MST NEWSLETTER 2018

Technical Report · January 2019

CITATIONS
0

READS
601

7 authors, including:

Choo Hock Tan
University of Malaya
77 PUBLICATIONS **761** CITATIONS
SEE PROFILE

Ruth Sabrina Safferi
Hospital Raja Permaisuri Bainun
2 PUBLICATIONS **0** CITATIONS
SEE PROFILE

Kae Yi Tan
University of Malaya
52 PUBLICATIONS **484** CITATIONS
SEE PROFILE

Muhamad Rusdi Ahmad Rusmili
International Islamic University Malaysia
19 PUBLICATIONS **92** CITATIONS
SEE PROFILE

MST NEWSLETTER 2018

HIGHLIGHTS

2018 is a year of success for the Malaysian Society on Toxinology (MST). The membership is growing, activities are multiplying and outreaching to more people in the region. Besides RECS Malaysia, the region now has RECS Indonesia and RECS Philippines! The much anticipated international symposium of AMSEM 2018 was also held successfully from 23-26 October in Yogyakarta, Indonesia. This issue of MST Newsletters brings you the highlights of the event and other educational information. Enjoy!

CONTENT

Editorial Team:
Tan Choo Hock
Muhamad Rusdi Ahmad Rusmili
Ruth Sabrina Safferi
Michelle Yap
Muhamad Na'im Ab Razak
Tan Kae Yi

Message from the President

Welcome to the 2018 MST Newsletter. This is the second newsletter following our inaugural publication in 2017 to celebrate MST's 25th anniversary.

2018 has been another fantastic year for MST. We have been involved with a significant number of educational events locally in Malaysia and internationally. The highlight of this year's endeavour was the 5th AMSEM 2018 in Yogyakarta, Indonesia. It was the first time AMSEM has been hosted in another ASEAN country besides Malaysia. The road to 5th AMSEM @ Yogyakarta was not an easy one. It was full of challenges and obstacles even up to the last minute. There were many long discussions, sleepless nights and sacrifices and much planning to make it a reality. The close relationships between members of the organising committee plus the hard work, determination and passion have resulted in one of the most successful AMSEMs to date.

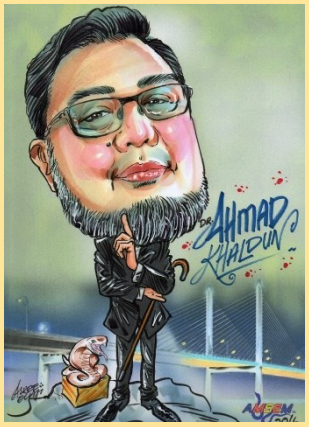
The 6th AMSEM 2020 meeting is expected to be hosted by QSMI in Bangkok, Thailand. It is hoped that AMSEM 2020 will continue to provide the common platform in addressing various issues of envenoming (and poisoning) and improve patients' care.

This year has seen the global initiative at WHO to comprehensively address the snakebite envenoming issues with the formulation of a road map. Three of AMSEM's faculty members have been appointed as Review Advisors to the WHO Snakebite Envenoming Working Group (SBEWG). We look forward to the scheduled release of the road map sometime in 2019.

The year 2018 has also seen plenty of scientific contributions made by MST members. Many are original works and impactful publications. Some of these directly or indirectly addressed the current challenges in clinical management of envenoming. Some were works on the identification and characterization of novel toxins and their possible future applications. Meanwhile, MST has been working very closely with the newly established Toxinology Society of Indonesia (TSI) and provides continuous support to RECS Malaysia, Philippines and Indonesia. We are also working very closely in formulating the ASEAN Fellowship on Clinical Toxinology which we hope will materialise within the next two years.

Finally, I would like to thank our Editorial Board members for their efforts in making our MST Newsletter volume 2 a reality. Kudos to all and happy reading!

DR AHMAD KHALDUN ISMAIL
PRESIDENT
2017-2018



Message from the Editorial Board

Warmest greetings to all.

On behalf of the editiorial team, I would like to thank the Malaysian Society on Toxinology (MST) for having this editorial platform of newsletter for the Society.

This is the second issue of MST Newsletter. In December 2017, the inaugural issue of MST Newsletter was released in conjunction with the 25th MST Anniversary Celebration. Besides printed hard copies, the electronic version of the newsletter has been disributed widely, and is always available for free download from the MST website. The issue contained not only events and activities highlights of the year but also awareness and educational information for public use.

Our first edition received very good comments from local and overseas readers. Certainly, we also appreciate feedback and suggestions. We understand that there is room for improvement and we always strive to do the best for the newsletter for the Society.

In 2018, the Society has shown excellent progress in various aspects. We have seen tremendous growth in the society activities in education, research and collaboration with local as well as international communities. The major achievements included the successful orgnization of AMSEM 2018, and the contribution of MST members as Review Advisors to the WHO Snakebite Envenoming Working Group (SBEWG). We are proud to highlight these achievements in this issue of the newsletter and to congratulate all the members who were involved.

This issue of the newsletter also serves you with news and updates on poisoning or evenoming by marine animals, including stonefish, puffer fish and jellyfish. To entice you to these topics, we have prepared a few articles and awareness posters as well as a cerpen in this issue. Please feel free to share these with others. We hope that the materials are informative, educational and fun to read!

Lastly, I thank the editorial team members for their tireless efforts to make this a success. We also wold like to express our gratitude to Mr Idwal Jones from Hamburg for proofreading the newsletter. Our special thanks go to President Dr. Ahmad Khaldun Ismail for his advice and encouragement.

Feedback and suggestions are always welcome. We thank you for your continuing support.

~Dr Tan Choo Hock


Sabrina


Choo Hock


Na'im


Rusdi


Michelle


Kae Yi

Society corner

Our Logo Our Pride

Red colour: Signifies the potential danger of toxins, which prompts the combined efforts in research and clinical management.

White colour: Indicates the purest intention in seeking knowledge and treating patients; functions as the source of reference in the various fields of Toxinology.

White lines in box: Signifies the journey of gathering knowledge, experience, and expertise, to share them through various educational programs. The lines of knowledge connect the various expertises that drive our passion in the various areas of Toxinology.

Snake, mushroom, jellyfish & scorpion: Representative symbols that reflect the diverse sources of toxins i.e. from various land and marine animals, plants, fungi and microorganisms.

Main activities & services

Remote Envenoming Consultation Services (RECS) is a-24hr 'on-call' consultation service and training provider, mainly but not exclusively, for healthcare providers officially established in early 2012. MST recognized and supported the efforts of RECS. RECS has been a successful example of how management of envenoming and poisoning can be improved through voluntary, well-coordinated expertise offered by emergency physicians with a special interest in clinical toxinology, with the aim to enhance a favorable outcome by optimizing and advocating appropriate treatment modalities at every level of clinical management. The positive impact of RECS Malaysia has motivated the establishment of RECS Indonesia and RECS Philippines.

The society is also actively involved in the construction of Malaysian snake bite management guidelines and provides appropriate feedback to WHO on its roadmap to improve snakebite management globally. The Society also conducts the Clinical Toxinology Educational Program (CTEP) through an educational visit program to antivenom manufacturing facilities, emergency departments and poison centres in the region. The next 3rd CTEP will take place from 31 Jan-2nd February 2018 in Bangkok, Thailand. In addition, the Society is also engaged in various other educational and training programs. For instance, the MST Short Seminar Series and the First Aid Course for Snakebites (FACS) are the society's serial public outreached program to educate the public in venomous snakes and the importance of the right first aid.

The International Symposium on Advanced Marine Animals and Snake Envenoming Management (AMSEM) is the major event organized by the society. This is a grand event that provides international participants with a platform comprehensive enough to share, discuss and debate on topics related to envenoming and poisoning. The year 2018 marked a grand success with AMSEM held in Yogyakarta, Indonesia from 23-26 October. The next AMSEM is set to take place in Bangkok, Thailand in year 2020. This will be a great platform for clinicians, healthcare providers, antivenom manufacturers, academics, scientists and alike to come together to discuss and collaborate for the improvement of envenoming and poisoning management.

Membership corner

Four categories of membership have been offered by MST since 2013:

- Malaysian Ordinary Member (Academic, Scientistor Clinician)
- Malaysian Associate Member (Non-academic/Non-clinician)
- International Associate Member
- Malaysian Student

Membership status: Registered members who renew annual membership with up-to-date payment of the membership fee are considered financially active. Active financial status is required to enjoy the various benefits offered by the Society from time to time, which include entitlement to discount on the registration fee of some courses/activities, complimentary High-Tea at the year-end gathering, a token of membership appreciation for supporting the Society and other activities.

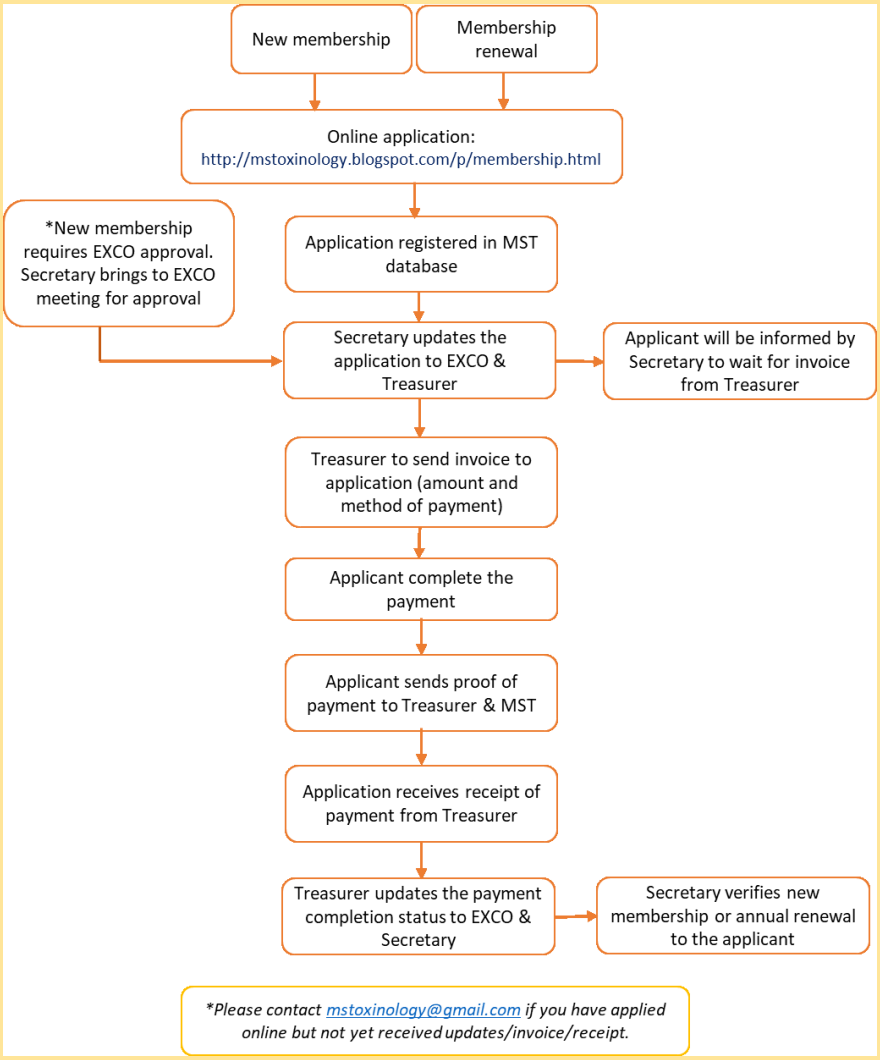
Malaysian Ordinary Members with current financially active membership status are eligible to vote in the AGM, and to hold ExCo positions.

