Department of Medical Research
(Lower Myanmar)

Bulletin

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CONTENT

The objective of this Bulletin is to disseminate international news about health and medicine, developments, activities in medical and health research in DMR (LM). The Bulletin is published monthly and delivered to township hospitals.
The Editorial Committee, therefore, invites contributions concerning information about research activities and findings in the field of medicine and health..

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News about Medicine & Health

Interaction of Herbs and Drugs (Part IV)

Experts suggest that natural, all herbs and foods does not mean it is completely safe. Everything you put in your mouth has the potential to interact with something else. The medication that is taken by mouth travels through the digestive system in much the same way as food and herbs taken orally do. So, when a drug is mixed with food or another herb, each can alter the way the body metabolizes the other. Some drugs interfere with the body's ability to absorb nutrients. Similarly, some herbs and foods can lessen or increase the impact of a drug. In our country, many people take herbal supplements like Spirulina, *Ginkgo biloba* together with anti-diabetic, anti-hypertensive, diuretic and other drugs. Thus, it is crucial to know about the interaction between popular herbs, foods, and prescribed and over-the-counter drugs. The active ingredients in *Ginkgo bi/oba* extract account for its antioxidant properties and its ability to inhibit platelet aggregation [l]. Consequently, this herbal product is promoted for use in improving cognitive function and blood flow [2].To date, however, at least four reports of spontaneous bleeding in association with use of *Ginkgo biloba* have been published in England [2-6]. One report [2] described a 70-year-old man who presented with bleeding from the iris into the anterior chamber of the eye one week after beginning a self-prescribed regimen consisting of a *Ginkgo biloba* concentrated extract (Ginkoba), in a dosage of 40 mg twice daily. His medical history included coronary artery bypass surgery performed three years previously. His only medication was aspirin, in a dosage of 325 mg per day, which he had taken since his bypass surgery. After the spontaneous bleeding episode, he continued to take aspirin but discontinued the ginkgo product. Over a three-month follow-up period, he had no further bleeding episodes. Interaction of the ginkgo product and aspirin was considered the cause of his ocular hemorrhage.

Ginkgo biloba may also interact with warfarin (Coumadin). A 78-year-old woman who had been taking warfarin for five years after coronary bypass surgery suffered a left parietal hemorrhage after using a ginkgo product for two months [3]. No change was noted in her prothrombin time. The intracerebral bleeding was attributed to the antiplatelet effects of ginkgo. In another reported case, a 33-year-old woman was diagnosed with bilateral subdural hematomas after almost two years of ingesting *Ginkgo biloba,* in a dosage of 60 mg twice daily. Her other medications were acetaminophen and an ergotamine-caffeine preparation, which she used briefly. While she was taking

Ginkgo biloba, her bleeding times were 15 and 9.5 minutes. Within 35 days after she stopped taking the ginkgo product, her bleeding times were normal [4]. An additional case of spontaneous intracerebral hemorrhage was reported in a 72 year-old woman who had been taking *Ginkgo biloba,* in a dosage of 50 mg three times daily, for approximately six months [3]. No history of head trauma could be elicited. Until further information is available, patients who are taking garlic, vitamin E [6] warfarin, aspirin or other drugs with antiplatelet or anticoagulant effects should be cautioned about potential interactions with ginkgo products. Patients who are taking ginkgo products should be counseled to inform their physician about unusual bleeding or bruising, new-onset headaches or vision changes [6]. This herbal supplement is often advertised as a remedy for a variety of conditions, including vertigo and ringing in the ears. But most of all, *Ginkgo biloba* is purported to improve short-term memory. Some of the side effects of *Ginkgo biloba* include headache, dizziness, palpitations and sometimes diarrhea, nausea and vomiting [7].

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7. Anderson L. Medicinal Herbs: Take with grain of salt. Ag News, News and Public Affairs, Texas A&M University Agriculture program, 2004; 979: 862- 1460.

