Department of Medical Research

Bulletin

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The objective of this Bulletin is to disseminate international news about health and medicine, developments, activities in medical and health research in DMR. 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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Highlights on Useful Research Findings Applicable to Health

Bacteria and Viral Profile of Severe Acute Respiratory Infections of Children Attending Yangon Children's Hospital and Yankin Children's Hospital

This study was conducted under ECOMORE (Economic Development Ecosystem Modification and Emerging Infectious Diseases Risk Evaluation) project. Objectives of study are (1) To reinforce the national capacity for diagnosis of some infectious diseases causing sever acute respiratory infection (SARI) and (2) To build a network for the diagnosis and surveillance of SARI in Yangon. This study is a cross-sectional hospital and laboratory based descriptive study.

Among 511 children attending Yangon Children's Hospital and Yankin Children's Hospital from December 2014 to April 2016, Bacteriology section tested 825 samples including respiratory samples, blood samples for Culture and sensitivity by using Vitek 2 and Bact/Alert machine. Out of 129 Gram Negative Bacilli (GNB), *K.pneumoniae* 32%, *P.aeruginosa* 18%, *A.baumannii* 13%, *E.coli* 9% were mostly isolated.

Among 35 Gram positive cocci (GPC) isolation, *S.aureus* 42% and *S.pneumonia* 6% were mostly isolated. Multidrug resistance rate were *E.coli* 100%, *K.pneumonia* 95%, *A.baumanii* 82% and *P.aeruginosa* 17%. Extended spectrum beta latamase (ESBL) producing *K.pneumoniae* and *E.coli* was 6 out of 10 tested organisms. Carbarpenemase producing GNB and Methicillin resistant *Staphylococcus aureus* (MRSA) were 21% and 33%, respectively. Out of 262 urine samples, 48 were positive for *S.pneumoniae* antigen, 1 for Legionella antigen.

Virology section tested 529 samples of 490 inclusions using the FTD33 multiplex PCR method which can detect 33 pathogens including 20 viruses, 12 bacteria and 1 fungus. Out of 490 inclusions, 374 were PCR positive. Different types of samples including nasopharyngeal, throat, endotracheal and laryngeal swab, tracheal secretion and bronchoalveolar lavage were tested.

Out of 566 viruses, Respiratory Syncytial Virus (RSV) (19.3%), Rhinovirus (17.0%), Parechovirus (14.3%), Bocavirus (11.1%), Adenovirus (10.2%), Metapneumovirus A and B (10.2%), Parainfluenza virus (5.7%), Enterovirus (3.0%), Influenza A virus (2.8%), Coronavirus (4%), Parainfluenza virus (0.9%), Influenza C virus (0.4%), were detected. This study highlighted the etiological agents of bacteria, viruses and choice of antibiotics for bacterial pathogens in SARI.

ရန်ကုန်ကလေးဆေးရုံကြီးနှင့် ရန်ကင်းကလေးဆေးရုံကြီးတို့တွင် ဆေးရုံတက်ရောက်ကုသခဲ့သော ကလေးများတွင်ဖြစ်ပွားသည့် ပြင်းထန်အဆုတ်ရောင်ရောဂါကိုဖြစ်ပွားစေသော ဘက်တီးရီးယားနှင့် ဗိုင်းရပ်(စ်)ရောဂါပိုးများအကြောင်း လေ့လာခြင်း

ဤလေ့လာချက်ကို ECOMORE (Economic Development Ecosystem Modification and Emerging Infectious Diseases Risk Evaluation) စီမံချက်ဖြင့် လုပ်ဆောင်ခဲ့ပါသည်။