Existing Life Members enjoy the privileges as provided by the previous Constitution of the Society prior to 2013.

At present, there are 38 members registered with MST. The majority of the members are of the Ordinary Membership category.

Information about registration and renewal f membership is available at http://mstoxinology.blogspot.my/p/membership.html.

Application for new membership and annual renewal process:



Update: Please refer to MST website http://mstoxinology.blogspot.com/ (membership) for revised instruction 2019 on smoother processing. Please contact mstoxicology@gmail.com should you need any clarification. (April 2019)

Activities updates (MST & RECS Malaysia)

17 January - Continuous Medical Education (CME) Hospital Shah Alam: Management of Snakebites. Organizer: Department of Emergency & Trauma @ Auditorium, Hospital Shah Alam, Selangor. (RECS: Dr Anisah)

17-18 January - Public Outreach Program: First Aid Course for Snakebite (FACS) & Snake Handling Safety Workshop (SHSW). Hevea KB Sdn Bhd, Lot 177676, Kawasan perindustrian Kanthan 2, 31200 Chemor, Perak. (RECS: Dr Sabrina & Dr Khaldun)

30 January -"Doctor on the Radio" Program (10-11am): First Aid for Bites & Stings from venomous animals. Organizer: Radio Malaysia, Pahang FM, Jabatan Penyiaran Pahang, Jalan Kemunting, Kuantan, Pahang. (RECS: Dr Zainal)

1 March - Public Lecture on First Aid for bites and stings from venomous / dangerous animals in Malaysia. Organizer: CEMACS USM Penang, St John Ambulance Malaysia and MST @ Hard Rock Hotel, Penang. (MST: Mr Kumaradevan)

8 March - USM School of Medical Sciences Clinicopathological Conference (CPC): "The Killer Kisser". Organizer: Department of Emergency Medicine, Hospital USM, Kubang Kerian, Kelantan. (RECS: Dr Shukruddeen)

11 – 14 March 2018 – Imbak Canyon Wilderness First Aid Course. Organizer: Yayasan Sabah Group, Jabatan Kecemasan dan Trauma Hospital Lahad Datu, Sabah, St John Ambulance Malaysia, Malaysian Society on Toxinology, Persatuan Kebajikan Perubatan Kecemasan Pulau Pinang @ Imbak Canyon Conservation Area, Sabah. (MST: Dr Muhammad Na'im Ab Razak & Mr Kumaradevan).

16 March - Continuous Medical Education (CME), Miri Hospital: Guardian of Gunung Murud: Lessons Learnt & Guideline on Snakebite Management. Organizer: Unit Latihan & Pengurusan @ Nurses Home Seminar room, Miri Hospital, Sarawak. (RECS: Dr Noredelina)

17-18 March - 8th Annual Scientific Meeting& Medical Update 2018: "The Deadly Bite". Organizer: Malaysian Medical Association (Pahang Branch & Medical Department Hospital Tengku Ampuan Afzan, Kuantan @ The Zenith Hotel, Kuantan, Pahang. (RECS: Dr Zainal)

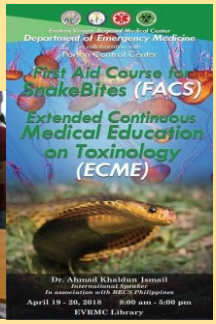
21 March - Public Lecture on First Aid for bites and stings from venomous / dangerous animals in Malaysia. Organizer: CEMACS USM Penang, St John Ambulance Malaysia and MST @ Fisheries Research Institute, Penang. (MST: Mr Kumaradevan)

26 March - 11th MAZPA Conference 2018: Snakebites Management. Organizer: Malaysian Association of Zoological Parks & Aquaria (MAZPA) @ Tanjung Puteri Resort, Pasir Gudang, Johor. (RECS: Dr Khaldun)

4 April - 1st HKL National Pharmacotherapy Updates 2018. Topic: Principles of Snakebite Management. Organizer: Pharmacy Department, Hospital Kuala Lumpur @ Season 2 Hall, Level 1, Grand Season Hotel, Kuala Lumpur. (RECS: Dr Khaldun)

14 April - The Philippine College of Emergency Medicine (PCEM) annual convention: “AccelERate: Driving Growth and Innovation in Emergency Care”. Pre-convention workshop: Introduction to Toxinology: Snakebite and Marine Envenomation and Poisoning Management @ East Avenue Medical Center Auditorium, Manila, Philippines. (RECS: Dr Khaldun)

18-19 April - First aid course for Snakebites (FACS) & eCME. Organizer: Department of Emergency Medicine & Toxicology Unit, Eastern Visayas Regional Medical Centre @ EVRMC E-Library, Tacloban City, Philippines. (RECS: Dr Khaldun)



27 April - Jellyfish Awareness Campaign - Seminar. Organizer: Malaysian Association of Hoteliers (MAH) Penang Chapter & USM @ Bunga Raya Ballroom, Golden Sands Resort, Penang. (RECS: Dr Khaldun)

28 April - 4th Sungai Buloh Prehospital Care Conference 2018: "Poisoning and Overdose, Use of Reversal and Antidote". Organizer: Hospital Sungai Buloh Emergency Department, College of Emergency Physician, Faculty of Medicine UiTM Sungai Buloh @ Auditorium, Faculty of Medicine UiTM Sungai Buloh Campus, Selangor. (RECS: Dr Sabrina)

25 May - UKM UMBI Research Update Series In Molecular Medicine 14/2018: "from Genes to Fangs": Unlocking the Secrets of Snake Venoms Through Integrative -Omics and Pharmacology. Organizer: UMBI, UKM @ Auditorium UMBI, UKMMC, Kuala Lumpur. (MST: Dr Tan CH)

28-29 June - 1st WHO Snakebite Envenoming Working Group Roadmap Meeting: Prevention, Reduction and Control Strategy. Organizer: WHO @ Wellcome Trust Science Media Centre, 215 Euston Rd, London NW1 2BE, United Kingdom. (RECS: Dr Tri Maharani & Dr Khaldun)

16 July - 4th International Table Top Exercise and Communication in Disaster Medicine 2018 (TOPCOM). Preconference Wilderness Medicine topics: Snakebites & Envenoming, Marine animals Envenoming/Poisoning, Arthropods Bites & Stings and Mushroom Poisoning. Organizer: Emergency & Trauma Selayang Hospital @ Auditorium, UiTM, Selayang Campus, Selangor. (RECS: Dr Anisah & Dr Khaldun)

21 July - Public Outreach Program: First Aid Course for Snakebites (FACS) 1/2018. Organizer: RECS@MST. Venue: Department of Emergency Medicine, UKM Medical Centre, Jalan Yaacob Latif, Bandar Tun Razak, Kuala Lumpur. (RECS: Dr Khaldun)


24 July - East Coast Emergency Update. Lecture topic: "Stings and Bites, Do It Right". Organizer : Hospital Tengku Ampuan Afzan, Kuantan @ Bukit Gambang Resort, Kuantan, Pahang. (RECS: Dr Zainal)

25 July - National Wilderness Medicine Training (WMT) 2018. Lecture topic: "Bites and Stings". Organizer: Hospital Selayang, Selangor @ Kem Perah, Forest Research Institute of Malaysia (FRIM), Selangor. (RECS: Dr Anisah)

26 July - Scientific Meeting and National Orthopaedic HOD Meeting: "Managing Snakebite Injury; When to Intervene Surgically @ Everly Hotel, WP Putrajaya. (RECS: Dr Shukruddeen)

4 August - 2nd Sarawak Snakebite Envenoming Management (SEM) Course. Organizer: Jabatan Kecemasan & Trauma Hospital Miri @ Miri, Sarawak. (RECS: Dr Noredelina, Dr Zainal & Dr Khaldun)


6 August - 2018 Emergency Medicine Annual Scientific Meeting (EMAS): "Toxinology: Jellyfish Envenoming in Malaysia". Organizer: College of Emergency Physician, Malaysia and SUCCES Malaysia @ Putrajaya International Convention Centre, Putrajaya. (RECS: Dr Khaldun)


20 August - Safety & Coordination Briefing: Harmful Jellyfish. 4th PASA Penang International Cross-Channel Swim in conjunction with the Asia Pacific Masters Games(APMG) 2018. Organizer: PASA & Majlis Bandaraya Pulau Pinang @ Meeting Room, Penang City Stadium, Penang. (RECS: Dr Khaldun)

21 August- Continuous Medical Education (CME), Penang General Hospital. Topic: Harmful Jellyfish Envenoming Clinical Management. Organizer: Emergency & Trauma Department @ CME Room, Penang General Hospital, Penang. (RECS: Dr Khaldun)

23 August – Kawag Danum Basic Wilderness First Aid Course. Organizer: Kawag Danum Rainforest Lodge, Jabatan Kecemasan dan Trauma Hospital Lahad Datu, Sabah & MST @ Kawag Danum Rainforest Lodge, Sabah. (MST: Dr Muhammad Na'im Ab Razak).


