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.

(ქართულად) ჩვენი გარემოში შეიძლება გვიანი გამოტანა მონაწილეობით საჯარო ტაგვის და საჯარო პირობებში ალგორითმურად გამოვიყენებთ არ. ძ. 0,10 და არ. ძ. 0,01 (ჯგუფი ჯერ გამოვიყენთ არ. ძ. 0,10 ამ პროცესში. ჩვენ ასე გამოვიყენებთ არ. ძ. 0,01) ახალგაზრდა ტაგვების და არაარაგომეთი საჯარო ტაგვების მიღწევა. ჩვენ არ გემაგირებთ არ. ძ. 0,10 ჯგუფში, თუმცა არაარაგომეთმა არ. ძ. 0,01 ჯგუფში არ შეიძლება ქმნიოს.

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48th Myanmar Health Research Congress

Abstracts in English and Myanmar for Best papers

• Frequency of Colistin Resistance and Plasmid Mediated Colistin Resistance (mcr-1 gene) in Carbapenem-Resistant Enterobacteriaceae Clinical Isolates

• Intussusception among Children Less Than 2 Years of Age; Vital Baseline Information for Rotavirus Vaccination Plan in 2020

Abstract of Research Paper Published or Read Abroad by DMR Scientists

• Contamination of Arsenic in Drinking Water in Ayeyawady Delta Region, Myanmar

Meeting, Workshop, Training, Scientific Talk
With the aims to attain the highest quality of health care in Myanmar by strengthening the health-related research capacity and to apply these evidence-based research findings and knowledge into practice by disseminating, at the 48th Myanmar Health Research Congress, organized by the Ministry of Health & Sports which was held in Department of Medical Research from 13th to 17th January, 2020 at No.5, Ziwaka Road. H.E. Dr. Myint Htwe, Union Minister, Ministry of Health & Sports attended and delivered the speech at the opening ceremony.

This year’s congress theme was “Antimicrobial Resistance: A Threat of Global Concern.”

A total of 122 research papers were presented and 107 posters were displayed at the congress. Research papers & posters presented at the Congress covered various disciplines of research: Malaria, Cancer, TB, Hepatitis, Dengue, Maternal and Child Health, Antimicrobial Resistance, Food and Drug, HIV, Traditional Medicine, Nutrition, Reproductive Health, Environmental Health, Health Systems Research, etc.

Altogether 16 symposia and 3 scientific talks on latest and important health research and science were also presented and discussed by local and international researchers and scholars who were from Japan, Korea, Indonesia, Norway, Singapore, China, Thailand, Britain, and Australia. Also updated information on health care and management problems in Myanmar were exchanged and discussed by prominent researchers and academicians from local and abroad, sharing knowledge, views and updated information so as to become a healthier and more prosperous Myanmar.

**Symposia**

1. Antimicrobial Resistance: A Threat of Global Concern  
2. Health Hazards of Environmental Arsenic Poisoning  
3. Symposium on Patient Safety  
4. Genomic Analysis in Microbiology  
5. Myanmar-Korea Joint Symposium (2020): Recent Diagnostic and Therapeutic Approaches for Tuberculosis Management  
6. Progress of Breast Cancer Diagnosis and Treatment, and the Evaluation of Breast Cancer Screening in Myanmar  
7. Community-Based Strategies for Malaria Elimination  
8. Health Equity Symposium: Embrace Diversity, Enhance Equity  
9. Evidence-Based Research Findings for Development of Healthy Policy: Non-Communicable Diseases (NCDs) and Risk Factors  
10. EPI Program Myanmar: Progress, Challenges and Way Forward  
12. Updates on Emerging and Neglected Infectious Diseases  
13. Human Poisonings in Myanmar: Current Situation and Future Priorities  
14. Healthcare in Ethnic Areas: Reaching to the Last Miles  
15. Schistosomiasis in Myanmar as an Emerging NTD: Epidemiology, Diagnosis, and Research Updates  
16. Role of Medical Devices in Clinical Practice

**Scientific Talk**

1. Formation of National Health Research Body and Future of General Practitioners in Myanmar  
2. Basic Research Projects for Next-Generation Regenerative Therapy  
3. Adaptability and Perception of Medical Students Towards Virtual Learning Environment in Basic Clinical Skills Training in Pre-Clinical Medical Education

Researchers, authorities of national/regional/local levels health and health related non-governmental organizations attended and actively participated at sessions of the Congress and exchanged their comprehensive views, opinions and valuable experiences. Exhibition booths on medicines, medical and pharmaceutical equipments were displayed to facilitate awareness on supportive materials especially diagnostics for research and new types of medications. During
the Congress, Information Sub-committee conducted press release daily and made necessary arrangements to interact between the media and researchers.