ဤလေ့လာချက်၏ ရည်ရွယ်ချက်များမှာ (၁) ပြင်းထန်အဆုတ်ရောင်ရောဂါကို ဖြစ်ပွားစေသော ရောဂါပိုးများကို ရှာဖွေနိုင်သည့် ဓာတ်ခွဲခန်းများ၏ အခန်းကဏ္ဍကို ပိုမိုတိုးတက်လာစေရန်နှင့် (၂) ရန်ကုန်တိုင်းဒေသကြီးအတွင်း ပြင်းထန်အဆုတ်ရောင်ရောဂါကို ရောဂါရှာဖွေရေးနှင့် ထောက်လှမ်းကြည့်ရှုစောင့်ရှောက်ရေးကွန်ယက်ကို တည်ဆောက်ရန်တို့ဖြစ်ပါသည်။ သုတေသနပုံစံမှာ ဆေးရုံနှင့်ဓာတ်ခွဲခန်းအခြေပြု Cross sectional descriptive လေ့လာချက်ဖြစ်ပါသည်။ ရန်ကုန်ကလေးဆေးရုံကြီးနှင့် ရန်ကင်းကလေးဆေးရုံကြီးတို့တွင် ၂၀၁၄ ဒီဇင်ဘာလမှ ၂၀၁၆ ဧပြီလ အတွင်း ပြင်းထန်အဆုတ်ရောင်ရောဂါဖြင့် ဆေးရုံတက်ရောက်ကုသခဲ့သော ကလေးလူနာ ၅၁၁ ဦးထံမှ အသက်ရှူလမ်းကြောင်းဆိုင်ရာ ဓာတ်ခွဲနမူနာများနှင့် သွေးနမူနာ စုစုပေါင်း ၈၂၅ ခုကို Vitek 2 နှင့် BACT/ALERT စက်များကိုအသုံးပြု၍ ဘက်တီးရီးယားပိုးမွှေးမြူခြင်းနှင့် ပဋိဇီဝဆေးများစမ်းသပ်ခြင်းကို လုပ်ဆောင်ခဲ့ပါသည်။ Gram negative bacilli (၁၂၉) ကောင်အနက် *Klebsiella pneumoniae* ၃၂ ရာခိုင်နှုန်း *Pseudomomas aeruginosa* ၁၈ ရာခိုင်နှုန်း *Acinetobacter baumannii* ၁၃ ရာခိုင်နှုန်း *Escherichia coli* ၉ ရာခိုင်နှုန်းနှင့် အခြား Gram negative bacilli ဘက်တီးရီးယားများကို ရှာဖွေဖော်ထုတ်နိုင်ခဲ့ပါသည်။ ဆေးသုံးမျိုးနှင့်အထက် ယဉ်ပါးနှုန်းမှာ *Escherichia coli* ပိုးတွင် ၁၀၀ ရာခိုင်နှုန်း၊ *Klebsiella pneumonia* ပိုးတွင် ၉၅ ရာခိုင်နှုန်း၊ *Acinetobacter baumannii* ပိုးတွင် ၈၂ ရာခိုင်နှုန်းနှင့် *Pseudomonas aeruginosa* ပိုးတွင် ၁၇ ရာခိုင်နှုန်းဖြစ်ပါသည်။ Extended spectrum of β.lactamase enzyme ထုတ်လုပ်မှုနှင့် ပတ်သက်၍ *Klebsiella pneumonia* နှင့် *Escherichia coli* (၁၀) ကောင် စမ်းသပ်ရာတွင် (၆) ကောင်မှာ enzyme ထုတ်လုပ်မှုရှိကြောင်းတွေ့ရှိရပါသည်။ Carbarpenemase enzyme ထုတ်လုပ်သော Gram negative bacilli ဘက်တီးရီးယားမှာ ၂၁ ရာခိုင်နှုန်းဖြစ်ပြီး၊ Methicillin resistant Staphylococcus aureus (MRSA) မှာ ၃၃ ရာခိုင်နှုန်းတွေ့ရှိရပါသည်။

ဆီးနမူနာ ၂၆၂ ခု အနက် နမူနာ ၄၈ ခု တွင် *Streptococcus pneumoniae* antigen ကိုလည်းကောင်း၊ နမူနာ ၁ ခုတွင် *Legionella* antigen ကိုလည်းကောင်း၊ နမူနာ ၂ ခုတွင် အဆိုပါ antigen နှစ်မျိုးစလုံးကိုလည်းကောင်း တွေ့ရှိရပါသည်။