27 August - The Emerging Jellyfish Threat - Seminar. Organizer: Penang Municipal council, USM & Malaysian Association of Hoteliers (MAH) Penang chapter @ Bayview Hotel Beach Resort, Batu Ferringi, Penang. (RECS: Dr Shukruddeen)

1 September - Medical Safety Briefing & Equipment (Medical) Inspection. 4th PASA Penang International Cross-channel Swim in conjunction with the Asia Pacific Masters games (APMG) 2018. Organizer: Penang Amatuer Swimming Association & Majlis Bandaraya Pulau Pinang @ Ocean Green Restaurant, Georgetown, Penang. (RECS: Dr Khaldun)


6 September - Aquatic Life Support (AQLS) 2018. Conference/Workshop: Marine Envenomation Management. Organizer: Aquatic Life Support Society & Emergency Department HUSM @ Auditorium, Department of Emergency Medicine, HUSM, Kubang Kerian, Kelantan. (RECS: Dr Khaldun)


25 September - 1st Negeri Sembilan Snakebite Envenoming Management (SEM) Course. Organiser: Jabatan Kecemasan & Trauma Hospital Tuanku Jaafar @ Seremban, Negeri Sembilan. (RECS: Dr Azhana, Dr Zainal & Dr Khaldun)


26-27 September - 2nd International Conference on Healthcare & Allied Sciences (ICHAS) 2018. "Snake Venom, Antivenom & Clinical Management of Snakebite Envenoming in Malaysia". Organizer: Lincoln University College @ Grand Blue Wave hotel, Shah Alam, Selangor. (MST: Dr Tan CH & Dr Khaldun)

28 September - Continuous Medical Education (CME) Emergency & Trauma Department, Selayang Hospital. Topic: Snakebites Envenoming Management. Organizer: Emergency & Trauma Department @ CME Room, Emergency & Trauma, Selayang Hospital, Selangor. (RECS: Dr Khaldun)


5 October – Ceramah Rawatan Asas Gigitan dan Sengatan Haiwan Berbisa. Organizer: Sekolah Kebangsaan Sepagaya, Jabatan Kecemasan dan Trauma Hospital Lahad Datu, Sabah & Malaysian Society on Toxinology @ Sekolah Kebangsaan Sepagaya, Sabah. (MST: Dr Muhammad Na'im Ab Razak)

23-26 October - 5th International Symposium on ASEAN (Advanced) Marine Animals & Snake Envenomation (Poisoning) Management (AMSEM) 2018 Organizer: RECS Indonesia with the support of MST, TSI, PERDAMSI, IDDI and WESPAC @ Hotel Neo Plus Awana, Yogyakarta, Indonesia.

7 November - Kelantan Snakebite CPG & Envenoming Course 2018. Organizer: Emergency & Trauma Department, Hospital Kuala Krai, Kelantan, Hospital Kuala Krai, Kelantan. (RECS: Dr Shukruddeen, Dr Razak & Dr Khaldun)

17 Novemebr – Awareness program exhibition on World First-Aid Day 2018 at Preclinical Block, Hospital Canselor Tuanku Muhriz, UKMMC, Kuala Lumpur. (MST: Dr Tan CH & Dr Tan KY)

21 November 2018 – Extended Continuous Medical Education (ECME 1): An Overview of Snakebite Envenoming in Malaysia. Organiser: Emergency & Trauma Unit Hospital Tanjung Karang @ Dewan Ibnu Sina, Hospital Tanjung Karang, Selangor (RECS: Dr Azhana).

30 November - 2 December - International Workshop / Seminar for Clinical Toxicology 2018 Organizer: Taiwan National Poison Center @ National Poison Center at Taipei Veterans General Hospital, Taipei, Taiwan. (MST: Dr Khaldun & Dr Tan CH)

11 December - 2nd Melaka Snakebite Envenoming Management(SEM) Course. Organizer: Jabatan Kecemasan & Trauma Hospital Melaka, Perkampungan Hang Tuah, Kampung Jambatan Duyung, Melaka. (RECS: Dr Anisah, Dr Azhana, Dr Khaldun)

15 December - Public Outreach Program: First Aid Course for Snakebites (FACS) 2/2018. Organizer: RECS@MST @ Department of Emergency Medicine, UKM Medical Centre, Jalan Yaacob Latif, Bandar Tun Razak, Kuala Lumpur. (RECS: Dr Khaldun)

22 - 23 December - WMA Malaysia Office - 2 days Alumni Gathering & Refresh Updates: Snakebite First Aid Workshop. Organiser: Wilderness Medical Association Malaysia @The Nest @ MAEPS Serdang, Selangor. (RECS: Dr Khaldun).

29 December 2018: MST End of Year Get-Together High Tea, Delectable HQ Dessert Cafe, Kuala Lumpur.

Activities updates (RECS Indonesia)

10 Januari – Fakulti Universiti Brawijaya, AUnQA Accreditation Lecture, Snakebite management.

22 Januari – Pelatihan penanganan gigitan ular, 3.30 petang, Balai Desa Dlingo, Bantul.


22 Januari – Tawon attack and meeting, Klaten.

16 Februari – Seminar first aid snakebite – Pengenalan jenis ular, konflik ular-manusia, pelatihan penanganan pertama gigitan ular berbisa, 8.00 pagi, Gedung Abri Kota Kediri.


18 Februari – Perasmian dan pelatihan penanganan gigitan ular, 9.00pagi - 12.00 tengahari, Balai Desa Bangunjiwo, Kasihan, Bantul, Yogyakarta.

24 Februari – Seminar ilmiah kedoktoran snakebite – update tatalaksana pasien digigit ular, 8.00 pagi, RS Muhammadiyah Lamongan.


3 Mac – Snakebite first aid workshop, CRC990/EFForTS Office Jambi.

8 Mac – Seminar dan workshop, current management of snakebite, Hotel Frontone Pamekasan.


30 Mac – Penanganan gigitan ular bersama yonif 521 Kediri dan yonif 511 Blitar.

21 April – Symposium dan workshop, update snakebite management wound care management and diagnosis, management of thoracic injury, Grand Hotel, Jambi.


22 April – Sarasehan : Pahami, kenali, dan hindari bahaya ular berbisa, 10.00pagi, Taman Reptil, Museum Komodo, Taman Mini Indonesia Indah.

27 April – Seminar and workshop, pengenalan reptil, eksotis di Indonesia dan penanganan gigitan bisa ular, 2nd Biology Uhamka Festival, Universitas Muhammadiyah Prof Dr Hamka.


11 Mei – Latihan gabungan penanganan kedaruratan / emergency case, untuk damkar Klaten, Magelang, Boyolali, Sukoharjo.

6 Jun – Seminar snakebite management guideline WHO 2016, RS Ngudi Waluyo Wlingi dan RS Mardi Waluyo Blitar.


12 Julai – Sosialisasi snakebite, SLG.

14 Julai – Training snakebite management, PKU Muhamadiyah Bantul.


28 Julai – Sosialisasi first aid for snakebite, car free night.

25 Ogos – Workshop penatalaksanaan gigitan ular, Blitar.

7 September – Kediri creative exhibition, first aid for snakebite, Kediri.

28 September – Snakebite management, Critical care and emergency symposium, Medan.


30 September - Snakebite management, Bandar Aceh.

4 Oktober – Workshop penatalaksanaan terkini gigitan ular, Puskesmas Bandar Batang, Pekalongan.


9 Oktober – Training first aid in snakebite for Batalyon cobra costrad Malang and Balayon India di Balaroa, Palu.

16 Oktober – Sosialisasi snakebite management, Kec Mojoroto.


20 Oktober – Seminar awam jellyfish di Sea World Ancol Jakarta.

21 Oktober – Seminar management snakebite, Universitas Jember, Jawa Timur.

16 November – APAMT 2018 Symposium: Snakebite Management in Asian Countries; New Situation of Snakebite Management in Indonesia @ Prime Plaza Sanur Bali.

19 November – Sosialisasi Snakebite Management, Sanglah Hospital, Bali.


24 November – Seminar dan Workshop Emergency Management Updtae Pre Hospital dan Penanganan Gigitan Ular @ Batang.

25 November – First Aid Saat Digigit Ular @ Jawapos Reptile Supershow, Graha Pena Jawa Pos Lantai 4, Surabaya.


Activities updates (RECS Philippines)

April 14, 2018 - Introduction to Toxinology. Philippine College of Emergency Medicine. East Avenue Medical Center, Quezon City (Dr Khaldun, Dr Patrick Joseph Tiglao, Dr Emelie Santamaria, Dr Kenny Lloyd Taborada, Emerson Sy, Marvin Jay Sarmiento)

April 19-20, 2018 - FACS and ECME for Marine Envenomation, Department of Emergency Medicine, Eastern Visayas Regional Medical Center, Tacloban City, Leyte. (Dr Khaldun, Dr Patrick Joseph Tiglao, Emerson Sy, Marvin Jay Sarmiento, Maria Lourdes Cerence-Agosto, MD, Kenny Lloyd Taborada, MD)

November 17, 2017 and July 15, 2018: Snake 101: Friend or foe (Snakebite Management Protocols). Association of Firearms and Defense Show (AFAD), Megatrade Hall, SM Megamall, Mandaluyong Cit. (Marvin Jay Sarmiento)

August 10 and 11, 2018 - First Aid for Marine Envenomation – CPR (FAME-CPR)
RECS Philippines, Caramoan, Camarines Sur (Patrick Joseph Tiglao, MD, Emelie Santamaria, MD, Marvin Jay Sarmiento)

August 23, 2018 - Snake Bite Management for College of Education Bio Major students CoEd Conference, Catanduanes State University. (Marvin Jay Sarmiento)

August 29, 2018 - Marine Envenomation for College of Education Science Major CoEd Building Catanduanes State University (Marvin Jay Sarmiento)

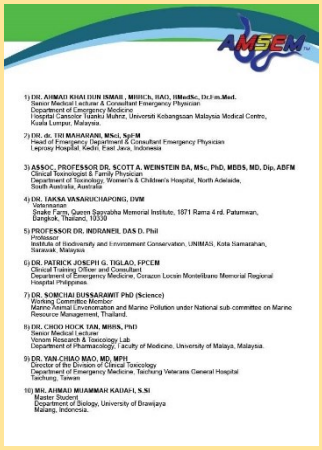
September 17, 2018 - EM Within Your Reach. Department of Emergency Medicine First Postgraduate Course Lecture on Toxinology: Snake Bite and Marine Envenoming (Patrick Joseph Tiglao, MD)