The Closing Ceremony and the Best Papers & Poster Awarding Ceremony were held on 17th January, 2020. At the Awarding Ceremony, Best Paper for Basic Research, Best Paper for Applied Research, Best Paper for Health Systems Research, Young Researcher Awards (Basic Research Paper, Applied Research Paper) and Best Poster were awarded.

**Best Paper for Basic Research**

**First Prize**
- Frequency of Colistin Resistance and Plasmid Mediated Colistin Resistance (mcr-1 gene) in Carbapenem-resistant Enterobacteriaceae Clinical Isolates
  Nilar San, Mya Mya Lwin, Thin Thin Mar, Myint Thazin Aung, Pyae Pho Thu & Win Win Maw

**Second Prize**
- Pyrazinamide Resistance and pncA Mutations in Drug Resistant Clinical Mycobacterium Tuberculosis Isolates from Myanmar
  Phyut Win Ei, Aye Su Mon, Mi Mi Htwe, Su Mon Win, Lai Lai San, Kay Thi Aye, Wint Wint Nyunt, Zaw Myint & Wah Wah Aung

**Third Prize**
- Serum miRNA-21 Expression and Its Diagnostic Potential in Hepatocellular Carcinoma
  Aye Aye Win, Myat Thin Nwe, Khin Saw Aye, Win Win Swe & Khin Thidar Aung

**Best Paper for Applied Research**

**First Prize**
- Intussusception among Children Less Than 2 Years of Age; Vital Baseline Information for Rotavirus Vaccination Plan in 2020
  Theingi Win Myat, Nway Nway Thin Aung, Hlaing Myat Thu, Aye Aye, Nyo Nyo Win, Maung Maung Lwin, Htin Lin, Nang Sarm Hom & Moh Moh Hitun

**Second Prize**
- Efficacy of Febuxostat Versus Allopurinol in Gouty Arthritis Patients with Mild Renal Impairment
  Ei Ei Khao Mon, Soe Yu Zaw, Lei Lei Htay & Shin Hnaung Lwin

**Best Paper for Health Systems Research**

**First Prize**
- Strengthening Menstrual Health Management of Rural Women in Taungdwingyi Township, Magway Region
  Win Nitar, Ohnmar Myint & Than Tun Sein

**Second Prize**
- Barriers to Implementing Adverse Drug Reaction Reporting System
  Aye Phint Phyu, Waing Thawda, Ye Htut Linn, Khine Thu, Thida Tun, Lwin Moe May, Myat Myat Soe & Nu Nu Aye
Third Prize

- Enhancing Knowledge on Positive Living Together with Sexual and Reproductive Health among HIV Infected Adolescents on Anti-retroviral Therapy: A Quasi-experimental Study
  Myo Myo Mon, Kyaw Min Htut, Phyoo Aung Naing, San Hone, Wai Wai Myint, Lwin Lwin Ni, Zin Mar Aye & Ni Ni Hlay Aung

Basic Research

- Multidrug Resistant Acinetobacter Species from Clinical Isolates at North Okkalapa General and Teaching Hospital
  Myat Su Hlaing, Thin Thin Mar, Myint Thazin Aung & Win Win Maw

Applied Research

- Urine Mycobacterial Lipoarabinomannan (LAM) Antigen in HIV/TB Coinfected Children
  May Sandar Soe, Chaw Sandar Htun & Khin Nyo Thein

Best Poster Award

First Prize

- From Evidence to Practice: Community Lead School Feeding in Primary Schools in Rural Area of Hmawby Township
  Moh Moh Hlaing, Sanda, Mya Ohnmar, Khin Mittar Moe San, Phyoo Yadanar, Thazin Aung, Sandar Tun, Aung Myat Kyaw & Theingi Thwin

Second Prize

- Assessment of Rhodamine B Content in Shrimp Paste in Pathein District, Ayeyawady Region
  Myo Tun Kyaw, Khay Mar Mya, Tun Zae, Pyei Phyoo, Myint Myint & Cho Thet Khaing

Third Prize

- Perceived Quality of Care: Providers’ Aspect Upon Antenatal, Delivery and Postnatal Care at Health Facilities in Primary Health Care Level
  Aung Pyae Phyoo, Wai Wai Han, Saw Saw, Su Wai Mon, Nwe Oo Mon, Hnin Lae Yi Khaing & Hla Mya Thway Eindra

Abstracts in English and Myanmar for Best Papers

Frequency of Colistin Resistance and Plasmid Mediated Colistin Resistance(mcr-I gene) in Carbapenem-Resistant Enterobacteriaceae Clinical Isolates

The global increase in antimicrobial resistance is extremely concerning as it compromises patient outcome and increases the financial burden on health-care systems. Colistin has become the last line of defense for the treatment of infections caused by Gram-negative bacteria resistant to multiple classes of antibiotics, especially carbapenem-resistant Enterobacteriaceae (CRE). The use of colistin in clinical practice and use in agriculture and food animals, have contributed to the rapid dissemination of resistance. Resistance to colistin, encoded by the plasmid-mediated mcr-I gene, was first identified in animal and clinical samples from China in November 2015 and has subsequently been reported from numerous other countries. Routine colistin susceptibility testing for Enterobacteriaceae is laborious and costly, however, without such testing, the real prevalence of colistin resistance and mcr gene will be underestimated. A coordinated approach to the prevention of plasmid-mediated mobile
colistin resistance mecr gene dissemination is needed, particularly to prevent the proliferation of an organism harboring a plasmid with mecr gene and carbapenemase.