ဗိုင်းရပ်(စ်)ဗေဒဌာနတွင် ကလေးလူနာ ၄၉၀ ဦးထံမှ ရရှိသော နမူနာ ၅၂၉ ခုကို ဗိုင်းရပ်(စ်)ပိုး (၂၀) မျိုး၊ ဘက်တီးရီးယား (၁၂) မျိုး၊ မှိုရောဂါပိုး (၁) မျိုး စမ်းသပ်နိုင်သော FTD 33 multiplex PCR နည်းဖြင့် ဓာတ်ခွဲစမ်းသပ်ခဲ့ပါသည်။ လူနာ ၄၉၀ ဦး အနက် ၃၇၄ ဦး၏ ဓာတ်ခွဲနမူနာများတွင် ဗိုင်းရပ်(စ်)ရောဂါပိုးများတွေ့ရှိခဲ့ရပါသည်။ ဓာတ်ခွဲနမူနာများအနေဖြင့် နှာခေါင်းအတွင်းပိုင်းတို့ဖတ်နမူနာ၊ အဆုတ်လေအိတ်အတွင်းမှ အရည်နမူနာ၊ နှာခေါင်းတို့ဖတ်နမူနာ၊ လည်ချောင်းတို့ဖတ်နမူနာ၊ လေပြွန်အတွင်းထည့်ထားသောပိုက်မှ တို့ဖတ်နမူနာ၊ လည်မျိုတို့ဖတ်နမူနာ၊ လေပြွန်အတွင်းမှအရည်နမူနာတို့ကို စမ်းသပ်စစ်ဆေးခဲ့ပါသည်။ ဗိုင်းရပ်(စ်)ရောဂါပိုး (၅၆၆) ကောင်အနက် Respiratory Syncytial Virus A နှင့် B ၁၉.၃ ရာခိုင်နှုန်း၊ Human rhinovirus ၁၇.၀ ရာခိုင်နှုန်း၊ Human parechovirus ၁၄.၃ ရာခိုင်နှုန်း၊ Human bocavirus ၁၁.၁ ရာခိုင်နှုန်း၊ Adenovirus ၁၀.၂ ရာခိုင်နှုန်း၊ Human metapneumovirus A နှင့် B ၁၀.၂ ရာခိုင်နှုန်း၊ Human parainfluenza virus 3 ၅.၇ ရာခိုင်နှုန်း၊ Enterovirus ၃ ရာခိုင်နှုန်း၊ Influenza A virus ၂.၈ ရာခိုင်နှုန်း၊ Human coronavirus ၂.၁ ရာခိုင်နှုန်း၊ Human coronavirus 43 ၁.၆ ရာခိုင်နှုန်း၊ Human coronavirus HKCL 1 ၁.၁ ရာခိုင်နှုန်း၊ Human parainfluenza virus 1 ၀.၅ ရာခိုင်နှုန်း၊ Influenza C virus ၀.၄ ရာခိုင်နှုန်း၊ Human parainfluenza virus 2 ၀.၄ ရာခိုင်နှုန်း၊ Human corovirus 229 ၀.၂ ရာခိုင်နှုန်း၊ Human parainfluenza virus 4 ၀.၂ရာခိုင်နှုန်းတို့ရှာဖွေဖော်ထုတ်နိုင်ခဲ့ပါသည်။ ဤလေ့လာချက်သည် ပြင်းထန်အဆုတ်ရောင်ရောဂါဖြစ်ပွားစေသော ဘက်တီးရီးယားပိုးများနှင့် ဗိုင်းရပ်(စ်)ပိုးများကို ရှာဖွေစမ်းသပ်ပြီး ဘက်တီးရီးယားပိုးများအတွက် မည်သည့်ပဋိဇီဝဆေးကို ရွေးချယ်ရမည်ဆိုသည်ကို မီးမောင်းထိုးပြထားပါသည်။ ဆေးယဉ်ပါးဘက်တီးရီးယားများ၊ Extended spectrum β.lactamase enzyme ထုတ်လုပ်သော ဘက်တီးရီးယားများ၊ Carbarpenem ကဲ့သို့သော ဆေးဝါးများကို ယဉ်ပါးသောဘက်တီးရီးယားများ၊ Methicillin resistant *Staphylococcus aureus* ကဲ့သို့သော ဘက်တီးရီးယားများကိုတွေ့ရှိရပါသည်။ ဗိုင်းရပ်(စ်)ရောဂါကြောင့်ဖြစ်သော ပြင်းထန်အဆုတ်ရောင်ရောဂါသည် အသက်ငယ်ရွယ်သောကလေးများ အထူးသဖြင့် ယောကျ်ားလေးများတွင်ဖြစ်ပွားမှုများပြီး၊ တစ်နှစ်ပတ်လုံးအနက် ဆောင်းရာသီတွင် ပိုမိုဖြစ်ပွားတတ်ကြောင်း လေ့လာတွေ့ရှိရပါသည်။