AMSEM Press Release Speech

Press Release Speech

5th AMSEM 2018 Program Director, Dr Ahmad Khaldun Ismail

Welcome to the 5th International Symposium on ASEAN (Advanced) Marine animals envenoming/poisoning and Snakebite Envenoming Management (AMSEM) at Yogyakarta, Indonesia. AMSEM had a humble beginning in Malaysia in 2012 as an international workshop for Advanced Marine Animal and Snake Envenomation Management. Initially annually, followed by every two years since 2014. The recent AMSEM was in 2016 and was rebranded as the 4th ASEAN Marine Animal & Snakes Envenoming management. This year 2018 is the first time AMSEM has been hosted in another ASEAN country besides Malaysia. The road to 5th AMSEM Yogyakarta was not an easy one. It was full of challenges and obstacles even up to last minute. There were many long discussions, sleepless nights and sacrifices and much planning to make it a reality. The person who was instrumental in this success in none other than the champion for Indonesia, Dr dr Tri Maharani. The relentless effort by Dr dr Tri Maharani and the organizing committee signals the significant growth and importance of the AMSEM initiative. The core of any scientific meeting is the content. The success is reflected in the quality and number of scientific contributions (abstracts) and total number of delegates. This year is the highest in the history of AMSEM. This is certainly a special and significant achievement for the collaborating organizations, Indonesia and the region. Congratulations to Indonesia and Dr dr Tri Maharani for all the hard work and determination, the passion and striving for patients' best interest. Envenoming and poisoning from Marine animals and snakes are not well understood by many healthcare providers. Inappropriate clinical management is still been practised by many doctors, especially medical consultants and specialists. Clinical management of animal bites and stings were largely based on anecdotal or dubious claims, which have been passed down from generation to generation of healthcare providers and students. These have significantly influenced the clinical management of envenoming and poisoning resulting in unfavorable and poor outcome including exposing the healthcare providers to medicolegal issues due to clinical negligence. Following the first AMSEM 2012 we realized that there are many serious issues with regards to envenoming and poisoning from toxins in the ASEAN region, especially from snakebite envenoming. It has been 2 years since the last AMSEM meeting. It is hoped that AMSEM 2018 will continue to provide the common platform to address these issues and become an advocate for optimal care, and fight for the best interests of many neglected envenomed and poisoned patients. Hopefully AMSEM will continue to grow and help many more. This meeting will not materialize without your support. Nobody should come or leave empty handed. Sharing is caring and I believe we have surpassed our target. Kudos to all contributors. God speed and enjoy the symposium and related activities. (Speech by Dr Ahmad Khaldun Ismail, AMSEM Director)



Event highlight

AMSEM 2018 – a success of international collaboration in toxinology

Tan CH, Muhamad Na'im, Tan KY (MST)

From 23–26 October 2018, The ASEAN Marine Animals & Snake Envenoming (Poisoning) Management 5th International Symposium (AMSEM 2018) was successfully held at Hotel Neo Plus Awana, Yogyakarta, Indonesia. This international event was organized by Remote Envenomation Consultancy Services Indonesia (RECS) and the Toxinology Society of Indonesia (TSI) in collaboration with the Malaysian Society on Toxinology (MST).

The selection of Yogyakarta as the event venue was an excellent decision as it provides not only lessons in toxinology but also life lessons. This Indonesian royal city on the island of Java, ruled by monarchy has perfect blends of beautiful scenery, mesmerizing art and culture as well as astonishing food. Not to forget: the soft spoken, warm heart and friendly services of the event hosts have captured our hearts.

The program was started with three pre-symposium workshops on 23 October 2018: (A) An Overview of Snakebite Envenoming & Basic Life Support for Envenomation; (B) ECME 2: An Overview of Marine Envenoming & Poisoning; (C) Venomics in Toxinology.

Dr Tri Maharani demonstrating pressure bandage immobilization method on participant.

Symposium Day 1 (24 October 2018)

On 24 October, the ceremony was officiated by the Director of Health Service Quality and Accreditation Board, Health Ministry of Indonesia, drg. Farichah Hanum, Mkes. Representing the government, drg. Farichah Hanum in her speech expressed appreciation of and full support to the programs and activities of AMSEM.

AMSEM 2018 opening ceremony by drg. Fariichah Hanum, accompanied by Dr Tri Maharani and Dr Ahmad Khaldun Ismail.

An MoU (Memorandum of Understanding) was signed between the Health Ministry of Indonesia (represented by drg. Fariichah Hanum), the Toxinology Society of Indonesia (represented by President Dr Tri Maharani) and the Malaysian Society on Toxinology (represented by President Dr. Ahmad Khaldun Ismail) on the agreement for collaboration in education, training and research. Another remarkable event was the launching of the book entitled Land Snakes of Medical Significance in Malaysia as a symbol of knowledge sharing and empowerment of toxinology knowledge. The program continued with the keynote address on Natural Toxins and a series of plenary speeches, a forum discussion on various topics related to marine animal envenomation and management.

Signing of MOU between MST and TSI, endorsed by Ministry of Health Indonesia.

Symposium Day 2 (25 October 2018):

On Day 2 (25 October 2018), the program continued with a keynote address on the use of toxins as anticancer agents and a series of plenary speeches on snake envenomation and management. A focused forum was also conducted on issues, challenges and controversies in clinical management of snakebite envenomation.

Forum on clinical management of snakebite envenomation.

Poster presentations and shortlisted oral and free paper presentations took place on both days of the event. Apart from great keynote and plenary speeches, the success of a conference can be measured by the numbers of high quality research and case presentations. This session has become a platform for researchers and clinicians to share their experience and opinion while treating patients suffering from land and marine animal bites as well as ongoing researches concerning toxinology. Excellent presentations were awarded with prizes. The winners (1st, 2nd and 3rd place) are as follows:

Oral category:

1st Place: John Rathbone (A Retrospective Review of Ambulance Data in the use of Magnesium Sulfate & Morphine Only in Irukandji Syndrome)

2nd Place: Michelle Lyn (Severe Neurological Envenoming from Unidentified Snakebite in a Pregnant Woman)

3rd Place: Dr Luis Edward B Sandoval (Tetrodotoxin Poisoning in Negros Occidental from Puffer Fish: A Case Series)

Poster category:

1st Place: Dr Muhamad Na'im Bin Ab Razak (Chirodropic-Type Lesion Mimicry: When it is not on Hell Fire!)

2nd Place: Dr Muhammad Fakhrruzi (Re-Envenoming Coagulopathy: A Case Report)

3rd Place: Dr Gaurishankar (Non-Invasive Ventilation for Acute Respiratory Failure from Snakebite Envenoming)

Poster evaluation by panelists Prof. Iekhsan Othman (MST) and Dr Patrick Tiglao (RECS Philippines).

On Day 2 evening, the participants had the GALA Dinner at the hotel. AMSEM 2018 is exemplary: it managed to bring all international participants from across the Southeast Asia and countries including Australia, Taiwan, UK together in this gathering. Participants had the opportunity to get to know each other well as they took part in various activities of the night - culture show, dancing, singing, and acting etc., accompanied by a mesmerizing local Indonesian band performance. Two participants also emerged as winners of the Best Dress Award: Dr. Ririek (RECS Indonesia) for the men's category, and Dr. Darrin Kwanhathai (Penang General Hospital) for the women's category!

On Day 3, a special educational program was organized in the morning where participants visited the Biological Museum of Universitas Gadjah Mada in Yogyakarta. Here, we were given the opportunity to learn about Indonesian venomous snake species and sharing experiences regarding snakebite cases in Malaysia, Thailand and Taiwan as well as Australia. Apart from that, this museum also housed a huge exhibit collection of Indonesian animals and plants including extinct species. It is a great place to come and learn about animals if you have special interest in them.

Dr. Francis Bonn (RECS Philippines) leading a dance at the GALA Dinner of AMSEM 2018.

After visiting the Biological Museum, the organizers tookus to Fort Vredeburg Museum to learn about the long history of Dutch colonisation in Indonesia as well as the people's determination to achieve independence.

AMSEM 2018 participants visited the Biological Museum of Universitas Gadjah Mada in Yogyakarta

AMSEM 2018 was successfully conducted from 23-26 October, 2018 at Neo Plus Awana, Yogyakarta, Indonesia. This event was attended by more than 60 participants who were clinicians, healthcare providers, academics, scientists and the like from various countries in the region: Indonesia, Malaysia, the Philippines, Thailand, Taiwan, Australia, UK and so on. Active interaction was engaged in by the participants throughout the event. Active interaction and collaborations in terms of education, training and research were fostered, and it is clear that this healthy growth of friendship will continue to benefit the communities in the region with improved health management of envenoming and poisoning.

All abstracts presented at AMSEM 2018 are published in the Journal of Research Updates in Medical Sciences (RUMeS), accessible through the following link: http://rumesjournal.com/content/abstract-amsem-2018.

Our Prominent People

A talk with Dr Maha

Dr. Muhamad Rusdi Ahmad Rusmilli & Dr. Muhamad Na'im Ab Razak (MST)

An interview was carried out with Dr. Tri Maharani, better known as Dr Maha, the founder of RECS Indonesia and the Toxinology Society of Indonesia (TSI) by Dr Rusdi Rusmilli and Dr.Naim from MST recently.

Dr Tri Maharani (7th from left, in red) and her Indonesian team mates during the 5th AMSEM which took place in Yogyakarta, Indonesia from 23-26 October 2018. Present was drg. Fariichah Hanum (left from Dr Maha) from the Health Ministry of Indonesia.

Dr Rusdi & Dr. Naim: Hi Dr. Maha. Congratulations for the successful AMSEM in Yogyakarta.

Dr. Maha: Thank you. It is great that the event was a success. Thank you very much to all MST members for supporting the event.

Dr Rusdi & Dr. Naim: You are really famous in Indonesia for your works on snake bite management education and prevention. Can you tell us when did you start and why?

Dr. Maha: It begun when I was invited by Dr. Khaldun to attend and share a case report on snake bite envenoming at the first AMSEM that was held in KL in 2012. At that time, I had no idea about the WHO guideline on the management of snake bite. After I presented the case during the conference and received feedbacks from the experts and fellow participants, I realized that the method used for first aid and snake bite management in Indonesia was outdated and against the WHO recommendation. I felt that something needed to be done to educate the medical community and public in Indonesia on the snake bite. Since then, I just keep learning and at the same time, try to convey the right information about snake bite throughout Indonesia.

Dr Rusdi & Dr. Naim: Indonesia is a big country and it must cost a lot to have educational and prevention program in Indonesia. Did you receive any financial assistance to conduct the snake bite education and prevention program?

