone may not bring the parathyroid hormone level into the target range. Although aluminum-based binders are effective, they are generally avoided because of their potentially toxic effects. Relatively high doses of vitamin D analogues decrease parathyroid hormone levels by diminishing the transcription of the parathyroid hormone gene, but the effectiveness of this approach is limited by the accompanying elevations in serum calcium and phosphate and, thus, the calcium–phosphate product.

The discovery of the calcium-sensing receptor introduced the possibility that a therapy could be developed that would reduce the secretion of parathyroid hormone without inducing the adverse metabolic effects associated with supplemental calcium and vitamin D.The calcium-sensing receptor regulates the minute-to-minute secretion of parathyroid hormone and may also influence the development of parathyroid-gland hyperplasia. Calcimimetic compound, cinacalcet, lowers the threshold for the activation of calcium-sensing receptors in the parathyroid gland by serum calcium. In humans, these agents reduce serum parathyroid hormone levels not only in those with normal or reduced renal function, but also potentially in persons with primary hyperparathyroidism.

Previous short studies demonstrated that calcimimetics dramatically reduce parathyroid hormone levels in patients receiving hemodialysis and also decrease the serum levels of both calcium and phosphorus. The mechanism for phosphate lowering is unclear.

The National Kidney Foundation recommend a serum parathyroid hormone level in the range of 150 to 300 pg per milliliter (15.9 to 30.9 pmol per liter) in patients who are receiving dialysis. The long-term implications need further study in patients with end-stage renal disease as well as in those with less severe renal dysfunction.

Calcimimetic drugs are a long-awaited and welcome addition to options for treating secondary hyperparathyroidism. For patients with bone disease and disordered mineral metabolism resulting from secondary hyperparathyroidism associated with renal dysfunction, treatment can now be tailored to include a phosphate-binding agent to control phosphate levels, calcium supplementation to increase serum calcium levels, vitamin D for repletion of deficiency, and a

calcimimetic to reduce the serum parathyroid hormone level. Although impressive reductions in parathyroid hormone levels with cinacalcet are reported, studies of the effect of calcimimetics on hard outcomes are essential. Meanwhile, given what is known about the physiology of secondary hyperparathyroidism, maintaining the serum levels of calcium, phosphorus, and parathyroid hormone in the recommended ranges should remain a priority.

References : http://www.nejm.org

NIPRISAN- HERBAL REMEDY FOR SICKLE CELL ANAEMIA

A herbal remedy Niprisan® may be safe and effective for the treatment of sickle cell anemia, a genetic blood disorder that causes organ damage and episodes of severe pain. It is a herbal medicine developed by the National Institute for Pharmaceutical Research and Development in Abuja, Nigeria, from indigenous medicinal plants. Eighty-two patients with sickle cell anemia were randomly assigned to receive Niprisan® or placebo for 12 months. Patients taking Niprisan® experienced significantly fewer episodes of severe pain compared to those taking placebo. No serious side effects were observed. Although the researchers acknowledge that further studies are needed to confirm their findings, they "make the preliminary conclusion that Niprisan® is a safe and [effective] phytomedicine for the management of patients with sickle cell disorder."

According to Dr. Ramesh C. Pandey, Chairman & CEO of Xechem International, Inc., these studies are close to completion. Dr. Pandey believes upon successful completion of the standardization research, Xechem will be in a position to file its Investigational New Drug ("IND") application to FDA for HEMOXIN(TM), already under Orphan Drug designation by year end.

On Sept. 2, 2003, Xechem International, Inc. ("Xechem") announced that it received Orphan Drug designation from the U.S. Food and Drug Administration ("FDA"), Office of Orphan Drug Products Development for NIPRISAN, under the name HEMOXIN(TM), as a phyto-pharmaceutical drug for the treatment of patients suffering with Sickle Cell Disease ("SCD"). Xechem International, Inc. is a fully integrated biopharmaceutical company focusing on phyto-pharmaceuticals and other proprietary technologies for orphan diseases.