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Substance Found in Fruits and Vegetables reduces likelihood of the Flu

Mice given quercetin, a naturally occurring substance found in fruits and vegetables, were less likely to contract the flu, according to a study published by The American Physiological Society. The study also found that stressful exercise increased the susceptibility of mice to the flu, but quercetin canceled out that negative effect. Quercetin, a close chemical relative of resveratrol, is present in a variety of fruits and vegetables, including red onions, grapes, blueberries, tea, broccoli and red wine. It has been shown to have anti-viral properties in cell culture experiments and some animal studies, but none of these studies has looked specifically at the flu.The new study was conducted using mice, but if quercetin provides a similar benefit for humans, it could help endurance athletes, soldiers and others undergoing difficult training regimens, as well as people under psychological stress, according to Davis.

Study builds on previous research

"Quercetin was used because of its documented widespread health benefits, which include antiviral activity, abundance in the diet and reported lack of side effects when used as a dietary supplement or food additive," Davis said. Earlier mouse studies have found that stressful exercise can increase susceptibility to upper respiratory infections, although it is not yet clear if the same is true for humans. There was also preliminary information that mice may be more susceptible to the flu when they exercise to fatigue. The researchers in the current study hypothesized that exercise would increase the chance of the mice getting the flu but that quercetin would counteract the increased risk. Davis and his colleagues examined four groups of mice. Two groups performed three consecutive days of running to fatigue on a treadmill to mimic a short period of stressful exercise. One group of runners received quercetin, the other did not. The remaining two groups did not exercise. One non-exercise group received quercetin while the other did not. All four groups were then exposed to a common flu virus, HINl.

The researchers found that:

- Stressful exercise increased susceptibility to the flu. The mice that exercised to fatigue for three days were more likely to develop the flu than the mice that did not exercise (91 % versus 63%).
- The mice that exercised developed the flu much sooner than those that did not (6.9 days versus 12.4 days).
- Mice that exercised and took quercetin had nearly the same rate of illness as those that did not exercise. In other words, quercetin canceled out the negative effect of stressful exercise.
- The severity of the symptoms among those mice that either did not exercise or those that exercised but took the quercetin was about the same.
- Quercetin had protective effects for the mice that did not exercise.

Although this study was done with mice, a recent human study found that people who took quercetin suffered fewer illnesses following three days of exhaustive exercise compared to those who did not. Unlike the mouse study, the humans were not inoculated with a virus. "This is the first controlled experimental study to show a benefit of short-term

quercetin feedings on susceptibility to respiratory infection following exercise stress," said Davis. "Quercetin feeding was an effective preventive strategy to offset the increase in susceptibility to infection that was associated with stressful exercise."

Source:http://www.sciencedaily.com/releases/2008/09/

Frequently Asked Questions about Pregnancy

Is it safe to dye my hair while pregnant?

There are conflicting reports about the safety of hair dye during pregnancy: Several studies found no ill effects on pregnant rodents given 100 times the typical human dose of these products, whereas British researchers reported chromosome damage among women who dyed their hair. Although this study was not conducted on pregnant women, this finding suggests that there may be some risk to coloring your hair while pregnant. As a precaution, some physicians advise you to avoid hair color until after your first trimester (the period when your baby's vital organs, head, body and limbs form). Colorants made from vegetable dyes such as henna are preferable to the chemical dyes used in permanent and semi-permanent formulas. Recent studies indicate that hair dyes contain relatively high levels of bio-available lead acetate that can be harmful to the fetus, particularly the nervous system and brain. Check the product label and avoid lead based hair products.

Can I continue to drink coffee or tea?

There is no evidence that regular amounts of caffeinated beverages, such as tea, coffee or colas, cause birth defects, but some studies indicate that heavy use of these beverages may be associated with a slight ircrease in your risk of miscarriage in the first and second trimesters. In a study by the National Institute of Child Health and Human Development the researchers found no harm in drinking up to three cups of coffee a day, but most experts advise limiting consumption to no more than two caffeinated beverages a day, or switching to decaf. Tea and colas have less caffeine than coffee does, and are also available in decaffeinated formulas.

Is it okay to use my computer?

Several recent large recent studies have found no link between the electromagnetic radiation from a video display terminal (VDT) and an increased risk of miscarriage. To be on the safe side, American College of Obstetricians and Gynecologists advises sitting at least 18 inches away from your computer to minimize potential exposure.