Reference: Moe Myat Aye, Latt Latt Kyaw, San Mya, et al. The 46th Myanmar Health Research Congress Programme & Abstracts:85.(Third Prize for Basic Research)

Abstract of Research Paper Published or Read Abroad by DMR Scientists

Histopathological Analysis of Apoptosis, and Expression of P53 and Ki-67 in Invasive Duct Carcinoma of Breast

Breast cancer is the most common malignancy in female population. Various predictive and prognostic factors affect tumor progression which is determined by the proliferation and loss of cells. The purpose of this study is to determine the frequency of apoptosis and its relationship to the pathological parameters, including Ki-67 expression, and expression of P53 protein. A total of 26 cases of invasive ductal carcinoma of different grades were included in this study. Apoptotic cells were determined by the modified TUNEL method. Expressions of P53 (apoptosis-related genes), and Ki-67 (a proliferation marker)

were examined immunohistochemically on paraffin-embedded tissue sections. The correlation between apoptosis and the clinicopathological findings were studied.

The mean age of patients was 50.8±10.3 with an age range of 32 to 74 years. The apoptotic index was increased in high grade tumors. The mean percentage of apoptotic index was 47.4±13.6 in grade 1 tumors and 69.7±19.1 in grade 3 tumors. The mean Ki-67 was 29.3±9.9 in grade 1 tumors and 33.4±12.2 in grade 3 tumors, and that of P53 was 79.4±18.7 in grade1 tumors and 89.4±7.8 in grade 3 tumors. The apoptotic index, and expressions of P53 and Ki-67 were increased in grade 3 compared to grade 1 and 2. No significant relationship was found between apoptotic index, Ki-67 index, and expression of P53. Various apoptosis-related findings including P53 expression were observed in high grade tumors of invasive ductal carcinoma. Results of this study can predict the disease prognosis and support the management of breast cancer patients.

Reference: *Min Min Win, Khin Kant Kaw Oo, Myat Mon Oo, et al.* South East Asia Breast Cancer Symposium,Yangon 2017: 14th -16th July, 2017. (Second Prize for Best Poster Award: Clinical and Basic Research)

News about Medicine & Health

Arsenicosis

Drinking water rich in arsenic over a long period leads to arsenic poisoning or arsenicosis. Many waters contain some arsenic and excessive concentrations are known to naturally occur in some areas. The health effects are generally delayed and the most effective preventive measure is supply of drinking water low in arsenic concentration.

The disease and how it affects people

Arsenicosis is the effect of arsenic poisoning, usually over a long period such as from 5 to 20 years. Drinking arsenic-rich water over a long period results in various health effects including skin problems (such as colour changes on the skin, and hard patches on the palms and soles of the feet), skin cancer, cancers of the bladder, kidney and lung, and diseases of the blood vessels of the legs and feet, and possibly also diabetes, high blood pressure and reproductive disorders. Absorption of arsenic through the skin is minimal and thus hand-washing, bathing, laundry, etc. with water containing arsenic do not pose human health risks.