References : http://www.xechem.com

SAFETY OF MEDICINES

Public Health Advisory on Cautions for Use of Antidepressants in Adults and Children

The Food and Drug Administration had issued a Public Health Advisory that provides further cautions to physicians, their patients, and families and caregivers of patients about the need to closely monitor both adults and children with depression, especially at the beginning of treatment, or when the doses are changed with either an increase or decrease in the dose. However, it is not yet clear whether antidepressants contribute to the emergence of suicidal thinking and behavior. The agency is advising clinicians, patients, families and caregivers of adults and children that they should closely monitor all patients being placed on therapy with these drugs for worsening depression and suicidal thinking, which can occur during the early period of treatment. The agency is also advising that these patients be observed for certain behaviors that are known to be associated with these drugs, such as

anxiety, agitation, panic attacks, insomnia, irritability, hostility, impulsivity, akathisia (severe restlessness), hypomania, and mania, and that physicians be particularly vigilant in patients who may have bipolar disorder.The drugs under review include bupropion, citalopram, fluoxetine, fluvoxamine, mirtazapine, nefazodone, paroxetine, sertraline, escitalopram and venlafaxine. It should be noted that the only drug that has received approval for use in children with major depressive disorder is fluoxetine (Prozac). Several of these drugs are approved for the treatment of obsessive-compulsive disorder in pediatric patients, i.e., sertraline (Zoloft), fluoxetine (Prozac), and fluvoxamine (Luvox). FDA is asking manufacturers to change the labels of ten drugs to include stronger cautions and warnings about the need to monitor patients for the worsening of depression and the emergence of suicidal ideation, regardless of the cause of such worsening.

References : URL : http:// www.fda.gov/

FDA APPROVED DRUGS – 2004

Active Pharma-ceutical Ingredients	Brand Name	Approval Date	Indication
Amlodipine besylate/ Atorvastatin calcium tablet	CADUET (PfizerInc.)	30th January 2004	Treatment of Hypertension, Chronic stable angina & Vasospastic angina.
Cetuximab	Erbitux (Bristol-Myers Squibb)	12th February 2004	Treatment of Epidermal Growth factor receptor (EGFr)-expressing & metastatic colorectal cancer.
Pemetrexed injection	Alimta (Eli Lilly)	4th February 2004	Treatment of malignant pleural mesothelioma.
Tiotropium Bromide inhalation powder	Spiriva HandiHaler (Boehringer Ingelheim)	30th January 2004	Treatment of bronchospasm associated with chronic obstructive pulmonary disease

References: www.centerwatch.com/patient/drugs/druglist.html

Acknowledgement

We would like to thank Himanshu Sharma, Daisy Jindal, Tarun Arora and Virender Bhadana (Students-M.Pharm. Pharmacy Practice) for their conribution to the news letter.

Owned by:

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Pharmacy Practice Update invites articles, news from institutions and associations for publication. Your comments for improvement of the update all most welcome.

ADVERSE EVENT REPORTING FORM

Surname:	**First Name(s):**
Registration No.	**Date of Birth.:**
Address:	Sex: M [_] F [_] Ethnicity:

ALL MEDICINES IN USE – ASTERISK SUSPECT MEDICINE(S)

Medicine(s)/Vaccines(s) + Batch no.	Daily Dose	Route	Date Started	Date Stopped	Reason for Use

DESCRITPTION OF ADVERSE REACTION OR EVENT

Date of Onset:

Recovered [_] Not yet recovered [_] Unknown [_] Fatal [_] Date of Death:___/___/____Severe ? No [_] Yes [_] Rechallenge ? No [_] Yes [_] Result:

OTHER FACTORS

Renal Disease [_] Hepatic Disease [_] Allergy [_] Describe: OTC Use ? [_] Industrial Chemicals [_] Other Medical Conditions ? [_]

Describe:

REPORTING DOCTOR/PHARMACIST/NURSE

Name:	**Telephone:**
Address:	
	Date:
Email address	Signature:

Send completed form to Department of Pharmacy Practice
First floor, Majeedia Hospital, Hamdard Nagar, New Delhi - 110 062