Which foods should I avoid when I'm expecting?

To protect your baby (and yourself) from potentially harmful bacteria and parasites, many doctors advise women to abstain from undercooked or raw meat, eggs and fish (including sushi and steak tartar), and unpasteurized goat or cow's milk. Rare or raw meat can harbor the microorganisms that cause toxoplasmosis-- an illness that can cause birth defects, illness or death of the baby. Fish is an important part of a healthy diet. However, women who are pregnant, may become pregnant, or are nursing should not eat shark, swordfish, king mackerel, or tilefish. These fish contain high amounts of a form of mercury that may harm an unborn child's or baby's brain or nervous system. Women who are pregnant or who may become pregnant can safely eat 12 ounces of other types of cooked fish each week. It is important to eat a variety of other fish, such as shellfish, canned fish, smaller ocean fish, or farm-raised fish. Pregnant wome'1 also should limit the amount of freshwater fish caught by family and friends to one serving each week. A serving size of fish is about 3-6 ounces.

Should I continue to exercise?

It is safe to exercise in moderation, unless you are advised not to by your obstetrician. For more complete guidelines, see *our* section on Exercise and Pregnancy.

Is smoking or drinking alcohol during pregnancy really that bad?

Not only can smoking put you and your baby at increased risk of complications such as placenta previa, premature birth or low birth weight, but even second-hand smoking (inhaling fumes from someone else's cigarette) can be risky. The developing fetus needs oxygen to develop. Many of the compounds found in cigarette smoke binds more strongly to red blood cells than oxygen and therefore deprive the fetus of needed oxygen. This is a good reason to make a "No Smoking" rule in your home and to avoid the smoking sections of restaurants or other public places. It has also been shown that babies exposed to smoke or raised in homes of smokers have an increased incidence of Sudden Infant Death Syndrome ("crib death"). There is no scientific research that establishes a safe level of drinking during pregnancy. The Surgeon General recommends that pregnant women abstain from alcohol, which is known to increase the risk of miscarriage, premature birth, and fetal alcohol syndrome (a pattern of serious birth defects, including mental impairment, learning disabilities and other deformities).

I eat healthy, so should I still take prenatal vitamins?

If you eat a balanced diet, you may not need a vitamin supplement during pregnancy. The most important elements are iron and folic acid. Iron is needed because during pregnancy, the mother's blood volume is expanding to deliver adequate blood flow to the fetus. In addition to increasing the blood volume, the numbers of red blood cells also increase. Iron is

needed for creating red blood cells. A lack of iron could lead to anemia. Folic acid is used in the development of the spinal column. A lack of folic acid increases the incidence of spinal cord defects like spina bifida. Supplementation of folic acid decreases the incidence of spinal cord defects by at least 60%. The effects are best if folic acid is taken even before pregnancy occurs.

Can having sex hurt the baby?

Unless your pregnancy is classified as high risk, or your obstetrician cautions against intercourse, you and your partner can enjoy each other physically without fear of harming your baby, who is well cushioned inside the uterus. For most women, there is no medical reason not to have sex as often as you wish.

Can I travel on a plane while I am pregnant?

Airline regulations do not permit women who are more than 36 weeks pregnant to travel by plane without a doctor's note, but there is usually no reason you cannot fly earlier in your pregnancy. The biggest risk when traveling is the development of a blood clot in the legs. Two things in pregnancy pooling of blood in the legs and increased clotting factors in the blood-increase the risk of forming a blood clot in the leg. When you are sitting in a confined space for long periods of time, like in an airplane or long car ride, you further slow the blood flow thereby further increasing the risk of a blood clot. To reduce your chances, get up several times during the ride to stretch your legs. You can also stretch the calf muscles by doing isometric calf exercises in your seat. With your toes on the ground, lift your heels up and down in repetition. Because you may need medical assistance in the town you are traveling to, ask your OB/GYN to help you locate an obstetrician in the city you will be visiting. You may also want to take your medical records with you.

Would going through a metal detector injure my baby?