In China (Province of Taiwan) exposure to arsenic via drinking-water has been shown to cause a severe disease of the blood vessels, which leads to gangrene, known as ‘black foot disease’. This disease has not been observed in other parts of the world, and it is possible that malnutrition contributes to its development. However, studies in several countries have demonstrated that arsenic causes other, less severe forms of peripheral vascular disease.

The cause

Arsenicosis is caused by the chemical arsenic. Arsenic is a toxic element that has no apparent beneficial health effects for humans. Natural arsenic salts are present in all waters but usually in only very small amounts. Most waters in the world have natural arsenic concentrations of less than 0.01 mg/litre. Arsenicosis is caused by exposure over a period of time to arsenic in drinking water. It may also be due to intake of arsenic via food or air. The multiple routes of exposure contribute to chronic poisoning. Arsenic contamination in water may also be due to industrial processes such as those involved in mining, metal refining, and timber treatment. Malnutrition may aggravate the effects of arsenic in blood vessels. WHO's Guideline Value for arsenic in drinking water is 0.01 mg/litre. This figure is limited by the ability to analyse low concentrations of arsenic in water.

Scope of the problem

Because of the delayed health effects, poor reporting, and low levels of awareness in some communities, the extent of the adverse health problems caused by arsenic in drinking-water is unclear and not well documented. As a result there is no reliable estimate of the extent of the problem worldwide. WHO is presently collecting information in order to make such an estimate. Case reports on the situation in various countries have been compiled and the arsenic problem in Bangladesh in particular has prompted more intensive monitoring in many other countries. In Bangladesh, 27 % of shallow tube-wells have been shown to have high levels of arsenic (above 0.05mg/l). It has been estimated that 35 - 77 million of the total population of 125 million of Bangladesh are at risk of drinking contaminated water (WHO bulletin, volume 78, (9): page 1096). Approximately 1 in 100 people who drink water containing 0.05 mg arsenic per litre or more for a long period may eventually die from arsenic related cancers.

Interventions

The most important action in affected communities is

the prevention of further exposure to arsenic by provision of safe drinking-water. Arsenic-rich water can be used for other purposes such as washing and laundry. In the early stages of arsenicosis, drinking arsenic-free water can reverse some of the effects. Long term solutions for prevention of arsenicosis include:

For provision of safe drinking-water:

- Deeper wells are often less likely to be contaminated.
- Rain water harvesting in areas of high rainfall such as in Bangladesh. Care must be taken that collection systems are adequate and do not present risk of infection or provide breeding sites for mosquitoes.
- Use of arsenic removal systems in households (generally for shorter periods) and before water distribution in piped systems.
- Testing of water for levels of arsenic and informing users.

In order to effectively promote the health of people the following issues should be taken into account:

- Monitoring by health workers-people need to be checked for early signs of arsenicosis-usually skin problems in areas where arsenic in known to occur.
- Health education regarding harmful effects of arsenicosis and how to avoid them.

Sources:http://www.who.int/water_sanitation_health/diseases-risks/diseases/arsenicosis/en.
Contributed by Chemical Toxicology Research Division

E-Cigarette Flavorings may Damage Blood Vessels and Heart

E-cigarette liquids sweetened with flavorings like clove and vanilla may damage endothelial cells in the blood vessels and heart, a small experiment suggests. Researchers examined what happened in lab tests when they exposed endothelial cells to different doses and concentrations of nine popular vaping flavorings: banana, butter, cinnamon, clove, eucalyptus, mint, strawberry, vanilla and "burnt" - which is used to impart a popcorn or tobacco-like flavor to foods. At high concentrations, all nine flavorings damaged cells in lab tests, researchers reported June 14 online in Arteriosclerosis, Thrombosis, and Vascular Biology.

Five flavors - vanilla, mint, cinnamon, clove, and burnt - impaired production of nitric oxide. "The loss of nitric oxide is important because it has been associated with heart disease outcomes like heart attacks and strokes," said lead study author Jessica Fetterman of Boston University School of Medicine. It is one of the first changes we observe in the blood vessels in the progression to heart disease and serves as an early indicator of toxicity. Study suggests that the flavoring additives, on their own in the absence of the other combustion products or components, cause cardiovascular injury. Big U.S. tobacco companies are all developing e-cigarettes. The battery-powered gadgets feature a glowing tip and a heating element that turns liquid nicotine and flavorings into a cloud of vapor that users inhale. Inhaling vapor from these chemicals may damage the lungs.