Dr Maha: Unfortunately, no. I did not receive any financial assistance or sponsorship for the program. I used my own money to support my education and prevention program and my travelling throughout Indonesia. At the moment. I can still afford it but hopefully in the future, the government of Indonesia will see its importance and have a specialized budget allocation to conduct this program. I'm also planning to set up a foundation that will be parked under TSI, so that the education and prevention program can be financed through donations to the society.

Dr Rusdi & Dr. Naim: Not much information is available to the global scientific community on envenoming in Indonesia. What is the current situation for snake envenoming in Indonesia?

Dr. Maha: Indonesia is one of the hotspots for snake bites in the world. The situation is quite concerning as the incidence of snake bites could be over 135,000 per year. Based on our data, Indonesia had 35 reported deaths due to snake bite in 2017 and up to October this year, we already have 25 deaths. Hopefully the number stops there.

Dr Rusdi & Dr. Naim: We heard that you faced a lot of obstacles, other than financial, in Indonesia. What were the obstacles that you faced, and did you manage to overcome them?

Dr. Maha: The biggest obstacle in Indonesia in snake bite management is the unavailability of appropriate snakebite management guidelines in Indonesia. Most of the medical textbooks used as references in Indonesia describe unproven and even dangerous management workflow to treat snakebite. Unfortunately, what is written in these outdated references is used as lecture material in medical schools and a guide to standard operating practice. Not to forget, Indonesia has South East Asian and Australasian venomous species which can be confusing to inexperienced physicians. It is hard to convince fellow medical doctors and specialists to change and correct these practices to be in line with what WHO has recommended. I wrote a proper guideline in 2016 with help from the Food and Drug Division of Indonesia and it has been distributed to all primary health care facilities in Indonesia this year. Based on my experience, Indonesia also has problems concerning education, correct first aid equipment and absence of standardized snakebites management protocols. My team is working to tackle this issue.

Dr Tri Maharani demonstrating immobilization technique in an event in Kediri, Indonesia

Dr Rusdi & Dr. Naim: How was the early response of the medical communities in Indonesia to your effort?

Dr Maha: It is not an easy task to get good response from them. I'm bringing changes to something that has become a norm in the community. I had to do a lot of ground work to achieve the level that I have now. During my early days, many of them found it difficult to accept the methods and ideas that I was advocating. However, it didn't break my spirit or make me sad. It in fact, pushed me to work harder every day. I just keep continuing my training program throughout the country. On some occasions, I even had to purchase antivenom using my own money and argueing with the authority for access to the right antivenom to be given to patients that needed it! Finally, in 2015, all the ground work that I did started to make an impact. The medical fraternities in Indonesia started to participate and the effort spread throughout Indonesia. Even the media started to cover and support my work. My work was featured in

the newspapers, social media and television, nearly every week! Earlier this year, I met the Minister and Vice Minister of Health of Indonesia to discuss envenoming problems. Fortunately, I gained their support.

Dr Rusdi & Dr. Naim: From your point of view, what do you hope to see in Indonesia in terms of the management of toxin-related emergencies, education and prevention in the future?

Dr. Maha: It is my dream to see snake bite and other toxin-related emergencypatients receiving appropriate and standardized treatment. I believe that extensive work in research, education and prevention must be done throughout Indonesia. In order to do that, I hope the Ministry of Health Indonesia, and scientific and medical communities could work together and make this dream a reality. I have faith that we can achieve this dream if we can work together. Furthermore, I hope that Indonesia will have more trained RECS consultants by 2020.

Dr Rusdi & Dr. Naim: Do you have any advice to MST members?

Dr. Maha: I hope that TSI and MST will continue working together in the future, in term of case management through RECS, education and research. We should further expand this field, where not many people are interested and have passion to work in our field. The signing of MoU between TSI and MST shows that both parties are serious in education, prevention and research in the field of toxinology.

Dr Rusdi & Dr. Naim: Thank you for your time, Dr Maha. Hope to see you again in AMSEM Bangkok in 2020 with more updates from Indonesia.

Dr Maha: Definitely. I hope that I can share RECS Indonesia and TSI progress in AMSEM Bangkok 2020. I hope that I can also hear good news and more updates from Malaysia and other countries as well.

Dr Tri Maharani in Irian Jaya, Indonesia.

Educational corner

Stonefish Envenoming

Dr Ahmad Khaldun Ismail & Dr Ruth Sabrina (MST)

Synanceia horrida

http://fishesofaustralia.net.au/home/species/3751#references

Stonefishes (*Synanceia* genus) are members of Synanceiidae family but have also been classified by some as part of the Scorpaenidae family. The 4 species of stonefish that have been described are the *Synanceia horrida*, *Synanceia verrucosa*, *Synanceia trachynis* and *Synanceia erosa*. *Synanceia horrida* is indigenous to the shallow waters of our Indo-pacific region. Stonefish can be found in reefs and shallow marine waters of the Indian and Pacific oceans. Its average length is 15cm, but may attain a length of around 38 cm and weigh about 1.5 kg. They have a mottled brown-green colour with bony eminences and deep hollows around the head, and wart-like bumps on their trunk. They are often covered by a coat of slime to which algae and other organism adhere.

The venom apparatus consists of 13 dorsal spines and 2 pelvic spines. Venom is released from paired venom glands lying in 2 lateral grooves at the base of each spine when mechanical pressure is applied. These venomous spines are not used for hunting and only act as a defensive mechanism.

In this issue, Dr Ruth Sabrina talked to Dr Ahmad Khaldun Ismail, MST President and shared with us knowledge on stonefish envenomation and management.

What are the effects of the stonefish toxins on the tissues? Are there any systemic effects from the stonefish envenomation?

Accidents caused by venomous fish are not infrequent, but only rarely do they cause life-threatening systemic effects. Fatalities are very rare and poorly documented and have generally been attributed to stone fishes (*Synanceia sp.*), particularly by two large and widespread species *S. verrucosa* and *S. horrida*. Envenoming generally occurs as a result of these fishes being stepped upon. However, in Malaysia they are also caught for food and we have encountered several cases of sting envenoming on the fingers and hands from handling the stonefish to be cooked, even from a dead fish. Local effects of envenoming include severe radiating pain, local paraesthesia, progressive painful swelling, tissue necrosis and exposure to wound infection. Systemic effects of the venom are not well documented. The systemic symptoms that have been reported include nausea, vomiting, diarrhoea, increased perspiration, confusion, loss of consciousness, cardiac arrhythmias and paralyses.

Can you share with us the most appropriate and evidence based first aid management in regard to stonefish stings?

Stonefish venom responsible for pain and tissue destruction, is believed to be heat-labile. It is assumed that hot water treatment may inactivate the venom. However, this method is controversial particularly in out of hospital setting, due to the risk of poor temperature monitoring that may cause additional tissue damage. Its efficacy also has not yet been documented in a controlled study. First aid by immersion of the affected extremity in hot water (HWI) between 30 to 45 minutes, especially if immediate medical assistance is not possible, should help reduce the pain. The HWI temperature is approx. 45°C and should be frequently checked in order to avoid burns or inadequate heat. Victims should seek immediate medical care no matter how tolerable the pain is.

How effective is the stonefish antivenom? Is it suitable for use in Malaysia? Are there any other treatments that can be used to treat stonefish envenoming?

It appears that stonefish antivenom is quite effective in providing permanent relief of the intractable pain if given early and in sufficient dose based on the severity. A greater number of stings at significant depth may require higher doses. Mild complaints may not require antivenom. Currently, stonefish antivenom is manufactured by Seqirus Australia. Even though Malaysia has recorded stonefish envenoming cases, there is no move to procure this antivenom yet as most cases were adequately and successfully managed with other treatment methods such as hot water immersion (HWI), opiates analgesia and regional nerve block.

Pain management strategy that can be considered for relieving pain in stonefish envenoming.

What do you expect to see from Malaysian healthcare personnel in terms of management of stonefish sting in the near future?

Knowledge and confidence in clinical management will need to be supported by the appropriate training programs and clinical support from the appropriate experts. These efforts have already been implemented through various RECS@MST programs such as the Extended Continuous Medical Education (eCME) program, Marine Envenoming & poisoning (MEP) courses and AMSEM. I expect a growing interest in this topic and to receive the necessary support from the Ministry of Health in providing training to our healthcare providers.

Synanceia verrucosa

https://en.m.wikipedia.org/wiki/Synanceia_verrucosa

Educational corner

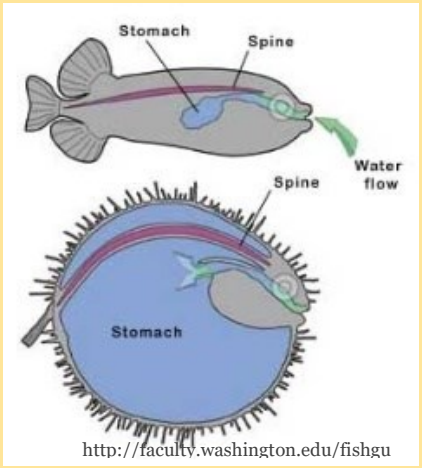
Tetrodotoxin: Inside the deadly delicacy

Dr Tan KY, Dr Tan CH (MST and UM)

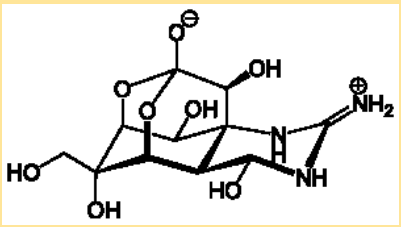
Pufferfish or blowfish (*Fugu* in Japanese) inhabits tropical and subtropical waters worldwide. It belongs to the family of tetraodontidae that has a unique ability to "blow-up" their body into a medium-sized football when threatened.

Some *Fugu* species are equipped with sharp spines covering its body, resulting in the ejection of spines from their skin after quick expansion.

Despite its 'lovely' appearance, *Fugu* is poisonous and consuming it can lead to death.



There are more than 100 species of *Fugu* that have been recognized worldwide and almost all of them contain **TETRODOTOXIN (TTX)** – a colourless, tasteless, odourless toxin that is highly lethal and poisonous to most aquatic and terrestrial life.

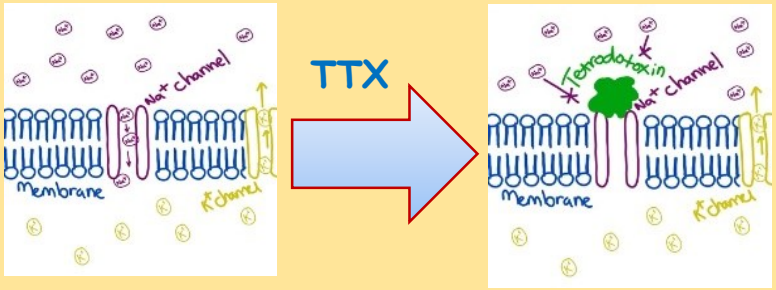


In humans, it is estimated to be **1,200 times** more deadly than cyanide, thus making it the second most poisonous vertebrate in the world.