Airport or other metal detectors do not emit any harmful radiation and will not hurt you or your baby. If you are still concerned about going through these machines, one possibility is to request that *you* be hand searched by a female security officer instead.

(Source: www.netwellness.org/healthtopics/pregnancy/)

Hope over 'early arthritis test'

A new way of scanning joints which may reveal early warning signs of arthritis is being developed by US researchers. The MRI scan looks for low levels of the chemical glycosaminogycan, which helps cartilage in joints hold the water that makes it tough and elastic. New York University researchers told the American Chemical Society conference early diagnosis could reduce the need for surgery later in life. The Arthritis Research Campaign said the scan could help assess treatments. The weakening and breakdown of cartilage, which cushions the moving parts of joints, is a key factor in the development of osteoarthritis, which is common in the over-40s. There are an estimated eight million people in the UK who have the problem in some form or another, and in severe cases patients can require constant painkillers or even joint replacement surgery. Cartilage is tough and elastic because of its high water content, and existing MRI scans look for lower levels of this as a sign that the disease is developing. The team is trying to spot the disease even earlier by looking for a substance called glycosaminogycan (GAG), which helps the cartilage hold plenty of water. The scientists found a way to make the hydrogen atoms attached to GAG emit a signal which can be picked up by the scanner.

Dietary supplements

Dr Alexej Jerschow, one of the researchers, said: "Our methods have the potential for providing early warning signs for cartilage disorders like osteoarthritis, thus potentially avoiding surgery and physical therapy later on." He said that a patient given early notice of impending arthritis could take steps to protect their joints, perhaps using dietary supplements such as glucosamine and chondroitin, which may be able to slow or halt joint degeneration. The next stage now is to test the technique in trials. However, Professor Alan Silman, the medical director of the Arthritis Research Campaign, said that the practical implications of the research were "currently very limited". "Unfortunately at the moment there is no treatment that could be offered that would change the situation."What it may prove to be is a very sensitive test of drug treatment response as new agents are developed."

(Source: http://news.bbc.co.uk/health)

Highlight on Useful Research Findings Applicable to Health

Microbiology (by Dr. Wah Wah Aung)

Emergence of high level ciprofloxacin resistant *Neisseria gonorrhoeae* strains isolated from STD and gynaecology clinics in Yangon

Ciprofloxacin is a widely used oral antibiotic recommended for the treatment of gonorrhoea. The prevalence of gonococcal resistance to ciprofloxacin has increased rapidly worldwide. A cross-sectional

study was carried out from August 2006 to July 2007 to determine antibiotic susceptibility of *N. gonorrhoeae* strains isolated from symptomatic men and women attending at Central STD Clinic and gynaecology OPD of Central Women Hospital and Thingungyun Sanpya Hospital. Antibiotic susceptibility was tested by disc diffusion method and minimum inhibitory concentration (MIC) was determined by E test at Bacteriology Research Division, DMR (LM). The *N. gonorrhoeae* isolates were susceptible to azithromycin (87.5%), cefixime (80%), ceftriaxone (>70%) and ciprofloxacin (≥55%). High level ciprofloxacin resistance (MIC≥ μg/ml) was found in 30% of tested isolates. This study highlighted decreased susceptibility of gonococcal isolates to ciprofloxacin and emergence of high level resistant strains in the study population. These findings indicated the limitation of usefulness of ciprofloxacin as the first line therapy for gonorrhoea.

Reference:

Wah Wah Aung & Kyi Kyi Thinn. Evaluation of *in vitro* antibiotic suceptibility of *N..gonorrhoeae* strains isolated from symptomatic men and women in Yangon. *MHSRJ* 2007: 19(3); 173-178.

Snakebite (by Dr. Tun Pe)

First aid methods recommended for use in Snakebites

- Most traditional first aid methods should be discouraged: they do more harm than good!
- Arterial tourniquets are not recommended: if the tourniquet was left on for more than about 40 minutes, the limb might be damaged by ischaemia.
- Pressure immobilization is recommended for bites by neurotoxic elapid snakes, including sea snakes, but should not be used for viper bites because of danger of increasing the local effects of the necrotic venom.
- Caution! Release of a tight tourniquet or compression bandaging may result in the dramatic development of severe systemic envenoming.