Therefore, in the present study, CRE were collected from clinical isolates identified by routine culture and sensitivity testing during year 2018, in Microbiology Laboratory, North Okkalapa General and Teaching Hospital.

Antimicrobial sensitivity profiles were tested by disc diffusion method. Colistin sensitivity pattern of CRE were performed by broth micro-dilution method according to CLSI (2018) guide line in Microbiology Department, University of Medicine 2. Then, mecr gene detection among colistin resistant isolates was performed by PCR in common research laboratory, University of Medicine 2.

A total of 194(12.5%) CRE isolates were identified among 1555 clinical isolates from (10004) various clinical specimens during the year 2018. Among CRE, Klesiella spp were the most common and most were from sputum samples and from Medical unit.

Among CRE isolates, 12.4% (24/194) were colistin resistant (MIC > 4 µg/mL). Plasmid-mediated colistin resistant (mer-1) gene was found in only one Esch. coli isolate.

This is the first report on frequency of colistin resistance and plasmid mediated colistin resistance mecr-1 gene in carbapenem-resistant enterobacteriaceae clinical isolates in Myanmar. This finding provided the useful information to improve clinical infection control practice and help in guiding appropriate antibiotic use.

Intussusception among Children Less Than 2 Years of Age: Vital Baseline Information for Rotavirus Vaccination Plan in 2020

Rotavirus vaccine is planned to introduce in the National Immunization Program of Myanmar in 2020. Reported potential association of a small increased risk of intussusception after vaccination is a major safety concern and it is mandatory to collect baseline information before vaccine introduction. This study aimed to provide baseline epidemiological data on intussusception-associated hospitalizations among children less than 2 years before vaccine introduction. Both retrospective and prospective studies were conducted at three tertiary Children's Hospitals where pediatric surgical facility is present. Retrospective study reviewed the medical records of intussusception cases for past 3 years (2015-2018) and prospective, active study was conducted from August 2018 to September 2019. Brighton Level 1 Criteria was used for confirmation of intussusception. Demographic, clinical, diagnostic, and treatment practices data were collected in structured case report forms and descriptive data analysis was performed. A total of 626 (421 in retrospective and 205 in prospective) confirmed intussusception cases were identified. The median age of intussusception was 6 months and 59.4% were male. The cases commonly presented with vomiting (82.1%) and bloody diarrhea (77.0%). The most common diagnostic tools used were surgery (63.3%) followed by abdominal radiology (23.3%). Regarding treatment, 66.1% required surgical intervention either manual reduction or intestinal resection and the rest 33.9% by either air or barium enema. Mortality was 0.8%. Late arrival to hospital (>3 days after onset) is significantly associated with requirement of surgery, which in turn is significantly associated with longer hospital stay. The information on peak age of intussusception in this study highly recommends to complete full doses of rotavirus vaccine earlier before 6 month of age to avoid the occurrence of intussusception by chance alone post vaccination. Findings on common clinical presentations also support the program in giving information on awareness of the symptoms, enhancing early reporting and referral in order to reduce requirement of surgery and longer hospital stay. Moreover, all these large-scale baseline data on intussusception is the first ever report in Myanmar and essential to public health officials in assessing the risk of intussusception, balancing risks and benefits of rotavirus vaccine and facilitate the monitoring system in post vaccination.
Contamination of Arsenic in Drinking Water in Ayeyawady Delta Region, Myanmar

In Myanmar, an estimated 2.5 million people are at risk of arsenic poisoning from drinking water sources, especially ground water. The highest arsenic contamination is found in the delta region. Baseline investigations of the inhabitants’ primary sources of drinking water through face-to-face interviews and the level of arsenic contamination in wells were conducted. This cross-sectional study included 904 households in seven villages in Thapaung Township, Ayeyawady region, Myanmar. Arsenic content was measured by field kit arsenator. In rainy season (June-September), half of the households reported rain water as one of the primary sources of drinking water. Among 181 tube wells, 123 wells (68%) were contaminated with arsenic >50 μg/L.

In total 404(45%) of the households used contaminated wells as their primary source of drinking water, affecting 1704(44%) individuals. A large proportion of the households in the Thapaung region are at risk of arsenic poisoning through drinking water from contaminated tube wells.