Pharmacy Bulletin 2/2013

Pharmacy department, Hospital Labuan

Pharmacy Bulletin

AUGUST 2013

A Publication of Drug Information Service (DIS) Pharmacy, Hospital Labuan

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Probiotics May Lower Risk for Antibiotic-Associated Diarrhea

Antibiotic-associated diarrhea (AAD) is a common complication of antibiotic use, affecting 5–70% of adult patients taking antimicrobial agents and can be a reason for non-adherence to treatment. The severity of AAD may range from mild forms to a life-threatening condition. Therefore, the use of probiotics (living microorganisms with possible health benefits, such as those in yogurt) aimed at limiting the antibiotic-associated diarrhea is gaining interest.

Probiotics, defined as "live microorganism which when administered in adequate amounts confer a health benefit on the host," could be effective for preventing the occurrence of AAD by restoring the altered intestinal microflora, which normally act as a protective barrier against colonization by intestinal pathogens. Moreover, some probiotics, such as S. boulardii, have been shown to counteract pathogens within the intestinal lumen by means of different, direct antitoxic, and antimicrobial activities. Other probiotics commonly used include Lactobacillus, Bifidobacterium,Saccharomyces, Streptococcus, Enterococcus, and/or Bacillus.

In the short-term, taking probiotics in conjunction with antibiotics appears to be a safe and effective way of reducing risk of antibiotic-related diarrhea, although questions of which probiotics work best, with which antibiotics, or even how much probiotic someone needs to take remain up in the air.

References:
1. Probiotics May Help Prevent Antibiotic-Related Diarrhea
http://www.medscape.com/viewarticle/8052932.
2. Therapeutic Guidelines: Antibiotic 2010

By Anthony Liew, Pharmacist U41

Dengue

With more than one-third of the world's population living in areas at risk for transmission, dengue infection is a leading cause of illness and death in the tropics and subtropics. As many as 100 million people are infected yearly. Dengue is caused by any one of four related viruses transmitted by mosquitoes.

Yearly reports showed that weekly reported cases for dengue still exceeds 600 a week. This number is much higher than in 2012, where there are only 300 to 400 a week. The number of cases this year is 15% higher versus the same period in 2012.

From January to 23 July 2013, the number of reported cases was 14,931 compared to 12.910 last year. The number of deaths also increased this year in which as many as 29 deaths have been reported compared with 25 in 2012.

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In view of the recent outbreak of dengue in Malaysia, the following table is produced:

SITUASI DENGGI DI MALAYSIA DARI JANUARI HINGGA 23 JULAI 2013

Bil	Negeri	Jumlah Kes Terkumpul Jan. hingga 23 Julai 2013		Jumlah Kes Terkumpul 2012 untuk tempoh sama	
		KES	KEMATIAN	KES	KEMATIAN
1	Perlis	141	1	114	0
2	Kedah	474	1	487	3
3	Penang	399	2	491	1
4	Perak	1,030	0	904	3
5	Selangor	6,608	7	5,844	11
6	WPKL & Putrajaya	1,176	6	1,218	3
7	N Sembilan	340	0	254	1
8	Melaka	283	1	320	0
9	Johor	2,021	7	937	1
10	Pahang	307	0	389	1
11	Terengganu	168	0	450	0
12	Kelantan	746	1	667	0
13	Sarawak	855	2	555	0
14	Sabah	378	1	272	1
15	WP Labuan	5	0	8	0
	Jumlah	14,931	29	12,910	25

Home Care Card – Should be given to every patient categorized as group "A" – Patients that may be sent home.

What should be done?

• Adequate bed rest
• Adequate fluid intake (>5 glasses for average-sized adults or accordingly in children)
- Milk, fruit juice (caution with diabetes patient) and isotonic electrolyte solution (ORS) and barley/rice water.
- Plain water alone may cause electrolyte imbalance.
• Take paracetamol (not more than 4 grams per day for adults and accordingly in children)
• Tepid sponging
• Look for mosquito breeding places in and around the home and eliminate them

What should be avoided?