Recommended first aid methods

Reassurance of the patient

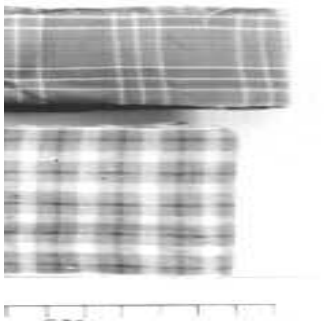
- The bitten limb should be **immobilized** as far as practicable with a splint or sling.
- First aid measure should be applied soon after the bite and remove it after antivenom therapy.
  - Local compression (pad) immobilization first aid for Russell's viper bite.
  - Pressure immobilization using crepe bandage first aid for neurotoxic envenoming.
- Patient should be **carried and transported** to the nearest health centre.
- Paracetamol may be used for pain.

For Russell's viper bite

Local compression (pad) immobilization first aid technique

A rubber or cotton pad (folded piece of longyi) measuring about 4 finger-width and breadth with 2 finger-thick is placed on the site of the bite and a hand tight bandaging with a piece of cotton (longyi) or bandage (4 finger width and 3 feet long) is applied to localize the venom at the site of bite. For bites on toes and fingers, a smaller pad measuring 2 finger width, breadth and thickness is used. The affected limb is immobilized with a splint. The victim is carried and transported to the nearest health station without delay. The pad is removed after giving antivenom. The bitten limb must not be exercised. Walking and running promote spread of venom. Even walking after upper limb envenoming will lead to systemic envenomming despite first aid measures. The pad can be left in place for a long time without any side effects. It is recommended to be used for Russell's viper bite cases.

Fig. A picture of rubber pad with a strip of bandage (left), a cotton pad (right) and a cotton strip for bandaging the cotton pad (top)



Reference:

Tun Pe,Aye Aye Myint, Sann Mya, Nu Nu Aung, Khin Aye Kyu & Tin OO. Southeast Asian J of Trop Med Public Health 2000:31346-348. (To be continued)

News Related to Medical Research Activities in Myanmar

Consultant Visiting DMR (LM)

No.	Name & Designation	Name of division visited	Duration
1.	Dr. Katherine Ba Thike & Dr. Ngeow Yun Fong Area managers for the Asia and Pacific Region,WH O/ HRP	Epidemiology Research Division	3-5 Sep, 2008

Research Grants to DMR (LM)

No.	Title	Division	Principal Investigator	Funding Agency	Duration
1.	Screening of glucose 6 phosphate dehydro-genase (G6PD) enzyme deficiency in three various races living in malaria endemic areas of Myanmar	Parasitology Research Division	Dr. Nwe Nwe Oo Research Scientist	Joint SEARO-TDR small grant program	2008 - 2009

Seminars, Workshops, Scientific Talks, etc. Held in DMR (LM)

No.	Topics	Speaker's Name	Date	Place
1.	(i) Diagnostic points of Gynaecyto-pathology in cervical cancer screening (ii) Human Papilloma virus (HPV) Genotyping from cervical neoplasia in Myanmar by PCR-RELP (Restriction fragment length polymorphism) method	Dr. Mu Mu Shwe Research Officer Immunology Research Division	10-9-08	SRC Lecture Theatre
2.	Lessons learned at Environmental Toxicology, Technology and Management Program: Knowledge and Application	Dr. Ohnmar May Tin Hlaing Research Scientist Chemical Toxicology Research Division	17-9-08	SRC Lecture Theatre
3.	Medical Ethics in Japan	Dr. Tsuyoshi Awaya Professor & Chairman, Department of Bioethics, Okayama University	22-9-08	Auditorium

ဆေးသုတေသနဦးစီးဌာန (အောက်မြန်မာပြည်)တွင် ဝယ်ယူရရှိနိုင်သော စာအုပ်များနှင့် ပစ္စည်းများ