In fact, this deadly toxin is not produced by *Fugu*, but the marine bacteria living in it. The toxin is produced by the symbiotic bacteria colonizing in the various parts of the inner organs, specifically the **liver, sex gonads**, and **skin**.

Thus, ingestion of tetrodotoxin-contaminated *Fugu* is life-threatening. However, the levels of toxicity are different according to the *Fugu* species, mainly due to the varying types of bacteria with which it is infected or cohabits.

Tetrodotoxin is a neurotoxin, a Na channel blocker, which is important for muscle contraction. Being much larger than the Na^+ ions, the bulk of the molecule blocks the entrance to the Na channel, preventing the flow of Na^+ ions until it slowly diffuses off. Thus, it is capable of shutting down the neurotransmission signal.



How TTX works: Tetrodotoxin inhibits the firing of action potentials in neurons by binding to the voltage-gated sodium channels in the membranes of neurons. The binding causes blockade to the passage of sodium ions into the neurons. Membrane depolarization (rising phase of an action potential) is inhibited. The interruption to the generation of nerve action potential impairs normal transmission of nerve signals.

Symptoms of **tetrodotoxin poisoning** may set in quickly (as rapid as 30 min), starting with paraesthesia and loss in sensation, followed by paralysis of voluntary muscles including diaphragm and intercostal muscle, leading to respiratory arrest and possibly death if left untreated. Not limited to *Fugu*, tetrodotoxin is also found in many other marine animals such as parrot fish, goby, angelfish, blue-ringed octopus and starfish etc.

There is **no antidote** available to treat tetrodotoxin poisoning. Supportive management and assistive devices are used to sustain the respiratory and circulation systems until TTX is fully metabolized and excreted from the body.

Poison, but remains good value for money

Many natural toxins are heat labile; however, tetrodotoxin remains active even with high temperature cooking. But, *Fugu* is a (deadly) delicacy – the inhabitants of Japan have eaten fugu for centuries. In China, pufferfish cuisine was well established by the Song Dynasty and known as one of the 'three delicacies of the Yangtze' (長江三鮮).

The demand for *Fugu* has not stopped even with the risk of poisoning.Instead, it is one of the infamous fish types highly consumed by Japanese, with recorded consumption **up to 10,000 tons** of *Fugu* every year in Japan.

To ensure the safety of consumers, in Japan, the preparation, cooking and serving of *Fugu* is highly regulated. The removal of the toxic parts of the *Fugu* requires a skilful handling by the licensed chef before serving it to the public.

Fugu is an expensive (up to USD$200) local delicacy in Japan. It is partly due to the strict regulation and training required to make *Fugu* safe to be consumed.

"fugu-sashi" "fugu hot pot"

Fugu, Ikan Buntal in Malaysia

In some regions, the awareness of the toxicity of *Fugu* remains limited and scarce, thus contributing to the food poisoning cases. In Malaysia, *Fugu* was considered 'trash fish' (no commercial value) in the past, but it has been reported (2017) that some fishmongers took advantage of escalating fish prices to push potentially neurotoxic pufferfish fillet into the market. Known as *ikan buntal*, the fish was filleted and repackaged into "crystal fish" and sold to some hawkers and restaurants in the northern states. It is believed that the use of *Fugu* fillet to replace the more expensive fishes could reduce the business cost by half. This poses the risk of poisoning to the unwary.

Fun Facts:

- **Why doesn't pufferfish get self-poisoned by its own tetrodotoxin?** *Fugu* has a sequence mutation in the specific sodium channel proteins. Tetrodotoxin is unable to block the sodium ion channel.
- **"Self-inflating" is tiring!** Inflation increases pufferfish's oxygen uptake to five times that of resting levels. It takes ~6 hours to return to normal. This puts it at real danger of predator and other threats. (So don't toy with it just to see how it inflates…)
- **Good news on safe *Fugu* eating**: Tetrodotoxin of *Fugu* are attributed to the deadly TTX synthesized by the symbiotic bacteria in the fish. Scientist in Japan created a non-toxic variety of *Fugu* by restricting its diet, making their bodies born free and clear of the poison tetrodotoxin.

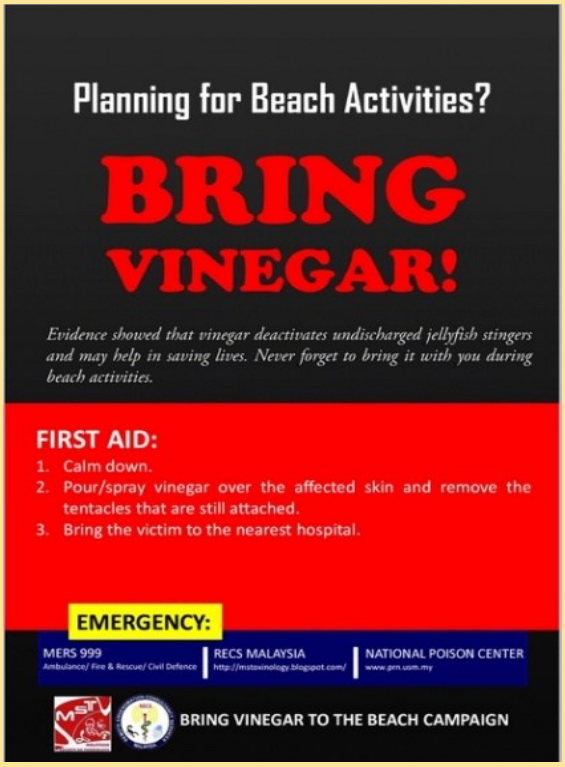
Tips for the public:
- Do not eat the fish after private fishing.
- Avoid purchasing and handling *Fugu* or other unknown fishes by ourselves.
- Ensure that there are qualified chefs in the restaurant before eating puffer fish

Further reading:

Bane, Vaishali et al. (2014) Tetrodotoxin: chemistry, toxicity, source, distribution and detection. Toxins 6,2: 693-755. doi:10.3390/toxins6020693.

Lago, Jorge et al. (2015) Tetrodotoxin, an extremely potent marine neurotoxin: distribution, toxicity, origin and therapeutical uses. Marine Drugs vol. 13,10: 6384-406. doi:10.3390/md13106384.

Awareness corner



Awareness corner

Latest addition of "Dos and Don'ts" flyers - in Indonesian and Philippines languages now

Previous "Dos and Don'ts" flyers available since 2018.

The Dos and Don'ts series represent the outreach effort of MST and RECS in promoting public awareness on what to be done and what to be avoided in emergency situations such as snakebite and jellyfish sting.

The electronic versions of these flyers in different languages can be obtained free from the MST website (http://mstoxinology.blogspot.com/).

Quiz corner

1. Which of the following is the recommended first-aid method for relieving pain caused by stonefish sting?

A. Pouring or spraying vinegar onto the affected limb
B. Immersing the affected limb in hot water for 30-40 min
C. Applying steroidal cream on to the affected limb
D. Squeezing the venom out from the sting site

2. Which of the following is affected by the poison from pufferfish (*Fugu*)?

A. Nicotinic receptor in the skeletal muscle
B. Sodium ion channel in the neurone
C. Calcium ion channel in the heart
D. Cholinesterase in the neuromuscular junction

3. The stonefish releases venom through the venom apparatus that consists of:

A. Flesh
B. Teeth
C. Scales
D. Spines

4. The main stonefish species found in our Indo-Pacific region is:

A. S*ynanceia erosa*
B. *Synanceia horrida*
C. *Synanceia trachynis*
D. *Synanceia verrucosa*

5. The following fact is TRUE about pufferfish.

A. Pufferfish can inflate and deflate its body easily
B. Pufferfish toxin is highly concentrated in the liver, gonad and skin of the fish
C. Pufferfish has a mutation in its nicotinic receptor to prevent self-poisoning
D. Pufferfish toxin can be deactivated by boiling

Answers can be found from the educational & awareness corners in this issue. Prepared by CHT.

WHO – Expert commentaries by MST President

SEVENTY-FIRST WORLD HEALTH ASSEMBLY
A71/17 21-26 May 2018 Geneva

Provisional agenda item 12.1: Addressing Global Snakebite Burden
Expert Comment (Malaysia):

The key areas in which support and assistance is necessary for effective reduction and control of snakebite envenoming in Malaysia are listed below:

(1) to assess the burden of snakebite and, where necessary, establish and/or strengthen surveillance, prevention, treatment and rehabilitation programmes;
- It is assumed that the rate of death from snakebite envenoming in Malaysia is low compared to neighbouring countries such as Indonesia or Philippines. Currently there is no solid data to refer to for snakebites burden in the country (e.g. incidence, adequacy of appropriate treatment, morbidity or mortality). This is due to snakebite incident not yet made mandatory to be reported to the public health services (compared to e.g. dengue fever or food poisoning incidence). The first step to improving this inadequacy in Malaysia is by making snakebite a notifiable disease to the public health authority.

(2) to improve the availability, accessibility and affordability of antivenoms to populations at risk, and develop mechanisms to ensure that additional costs related to the treatment and rehabilitation after snakebite envenoming are affordable for all;

- Malaysia does not manufacture antivenoms. All of its need is imported from manufacturers i) QSMI Thai Red Cross and ii) Seqirus (CSL) Australia. The selection of the appropriate antivenoms is based on the knowledge of local/indigenous snake species of medical significance in Malaysia. The procurement/purchase of the appropriate antivenoms is tailored to individual hospital needs for the antivenoms through the pharmacy unit via appointed supplier/s by the Ministry of Health. The procurement based on the basal stock for the individual hospital needs has reduced the unnecessary purchase of large stocks of antivenoms or inappropriate antivenoms by general instructions from the health authorities (State Health Office).

(3) to promote the transfer of knowledge and technology between Member States in order to improve the global availability of antivenoms and the effective management of cases;

- Malaysia had initiated the antivenom manufacturing program more than 30 years ago. However, due to lack of various elements, this did not materialize and Malaysia resorted to importing its antivenoms needs, which appears to be more cost effective. This also gives the opportunity to strengthen the existing manufacturers to improve production methods and supply high quality products at reasonable cost. Continuing efforts in providing feedback to manufacturers (e.g. reaction to antivenoms) and research on efficacy and cross neutralization of antivenoms in Malaysia needs to be supported. It will require further collaborations between the local researchers (universities), wildlife departments and the Ministry of Health. Results and resources from these efforts can be utilized to further improve the existing antivenom manufacturing and supply, and optimizing clinical management.