• Do not take acetylsalicylic acid (aspirin), mefenemic acid (ponstan), ibuprofen or other non-steroidal anti-inflammatory agents (NSAIDs), or steroids. If you are already taking these medications please consult your doctor.
• Antibiotics are not necessary.

If any of following is observed, take the patient immediately to the nearest hospital. These are warning signs for danger:

- Bleeding,
- Red spots or patches on the skin,
- Bleeding from nose or gums,
- Vomiting blood,
- Black-coloured stools,
- Heavy menstruation/vaginal bleeding,
- Frequent vomiting,
- Severe abdominal pain,
- Drowsiness,
- Mental confusion or seizures,
- Pale, cold or clammy hands and feet,
- Difficulty in breathing

Reference:

1) http://www.cdc.gov/dengue/epidemiology/index.html
2) http://whqlibdoc.who.int/publications/2009/9789241547871_eng.pdf
3) http://www.moh.gov.my/press_releases/438

By Chong Tian Siang, Pharmacist U41

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9.Herzig SJ, Howell MD, Ngo LH and Marcantonio ER. Acid-suppressive medication use and the risk for hospital-acquired pneumonia. Journal of American Medical Association 2009; 301: 2120-8.
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12. FDA. FDA drug safety communication: Clostridium difficile-associated diarrhea can be associated with stomach acid drugs known as proton pump inhibitors (PPIs). [Online] cited 2013 Jul 7 [2012 Oct 5]. Available from: URL: http://www.fda.gov/drugs/drugsafety/ucm290510.htm
13.Chun SK, Aurthur AK, Anibueze CI, Singh S, Cavallazzi R and Yong KL. Risk of Clostridium difficile infection with acid suppressing drugs and antibiotics: Meta-analysis. The American Journal of Gastroenterology 2012; 107: 1011-9.

Adverse Reactions of Proton Pump Inhibitors

By Stephanie Tiong, Pharmacist U41

Introduction

Proton pump inhibitors (PPIs) are one of the classes indicated for gastric ulcers. Examples include omeprazole, pantoprazole, esomeprazole, lansoprazole and rabeprazole. Ever since the introduction of omeprazole in late 1980s, they have become a class of most potent medications widely prescribed because of their outstanding efficacy and safety in treating acid-peptic disorders. PPIs work by blocking the terminal gastric acid secretion by binding to the proton pump on the parietal cell membranes in the stomach.

Effect of bones

PPIs appear to be relatively safe when used appropriately in the treatment of various GI disorders. However, recent reports have questioned the long term safety of PPIs. One of them is the association between chronic PPIs use and hip fractures. In a published paper (2006) by Yang *et al* concluded that the risk of hip fracture was significantly greater in patients who had been taken PPIs daily for at least one year than in those who had not.[2] Targownick *et al*. found out that the risk of hip fracture was not significantly seen only if after five years of PPIs exposure.[3] Exact mechanisms remain unclear but postulated to be due to the calcium malabsorption when acidic environment in stomach is being interfered. [4,5] PPIs can also affects the bone metabolism which causes low bone density and weakened bone that may lead to fractures.[6] There is still inadequate evidence to conclude that all patients receiving PPIs will have osteoporosis. Because the prevalence is there, thus, in May 2010, FDA had placed a warning mentioned the possible risk of fractures with the use of PPI.[7]

Risk of pneumonia

PPIs that suppresses the production of acid, can cause the pH of gastric to increase and hence it promotes the survival of bacteria in the gut. As a result of colonization, it precipitates both enteric and respiratory tract infections such as pneumonia. In 2008, Sarkar *et a*l examine the association between PPIs use and community acquired pneumonia (CAP). They discovered that patients who developed CAP risk were those who began PPI within the past 30 days.[8] Herzig *et al*. study in 2009 investigated the relationship between acid suppressive drugs and hospital acquired pneumonia (HAP) in non-ventilated patients. The analysis revealed that the association was more significant in PPIs than in other groups.[9]