အမှတ် (၅) ဇီဝကလမ်း၊ ဒဂုံမြို့နယ်၊ ရန်ကုန်မြို့ (☎ ၃၇၅၄၇, ၃၇၅၄၅၇, ၃၇၅၄၅၉)

၁။ Lecture Guide on Research Methodology (6th edition)
၂။ Guidelines on Poison Prevention, Control and Management
၃။ Malaria Research Findings Reference Book, Myanmar (1990-2000)
၄။ Dengue Research Findings Reference Book, Myanmar (1980-2002)
၅။ A Guide to Management of Snakebite by Snakebite Research Group, DMR (Lower Myanmar)
၆။ Guideline for Submission of Application to Ethical Review Committee, Department of Medical Research (Lower Myanmar) October, 2006. (CD)
7/ Annotated Bibliography of Research Findings on Tuberculosis in MYANMAR
၈။ ဆေးသုတေသနဦးစီးဌာနမှစမ်းသပ်တီထွင်ထားသော မွေ့အန္တရာယ် ကာကွယ်ရေးဖိနပ်နှင့် လက်အိတ်။
၉။ ကျန်းမာရေးနှင့်မြန်မာ့ဆေး။
၁၀။ ဆေးသုတေသနဦးစီးဌာနမှသုတေသနပြုမှတ်တမ်းတင်ထားသောမြန်မာတိုင်းရင်းဆေးဖုံများ။
၁၁။ ဆီးနှင့်ကျောက်ကပ်ရောဂါအကြောင်းသိကောင်းစရာ။

- ဆေးအဆိပ်အတောက်ဖြစ်ခြင်း **(Poisoning)** နှင့် ပတ်သက်သည့်သတင်းအချက်အလက်များ သိရှိလိုပါလျှင် ဆေးသုတေသနဦးစီးဌာန (အောက်မြန်မာပြည်)ရှိ **အမျိုးသားအဆိပ်ထိန်းချုပ်ရေးဌာန** (ဖုန်း-၃၇၉၄၈၀) သို့မဟုတ် ဒေါက်တာသော်ဇင် (ဖုန်း-၀၉ ၅၁၃၆၇၀၈) သို့ ဆက်သွယ်ဆွေးနွေးနိုင်ပါသည်။
- **ဆေးသုတေသနဦးစီးဌာန (အောက်မြန်မာပြည်)၏ 'ကာကွယ်ဆေးနှင့်ရောဂါရှာဖွေရေးဆေးခန်း'**တွင် လိုအပ်သည့်စမ်းသပ်စစ်ဆေးမှုများပြုလုပ်၍ကုသပေးခြင်း၊ လိုအပ်သလိုညွှန်ကြားခြင်းများနှင့်ကာကွယ်ဆေးထိုးနှံပေးခြင်းတို့ကိုဆောင်ရွက်ပေးနေပါသည်။
- ဆေးသုတေသနဦးစီးဌာန(အောက်မြန်မာပြည်)မှ သုတေသနပညာရှင်များနှင့် ကျန်းမာရေးဦးစီးဌာန၊ ဗဟိုအမျိုးသမီးဆေးရုံကြီးမှ သားဖွားမီးယပ်အထူးကုဆရာဝန်ကြီးများပူးပေါင်းဆောင်ရွက်သော **သားအိမ်ခေါင်းကင်ဆာစမ်းသပ်ဖော်ထုတ်သည့်ဆေးခန်း** ကို ဆေးသုတေသနဦးစီးဌာန (အောက်မြန်မာပြည်)တွင် ဖွင့်လှစ်၍ စမ်းသပ်စစ်ဆေးလိုသူအမျိုးသမီးများကို တနလ်ာနေ့နှင့် ဗုဒ္ဓဟူးနေ့ နံနက်ပိုင်း ၁၀နာရီမှ ၁၂နာရီ အတွင်း အခမဲ့စစ်ဆေးပေးလျက်ရှိပါသည်။

သို့

ကျန်းမာရေးဝန်ကြီးဌာနမှဝန်ထမ်းများအားဖြန့်ဝေပေးပါရန်မေတ္တာရပ်ခံအပ်ပါသည်။