(4) to integrate, where possible and appropriate, efforts to control snakebite envenoming with other relevant disease-control activities;

- Snakebite may still be an important occupational health hazard in Malaysia. Though most of the industries relying on manual labour have shifted to be more mechanized/modernized, there are some industries/professions which still need scrutiny for safety requirements in particular the implementation of appropriate safety attire or personal protection devices, safety handling techniques and appropriate first aid. These require continuous awareness campaigns and programs or incentives for workers, and the development of various standard procedure

protocols/guidelines by the industry or relevant authorities. It is interesting to note that a significant number of snakebite incidents in Malaysia (based on RECS consultation data) took place in the house or around/near populated residential areas. Many human activities may have provided a conducive environment for snakes to find food and shelter and to propagate. Public campaigns and education needs to be encouraged in order for appropriate safety (and health) seeking behaviour to become a habit in times of encounter with snakes. Various agencies including the Fire & Rescue Unit and Public Defence Unit are integrated into the emergency call system and are actively involved in rescue activities for snakes encountered in the residencial/populated areas.

(5) to improve access to specific treatment and rehabilitation services for the individuals affected by snakebite envenoming, by mobilizing national resources;

- The modernization of healthcare services in Malaysia, which incorporated the prehospital and emergency medical care, has seen tremendous success in the management and treatment of snakebite envenoming even in remote areas of the country. The Ministry of Health has ensured that medical care is accessible to all. These include the provision of rescue and medevac services being incorporated into the health system. Antivenoms are included in the schedule of compulsory drugs to be stocked in public hospitals (district and tertiary). Appropriate antivenoms can also be transported to the hospital in need in the event of shortages. A support network has been established by the emergency medical care and pharmacy service throughout the country. The utilization of modern communication tools has helped in establishing remote consultation services in order to ensure optimal management for snakebite patients.

(6) to provide training to relevant health workers on the diagnosis and management of snakebite envenoming, with particular emphasis on regions of high incidence;

- This effort and task has largely been taken up by the Remote Envenomation Consultancy Services (RECS) at the Malaysian Society on Toxinology (MST) in collaboration with various agencies and the Ministry of Health. Various training and educational activities have been implemented on a regular basis for the public, first responders and healthcare providers alike. The experts in the field have come together to ensure the appropriate management is practiced and provide the necessary support to healthcare professionals in optimizing clinical management. Recent publication of Guidelines on Management of Snakebite by the Ministry of Health has provided the standardization/ standards for optimal care. Continued support from the Ministry of Health, media and various industries/agencies are needed.

(7) to intensify and support research on snakebite envenoming, particularly in order to develop new tools to diagnose, treat, prevent and measure the burden of the disease;

- This effort and task has largely been taken up by researchers working on Toxinology and Clinical Toxinology in the Universities and the Ministry of Health. Most are members of the Malaysian Society on Toxinology (MST). Over the years, Malaysia has provided substantial contributions on scientific publications in areas of Toxinology and Clinical Toxinology particularly on snake venom and envenoming. More support in terms of funding, research opportunities and collaborations is needed to ensure a healthy growth of knowledge and experience in this discipline. An ASEAN fellowship program on Clinical Toxinology is in the planning stage and will also provide opportunities for research in snakebite envenoming. More young scientists / toxinologists should also be supported and trained to intensify and sustain the research activities on snake venoms and antivenoms in this region. All this clinical and research training as well as educational programs deserve support from the Ministry of Education, the Ministry of Science, Technology and Innovation and the Ministry of Health.

(8) to promote community awareness of snakebite envenoming, through culturally contextualized public campaigns, in support of early treatment and prevention, and intensify community participation in awareness and prevention efforts;

- This effort and task has largely been taken up by the Remote Envenomation consultancy Services (RECS) and Malaysian Society on Toxinology (MST). Engagement with the mainstream media has helped disseminate the correct information and dispel many myths and unsafe practices including visitations to traditional/alternative treatment. Appropriate Safety (& Health) Seeking Behaviour (ASSB) has been the mantra of RECS and MST and incorporated into all activities/programs. Continuous effort and support by all parties are needed. Collaborative efforts, funding and support from government agencies for example the Ministry of Natural Resources and Environment (NRE) have helped boost these efforts through the eBook project and the Malaysian Biodiversity Information System (MyBis)

and MyBis Toxinology. More support from other governmental and non-governmental agencies is needed.

(9) to foster cooperation and collaboration among Member States, the international community and relevant stakeholders in order to strengthen national capacities to control, prevent and treat snakebite envenoming;

- this effort is immortalised and the basis for the International Symposium of ASEAN Marine animals & Snake Envenomation (Poisoning) Management (AMSEM). Many achievements have been recorded by member countries through AMSEM initiative since its inauguration in 2012. The 5th AMSEM will be held in Yogyakarta from 23-26 October 2018 http://mstamsem.blogspot.my This effort was initiated by RECS at MST and has fostered close co-operations in areas of research, training & education and clinical support including cross-border 'sharing' of antivenoms for indigenous and exotic snake species. Remote Envenomation Consultancy Services also has been established in Indonesia and the Philippines with similar mission and objectives. These efforts and successes should be supported and acknowledged.

It is therefore, in my view that Malaysia should support the Draft Resolution and Report by the Director-General presented to the seventy-first world health assembly.

Name: Dr Ahmad Khaldun Ismail
Date: 30 April 2018
President, Malaysian Society on Toxinology,
Senior Lecturer & Consultant Emergency Physician
Department of Emergency Medicine, Hospital Canselor Tuanku Muhriz, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia
Phone (office): +60 39145 5703
Phone (mobile): +60 13327 6273
Email: khaldun_ismail@yahoo.com

Brief Biodata:
https://1drv.ms/b/s!ArjXBiSSPJUSgdJDlGHS7kahAv_QMQ

References:

1. Ismail A.K., Teo E.W., Das I., Vasaruchapong T., Weinstein S.A. (2017). Land Snakes of Medical Significance in Malaysia. Ministry of Natural Resources and Environment, Putrajaya, Malaysia. pp. 52. http://www.mybis.gov.my/pb/1624

2. Das I., Ahmed N., Liat L.B. (2014) Venomous Terrestrial Snakes of Malaysia: Their Identity and Biology. In: Gopalakrishnakone P., Faiz S., Gnanathasan C., Habib A., Fernando R., Yang CC. (eds) Clinical Toxinology. Springer, Dordrecht
https://link.springer.com/referenceworkentry/10.1007%2F978-94-007-6288-6_5-1#citeas

3. Ranjini Sivaganabalan, Ahmad Khaldun Ismail, Mohd Shukruddeen Salleh et al. (2017) Guideline on the Management of Snakebites (in Malaysia). Ministry of Health, Putrajaya. Malaysia.

4. Ahmad Khaldun Ismail (2015) Snakebite and envenomation management in Malaysia. In: P. Gopalakrishnakone et al. (eds.), Clinical Toxinology in Asia Pacific and Africa. 1st ed. Dordrecht; Springer Science+Business Media;. Chapter 4:71-102
http://link.springer.com/referenceworkentry/10.1007/978-94-007-6386-9_54

5. Tan C.H., Tan N.H. (2015) Toxinology of Snake Venoms: The Malaysian Context. In: Gopalakrishnakone P., Inagaki H., Mukherjee A., Rahmy T., Vogel CW. (eds) Snake Venoms. Toxinology. Springer, Dordrecht
https://link.springer.com/referenceworkentry/10.1007%2F978-94-007-6648-8_13-1#citeas

6. Malaysian Society on Toxinology (MST):
http://mstoxinology.blogspot.my

7. Remote Envenomation Consultancy Services (RECS):
http://mstoxinology.blogspot.my/p/recs.html

CERPEN (Short Story)

BISA SI BELUN
Oleh: Dr Jacknaim, M.D.

Jabatan Kecemasan dan Trauma sedikit lengang pada petang itu setelah pesakit terakhir di Zon Merah yang mengalami serangan jantung telahpun dimasukkan ke wad.

Dr Fairuz dan Dr Fariz berasa sungguh lega dan mengambil keputusan untuk melepaskan lelah di kaunter. Dr Fairuz menghirup kopinya yang sudah sejuk, maklumlah dibancuh sejak dari tengah hari tetapi belum sempat diminum.

Dr Fariz pula ralik membelek edisi pertama *Newsletter* yang diterbitkan oleh *Malaysian Society on Toxinology*. Matanya tertangkap pada temuramah di antara editor dan Prof Scott A Weinstein berkenaan dengan sengatan *box Jellyfish*.

Bulan lepas, mereka ada menerima kes sengatan *box jellyfish* di mana seorang budak lelaki disengat hidupan marin itu ketika sedang mandi-manda di bawah rumah mereka. Budak lelaki berketurunan Suluk itu tinggal di perkampungan atas air di Felda Tungku yang terletak kira-kira 60 KM dari Hospital Lahad Datu.

Sewaktu tiba di Zon Merah, dia berada dalam keadaan separa sedar. Pernafasannya laju dan kepekatan oksigen dalam darah cuma 80% sekalipun telah dibekalkan bantuan oksigen menggunakan *high flow mask*.

Hasil konsultasi dengan pihak *Remote Envenoming Consultation Services, RECS,* beliau segera diintubasi dan diberi ubat bius. Pernafasan beliau diambil alih oleh mesin ventilator. Memandangkan Hospitalnya kehabisan ventilator, pesakit malang itu dipindahkan ke Hospital Tawau.

Khabarnya, pesakit mengalami *Acute Respiratory Distress Syndrome, ARDS* yang sangat teruk dan memerlukan bantuan pernafasan menggunakan ventilator berketetapan tinggi. Pesakit turut diberi satu vial serum anti-bisa untuk *box jellyfish* selain daripada rawatan menggunakan *magnesium sulphate*. Syukur, selepas beberapa hari, dia mula menunjukkan respon positif dan dihentikan bantuan pernafasan menggunakan mesin. Hampir seminggu di wad, beliau dibenarkan pulang.