Clostridium difficile-associated diarrhea (CDAD)

The spores of the bacterium are resistant to acid but vegetative phases are susceptible to gastric acidity. A potential mechanism for C. difficile infection is due to an increase in gastric pH post ingestion of PPIs, which facilitates the survival of bacteria and subsequent CDAD .[10,11] In August 2010, FDA already informed the consumers regarding the incidence of C. difficile infection prior to PPIs ingestion.[11] As borne out by a meta-analysis under Chun *et al*, there is a probable association between PPIs use and recurrent CDAD. This study shows a 65% increase in the CDAD incidence among PPIs users.[12]

Iron malabsorption and Vitamin B12 deficiency

Dietary non-heme iron absorption is facilitated by the presence of gastric acid. Iron malabsorption occurs when acid in the stomach unable to assist in the dissociation of iron salts obtained from food to more soluble and ferrous iron that absorbed easily.[4,5] Release of vitamin B12 (cobalamin) from dietary intake will not be facilitated by the depletion of gastric acidity. Theoretically, gastric acid promotes binding of vitamin B12 to bind to R-proteins for absorption eventually in gut. [4,6] Another mechanism of vitamin B12 deficiency results from PPI is due to ingestion by bacteria overgrowth when stomach itself is not in appropriate pH value anymore.[13] Question still remain regarding whether patient will develop anemia or neuropathy due to both micronutrient deficiency after PPIs use.

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Does the Parentrovite need to be protected from light during IV administration?

Product Information

IV Parentrovite is a product that comes in two vials which contains Vitamin B and C which are used to correct deficiencies that may occurred for example in alcoholism, after infections, after operations and in certain psychiatric states.

The stability of Parentrovite in intravenous infusion fluids, at room temperature, is as follows:

Intraveous Infusion Fluid	In the light
Glucose 5%	7 hours
Physiological saline (Sodium Chloride 0.9%)	7 hours
Glucose 4.3% with sodium chloride 0.18%	4 hours
Glucose 5% with potassium chloride 0.3%	4 hours
Sodium Lactate M/6	7 hours

Although no futher specific data are available, the solutions are expected to be stable for longer periods when protected from light. Store diluted solutions at 2°C to 8°C if not used immediately.

Reference:
www.medicines.org.uk/emc/

Other Update

How to Report Adverse Drug Reaction

1. Visit http://www.bpfk.gov.my
2. Click on the MADRAC (Adverse Drug Reactions) on the left toolbar, and
3. Click on "Reporting Online".

*As for the Doctors in Hospital Labuan, prefer way for reporting ADR as below:

1. Visit Portal Rasmi Hospital Labuan http://hlabuan.moh.gov.my/v4/
2. Click on "Muat Turun" then "Borang"
3. Click on "Report on Suspected Adverse Drug Reaction" to download the form.
4. Fill up the ADR reporting form then send a soft copy to the pharmacy department email: dic.farmasi@lbn.moh.gov.my
5. The Drug Information Centre pharmacist will then help to check and make sure everything is filled up correctly and accordingly before send to *National Centre for Adverse Drug Reactions Monitoring, Centre for Post Registration, National Pharmaceutical Control Bureau, Ministry of Health.* **OR**
6. Alternatively, the doctor can also call up the Clinical or DIC pharmacist for assistance in reporting the Adverse drug reaction.

Announcements

Pharmacy Staff Movement

New Staff:

Cik Stephanie Tiong Sze Hua
Pegawai Farmasi U41

En Ang Boon Hup
Penolong Pegawai Farmasi U29

Transferred:

Cik Siti Balkhis Bt Zainol
Pegawai Farmasi U44

Attention!!

Started 29th July 2013, the Inpatient pharmacy hosipital Labuan no longer provide the service of dispense medication to patients from A&E department except for the patients in ward during Saturday, Sunday and Public holiday from10am to 1pm.