In the current study, researchers tested cells from nine nonsmokers and 12 smokers of traditional cigarettes, and they also tested some commercially available endothelial cells from human hearts. Even before they were exposed to chemical flavorings, tobacco smokers' cells already had a reduced ability to produce nitric oxide, lab tests showed. Nonsmokers' cells had impaired nitric oxide production after they were exposed to chemical flavorings. Beyond its small size, another limitation of the study is that it wasn't a controlled experiment designed to prove whether or how chemical flavorings might directly cause damage to blood vessels or lead to heart problems. It's also not clear whether exposure to chemical flavorings might be better or worse for human health than nicotine, which also strongly affects blood vessels and the heart.

Source: https://www.medscape.com/viewarticle/899195.
Contributed by Pathology Research Division

Vitamin D Linked to Metabolic Syndrome in Postmenopausal Women

Postmenopausal women with vitamin D deficiency have greater risk for metabolic syndrome than those with sufficient levels, data from a cross-sectional cohort study suggest. Levels of 25-hydroxyvitamin-D [25(OH)D] below 20 ng/ ml were also linked to a greater likelihood of high triglycerides and low high-density lipoprotein (HDL) cholesterol. This suggest that the maintenance of adequate serum levels of 25(OH)D in postmenopausal women may reduce the risk of developing metabolic syndrome, a condition that is known to be related to cardiovascular events and mortality in this group. The study, published in the January 2018 issue of Maturitas, included 463 women, 45 to 75 years old, who had not menstruated for at least a year, were not taking vitamin D supplements, and had a diagnosis of cardiovascular disease. The researchers measured their total cholesterol, HDL levels, low-density lipoprotein (LDL) levels, triglycerides, glucose, insulin, and 25(OH)D levels. Vitamin D deficiency was defined as serum 25(OH)D levels below 20 ng/ml, whereas levels between 20 and 29 ng/ml were insufficient. Diagnosis of metabolic syndrome required presence of at least three of five criteria: a waist circumference greater

than 88 cm, triglycerides at least 150 mg/dl, HDL levels below 50 mg/dl, blood pressure at least 130/ 85 mm Hg, and glucose at least 100 mg/dl. Just under a third (32.0%) of the women had sufficient vitamin D levels, and a similar proportion (32.6%) had insufficient levels.

The remaining 35.4% were deficient. Physical activity levels, use of hormone therapy, smoking, and prevalence of diabetes or arterial hypertension were similar among all three groups of women. Age, body mass index, HDL and LDL, glucose, waist circumference, blood pressure, age at menopause, and time since menopause were also comparatively similar among the groups.

More than half (57.8%) of the women with vitamin D level below 30 ng/ml had metabolic syndrome compared with 39.8% of women with sufficient vitamin D levels. Vitamin D below 30 ng/ml was associated with higher total cholesterol, triglycerides, and insulin levels. After adjustment for age, time since menopause, body mass index, smoking, and physical activity level, women deficient in 25(OH)D had nearly double the odds of metabolic syndrome as those with sufficient levels (odds ratio [OR], 1.90). Decreasing concentrations of vitamin D correlated with an increase in the number of metabolic syndrome criteria met.

Researchers explained that there are several possible physiopathological mechanisms that could explain the effect of vitamin D on the metabolic syndrome and the most possible explanation is that vitamin D influences insulin secretion and sensitivity, which play a major role in metabolic syndrome. Moreover, across the adult age range, the reduction in outdoor activities and the possible decrease in the capacity of aged skin to synthesize 25(OH)D may contribute to high prevalence of [vitamin D] deficiency in post-menopausal women.