Argh, sekarang sudah bulan Mei. Pada ketika ini, air laut sedikit cetek dan suam-suam kuku. Laut di Lahad Datu memang sangat cantik. Ia dipenuhi dengan terumbu karang yang sangat cantik dan berwarna-warni. Terumbu Karang di sini adalah antara yang terbaik di Malaysia. Ada terumbu karang berbentuk kubis sebesar meja makan, tanduk rusa, kaktus dan lebih dari 100 spesies lain yang sememangnya menggamit pandangan.

Tapi, sekarang adalah musim *box Jellyfish* membiak. Populasi mereka bertambah secara mendadak bahkan boleh ditemui di pesisir pantai. Ia bukan petanda yang baik dan berbahaya kepada para penyelam skuba dan pelancong yang mandi-manda di pesisir pantai.

"Khusyuk betul kau membaca Bang." Tegur Dr Fairuz sambil menghirup kopinya.

"Menarik topik ni. Lagipun releven dengan situasi kita di sini."

"Hurm. Apa yang menarik?"

"Kau tahu, setiap tentakel *box jellyfish* mengandungi beribu-ribu sel penyengat yang dipanggil *cnidocyte* tau. Bayangkan beribu-ribu jarum halus cucuk kita dan seterusnya masukkan bisa dalam badan. Azab bang!"

"Jellyfish lain pun sama juga kan!"

"*Box jellyfish* ni lain. Sekali bisa tu dah masuk dalam badan, memang dia akan serang organ penting terutamanya jantung dan sistem saraf. Sakitnya pula memang sangat azablah!"

"Kan ada *antivenom*!"

"*Antivenom* jarang berfungsi sebab biasanya pesakit tiba ke hospital sangat lambat. Lagipun bang, bukan semua tempat ada. Satu vial dah RM2500.00. Macam kes baru-baru ni, kita tahu sudah terlambat untuk bagi antivenom tetapi kita bagi pun sebab pesakit makin teruk dan itu seperti harapan tipis dan terakhir buat pesakit."

Dr Fairuz sekadar melopong. Masih kurang jelas dengan penerangan Dr Fariz. Dia baru seminggu memulakan tugas sebagai Pegawai Perubatan di sini setelah menamatkan latihan *housemanship* di Hospital Kuala Lumpur.

Tiga loceng berdering nyaring menandakan ada kes di Zon Merah. Kedua mereka segera bangkit dan menuju ke Zon Resusitasi.

"Doktor, pesakit ni Pelahu, umur dalam empat atau lima tahun, perempuan. Dia kena sengat dengan obor-obor tengah hari tadi." Tarmizi, Penolong Pegawai Perubatan yang bertugas di bahagian Triaj menerangkan serba sedikit tentang pesakit.

"Saya triaj ke Zon Merah sebab dia kurang sedar dan tersangat sakit." Tarmizi menyambung.

Dr Fariz menarik nafas panjang.

"Hurm, ni mesti badi sebab kau baca pasal sengatan *box jellyfish* la ni." Sindir Dr Fairuz.

"Dah, jangan perli-perli. Jom buat kerja."

"Ok bang, nak buat apa ni?"

"Elvy, letakkan *Facemask 5L* kepada pesakit. Fairuz kau pasang dua *large bore IV line*. Jazlan pasang *vital sign monitoring*." Arah Dr Fariz. Elvy adalah jururawat di Zon Merah manakala Jazlan pula adalah Penolong Pegawai Perubatan.

"BP 120/80, PR 140, RR 30, SPO2 99% on *face mask* dan *pain score* macam 10/10." Jerit Jazlan.

"Adik, nama siapa?" Dr Fariz cuba bertanya. Kanak-kanak comel itu cuma mengerang kesakitan. Anggota tubuhnya seakan sawan tetapi dia tahu bahawa itu sebenarnya reflek menahan sakit kesan dari bisa sengatan obor-obor.

"Kalau ikut *Barselow tape* ni, berat dia dalam 15 Kg bang." Dr Fairuz yang sudah selesai memasang *IV line* segera menganggar berat kanak-kanak itu.

Dr Fariz membuat penilaian ringkas terhadap mangsa. Terdapat kesan sengatan berbentuk libasan cemeti pada kedua-dua belah kaki, tangan kanan dan punggung kanak-kanak tersebut. Dianggarkan ia seluas 14% *Total Body Surface Area*.

"Ok. Elvy, bagi *IV Morphine 0.75mg bolus*."

"Baik doktor."

"Jazlan, saya mahu kamu ambil cuka makan dan semburkan kesemua anggota badan yang terkena sengatan."

"Baik doktor."

"Fairuz, kau tolong hantarkan darah beliau untuk penyiasatan makmal. Aku mahu *FBC, Renal Function Test, Coagulation Profile, VBG dan CK*. Minta *Chest X Ray mobile* sekali."

"Ok Bro."

Setelah morphine diberi kepada pesakit, Dr Fariz menilai respon beliau. Ternyata ia tidak mengurangkan sedikitpun kesakitan yang dialami. Pesakit masih lagi meronta-ronta.

"Elvy, bagi lagi *IV morphine 1.5mg*."

"Baik doktor."

Dr Fariz keluar mendapatkan ibu pesakit. Sayangnya beliau tidak pandai berbahasa Melayu. Terkial-kial dia mencari staf yang pandai berbahasa Bajau Laut. Golongan Pelahu adalah masyarakat nomad di perairan Sabah, Indonesia, Filiphina dan Thailand. Mereka juga dikenali sebagai *Sea Gypsies* atau Moken. Mereka tinggal dalam perahu yang dipanggil sebagai *kabang* dan menghabiskan sisa hidup mereka di laut. Sepatutnya mereka tidak boleh naik ke darat. Tetapi sekarang, mereka diancam oleh lanun dan penyangak laut menyebabkan mereka mula menetap di pinggir laut lalu mencari pekerjaan di bandar.

“Dia kena sengat dengan obor-obor belun tengah hari tadi. Dalam jam 12 tengah hari.” Kata-kata ibu mangsa diterjemahkan ke Bahasa Melayu oleh Nasiru, Pembantu Perawatan Keluarga di Hospital.

“Kenapa baru sekarang datang? Dah empat jam kena sengat.” Dr Fariz menggelengkan kepala.

“Tiada duit kami, doktor!”

“Jadi, apa yang kamu telah lakukan untuk pesakit?”

“Kami guna pasir dan cuka.”

Dr Fariz menggelengkan kepala. Menggunakan pasir sebagai rawatan pertolongan cemas untuk sengatan obor-obor bukanlah kaedah yang tepat.

“Doktor, pesakit makin tak sedarkan diri. Pernafasan dia pun makin laju. Kepekatan oksigen dalam darah cuma 80%.” Jazlan menjerit.

“Bang, *Chest X Ray* dia nampak macam *ARDS* yang sangat teruk. Putih semacam sahaja paru-paru pesakit ni.” Giliran Dr Fairuz bersuara.

Kes tersebut segara dirujuk kepada RECS melalui aplikasi Whatsapp. Beberapa orang Pakar Perubatan kecemasan memberi pandangan mereka tentang proses rawatan yang patut diberikan kepada pesakit.

Dr Khalid, salah seorang konsultan dalam RECS sedikit emosi. Dia ternyata sedih dengan keadaan pesakit ini. Manakan tidak, mereka baru sahaja menerima perkhabaran bahawa seorang kanak-kanak di Pulau Tacloban meninggal dunia setelah disengat box jellyfish. Dia tidak mahu kejadian sama berlaku kepada pesakit ini. Pesakit ini tidak boleh mati! Dia tidak patut menerima nasib sama seperti kes di Tacloban!

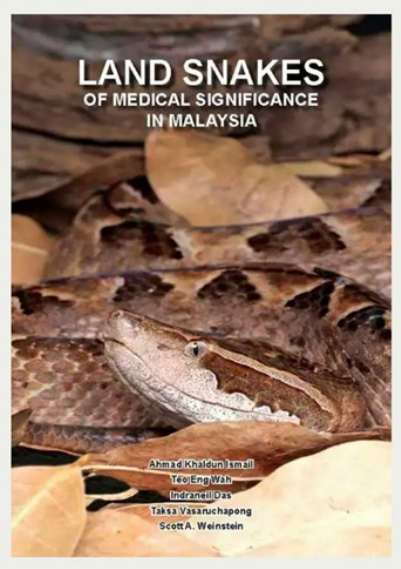
Setelah memikirkan baik-buruk cadangan rawatan untuk pesakit, mereka mengambil keputusan untuk cuba memberikan serum anti bisa untuk *box jellyfish* sekalipun ia sudah terlambat. Selain itu, doktor bahagian kanak-kanak segera dipanggil memandangkan pesakit memerlukan intubasi dan manipulasi mesin ventilator bagi mengatasi *ARDS* teruk.

Seminggu pesakit berjuang di Unit Rawatan Rapi dan dijaga dengan sebaiknya oleh doktor di Bahagian Kanak-Kanak. Akhirnya, pesakit mula menunjukkan respon positif dan kembali sembuh. Dr Fariz kebetulannya bertugas di Jabatan Kecemasan sewaktu pesakit dibenarkan pulang dari wad.

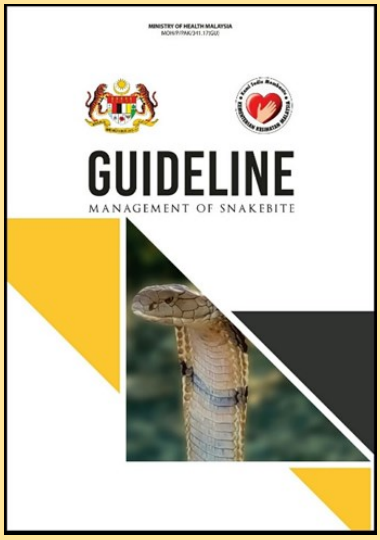
Air matanya jatuh berguguran menyaksikan ibu mangsa datang ke Kaunter Pembayaran bersebelahan dengan Jabatan Kecemasan sambil membawa satu plastik ikan yang baru ditangkap dari laut.

“Doktor, terima kasih kerana menyelamatkan anakku. Ini satu-satunya anak perempuanku. Maaf Doktor, aku tiada duit. Kami orang miskin. Ikan ini sahaja yang kami ada untuk dijadikan bayaran bagi kos rawatan anakku di hospital. Sudilah kamu semua terima kerana ini sahaja yang mampu kami bayar!”

The following publications can be freely accessed online



https://www.mybis.gov.my/pb/162



https://www.researchgate.net/publication/319103821_Guideline_on_the_Management_of_Snakebites

The Official Program Manager for Malaysian Society on Toxinology