Source: https://www.medscape.com/viewarticle/894508.
Contributed by Experimental Research Division

Risk of Maternal Death Doubled in Pregnant Women with Anemia

Pregnant women with anemia are twice as likely to die during or shortly after pregnancy compared to those without the condition, according to a major international study led by Queen Mary University of London of over 300,000 women across 29 countries. Anaemia, which is characterized by a lack of healthy red blood cells, affects 32 million pregnant women worldwide, and up to half of all pregnant women in low and middle-income countries (LMICs). Women in LMICs are at increased risk of anemia due to higher rates of dietary iron deficiency, inherited blood disorders, nutrient deficiencies and infections such as malaria, HIV and hookworm.

The researcher wrote anemia in pregnancy is one of the most common medical problems pregnant women encounter both in low and high income countries. They had shown that if a woman develops severe anemia at any point in her pregnancy or in the seven days after delivery, she is at a higher risk of dying, making urgent treatment even more important. Anemia is a readily treatable condition but the existing approaches so far have not been able to tackle the problem. Clinicians, policy makers and healthcare professionals should now focus their attention on preventing anemia, using a multifaceted approach, not just hoping that iron tablets will solve the problem.

The study, which is the largest of its kind, looked at World Health Organization data on 312,281 pregnancies in 29 countries* across Latin America, Africa, Western Pacific, Eastern Mediterranean and South East Asia. Of these, 4,189 women had severe anemia (a blood count of less than 70 grams per liter of blood) and were matched with 8,218 women without severe anemia. Previous studies had suggested that anemia was strongly associated with death, but that this was due to other clinical reasons and not anemia directly. This analysis is the first to take into account factors that influence the development of anemia in pregnancy (e.g. blood loss or malaria infection) which may have been skewing the results of previous studies. The study results showed that, when all known contributing factors are controlled for, the odds of maternal death are doubled in mothers with severe anemia. The relationship was seen in different geographical areas and using different statistical approaches, which suggests an independent relationship between severe anemia and maternal death does exist.

The research will help to shape health policies worldwide by providing scientific evidence of the importance of prevention and treatment of maternal anemia, ultimately saving lives and avoiding preventable deaths. Strategies for the prevention and treatment of maternal anemia include providing oral iron tablets for pregnant women, food fortification with iron, improving access to antenatal care in remote areas, hookworm treatment and access to transfusion services.

The study has limitations including its observational nature meaning that a direct causal relationship between severe anemia and maternal death cannot be proven, because other factors may come into play. The study included authors from CIBER Epidemiology and Public Health (Spain), World Health Organization, National Center for Child Health and Development (Japan), Sao Paulo Federal University (Brazil), Fortis

Memorial Research Institute (India), Ministry of Health (Sri Lanka), Khon Kaen University (Thailand) and University of Tsukuba (Japan). * The countries included in the study were Afghanistan, Angola, Argentina, Brazil, Cambodia, China, Democratic Republic of the Congo, Ecuador, India, Japan, Jordan, Kenya, Lebanon, Mexico, Mongolia, Nepal, Nicaragua, Niger, Nigeria, Pakistan, Palestine, Paraguay, Peru, Philippines, Qatar, Sri Lanka, Thailand, Uganda, and Vietnam.

Source: www.sciencedaily.com.
Contributed by Scientific Group on Blood Research

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(၄၇) ကြိမ်မြောက် မြန်မာနိုင်ငံကျန်းမာရေးဆိုင်ရာသုတေသနညီလာခံ ဆေးသုတေသနဦးစီးဌာန

ကျန်းမာရေးနှင့်အားကစားဝန်ကြီးဌာနမှ ကြီးမှူးကျင်းပသည့် (၄၇) ကြိမ်မြောက် မြန်မာနိုင်ငံကျန်းမာရေးဆိုင်ရာသုတေသနညီလာခံကို ၂၀၁၉ ခုနှစ် ဇန်နဝါရီလ (၇) ရက်မှ (၁၁) ရက်အထိ ဆေးသုတေသနဦးစီးဌာန၊ အမှတ်(၅)၊ ဇီဝကလမ်း၊ ဒဂုံမြို့နယ်၊ ရန်ကုန်မြို့တွင် ကျင်းပရန် စီစဉ်ထားပါသည်။

ညီလာခံတွင် ကျန်းမာရေးသုတေသနစာတမ်းဖတ်ပွဲ၊ ကျန်းမာရေးသုတေသနပိုစတာပြပွဲနှင့် ကျန်းမာရေးပညာရပ်ဆိုင်ရာ နှီးနှောဖလှယ်ပွဲနှင့် ဟောပြောပွဲများပါဝင်မည်ဖြစ်ရာ စိတ်ပါဝင်စားသူ ပြည်တွင်းပြည်ပမှ ပညာရှင်များအား ဖိတ်ခေါ်အပ်ပါသည်။ သုတေသနစာတမ်းတင်သွင်းရန်အတွက် စာတမ်းအကျဉ်းကို (၁၅-၁၀-၂၀၁၈) ရက်နောက်ဆုံးထား၍လည်းကောင်း၊ စာတမ်းအပြည့်အစုံကို (၁၅-၁၁-၂၀၁၈) ရက်နောက်ဆုံးထား၍ ဆေးသုတေသနဦးစီးဌာနသို့လည်းကောင်း (သို့မဟုတ်) ညီလာခံ Website (https://www.myanmarhrc.com) တွင် Online Submission Soft Copy ကို Proper Channel မှတစ်ဆင့် ပေးပို့နိုင်ပါသည်။

ပြည်တွင်း၊ ပြည်ပNGO အဖွဲ့အစည်းများ၊ ဆေးဝါးကုမ္ပဏီများ၊ ဓာတ်ခွဲခန်းကိရိယာ၊ ဓာတုပစ္စည်းတင်သွင်းသည့်ကုမ္ပဏီများနှင့် ပြည်တွင်း၊ ပြည်ပပုဂ္ဂလိကဓာတ်ခွဲခန်းများ၊ ဆေးရုံများ၊ ဆေးခန်းများအားလည်း ဆေးပစ္စည်းကိရိယာပြခန်းများ၊ ပိုစတာပြခန်းများနှင့် ပညာရပ်ဆိုင်ရာဟောပြောပွဲများတွင် ပါဝင်ဆင်နွှဲနိုင်ပါရန် ဖိတ်ခေါ်ပါသည်။ ဆေးပစ္စည်းကိရိယာပြခန်းများ၊ ပိုစတာပြခန်းများအတွက် Email: info@dmr.gov.mm သို့ဆက်သွယ်နိုင်ပါသည်။

(၄၇) ကြိမ်မြောက်မြန်မာနိုင်ငံကျန်းမာရေးဆိုင်ရာသုတေသနညီလာခံကျင်းပရေးလုပ်ငန်းကော်မတီ
ဆေးသုတေသနဦးစီးဌာန
အမှတ်(၅)၊ ဇီဝကလမ်း၊ ဒဂုံမြို့နယ်၊ ၁၁၁၉၁၊ ရန်ကုန်မြို့။

ဆေးသုတေသနဦးစီးဌာနမှ ကျန်းမာရေးဝန်ဆောင်မှု အစီအစဉ်

- အဆိပ်အတောက်ဖြစ်ခြင်း (**Poisoning**) နှင့်ပတ်သက်သည့် သတင်းအချက်အလက်များသိရှိလိုပါလျှင် ဆေးသုတေသနဦးစီးဌာနရှိ အမျိုးသားအဆိပ်ထိန်းချုပ်ရေးဌာန (ဖုန်း- ၀၁ ၃၇၉၄၈၀) သို့မဟုတ် (ဖုန်း- ၀၉ ၇၃၁၅၅၃၄/ ၀၉ ၇၈၀၁၈၁၈၈) သို့ ဆက်သွယ်ဆွေးနွေးနိုင်ပါသည်။

သို့

ကျန်းမာရေးနှင့်အားကစားဝန်ကြီးဌာနမှဝန်ထမ်းများအားဖြန့်ဝေပေးပါရန်မေတ္တာရပ်ခံအပ်ပါသည်။