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SLMA President

Dr. Padma Gunaratne
MBBS, MD(SL), FRCP (Edin, Glasg, Lond), FCCP, Hon FRACP, FAAN, FWSO
President, Sri Lanka Medical Association

Etiquette in Medical Practice: A Forgotten Entity?

"During my own recent hospitalization, I found the Old-World manners of my European-born surgeon, and my reaction to them, revealing in this regard. Whatever he might actually have been feeling, his behaviour, dress, manners, body language, and eye contact, were impeccable. I wasn't left thinking, "What compassion." Instead, I found myself thinking, "What a professional," and even (unexpectedly), "What a gentleman." The impression he made was remarkably calming, and it helped to confirm my suspicion that patients may care less about whether their doctors are reflective and empathetic than whether they are respectful and attentive."

*(*Kahn MW. Etiquette-based medicine. N Engl J Med 2008;**358**:1988-89)*

The Oxford dictionary defines 'etiquette' as "the customary code of polite behaviour in society or among members of a particular profession or group". Practice of 'Etiquette-based Medicine' is as old as the Hippocratic Oath.

In Sri Lanka, patients rarely, if ever, complain about the competencies of doctors. Criticism is often about their behaviour. Patients say that doctors do not look at their faces, or smile, or allow them to express themselves well, or pay due attention to all of their complaints or spend adequate length of time with them. This list could be even longer.

Within the profession, there is an accusation against the medical schools for not training the doctors in this aspect. According to a psychiatrist*, compassion-based medicine' is difficult to 'teach' while etiquette is easier because *"it's simpler to change behaviour than attitudes"*. Most medical faculties do make an effort to 'teach' etiquette, yet the practice of etiquette is not well reflected among doctors.

The practice of proper medical etiquette involves not only the patients and their relatives but also co-workers, colleagues, and society at large. It is not a practice that the lack of which can be challenged in a court of law but it can simply make the consultation a pleasant experience to all others involved including the doctor himself or herself.

Appropriate attire while on duty, greeting the patient, smiling when appropriate, welcoming any relatives attending, introducing anybody present with the doctor such as a trainee, and requesting the patient's consent for their presence are a few simple things that all of us can practice. Telephone calls are a major disturbance to consultations and therefore the doctor should reduce the length of such calls and apologise to the patient for the interruption. Sometimes, indication to the patient that it is an important call would suffice and please the patient and relatives as well. **What is mostly neglected is the respect and sensitivity towards the values of patients' time and their other obligations and commitments**. Late arrival, for whatever reason, should be acknowledged with an apology. In the eyes of a patient, it is one of the nicest forms of behaviour.

It is also the responsibility of the doctor that his or her staff members are properly attired and behave in a professionally acceptable manner. Any issues or lapses on the part of the staff should be handled tactfully, without causing any embarrassment to either party. The use of the mobile phone by staff, while attending to patients, should be discouraged as much as possible.

Medical etiquette towards colleagues, irrespective of the hierarchy, is very important in day today practice. For example, when a referral comes from a general practitioner, specialists at the receiving end should be humble enough to reply back with a thanking note and provide advice on future management of the patient. If a patient expresses his or her displeasure as to how that patient was treated by a colleague of the doctor or a colleague's apparent mistakes during a consultation, a doctor should act professionally and appropriately, perhaps with appropriate body-language (E.g.: need not go out of the way to defend the colleague without knowing the correct facts or take an active part in the criticism). Unfortunately, there are many anecdotes of specialists criticizing the treatment given by the family doctor with the patient but end up prescribing similar medicines in brand names. This ultimately leads to family doctors referring patients only to their friends but not to the most appropriate specialist or the most convenient and cost-effective choice for the patient.

Etiquette-based medicine is more about behaviour and character development. Professionalism and ethics are key components of it too. It ultimately leads to higher patient satisfaction. So let's emphasize on good behaviour within the profession, and allowing our patients to ponder 'What a gentleman, (or a lady), my doctor really is'!

Editor-in-Chief
Professor Hasini Banneheke,
MBBS (SJP), Pg Dip Med Micro (Col), MD-Med Parasitoloy (Col)

President's Message

May 2021 was an important as well as a historic month for the Sri Lanka Medical Association. For the first time in its history, SLMA was able to bring all leading doctors' associations onto a single platform demanding the Government of Sri Lanka to seriously consider declaring a lockdown as an immediate measure to control the rapidly escalating number of cases of COVID-19.

The government quickly acceded to our demand. By the time the lockdown was declared, the number of admissions to hospitals was exceeding the capacity of the wards and ICUs allocated for COVID-19. Any further delay in implementing the lockdown would have pushed the health system to a calamity and a state of collapse. As the President of the SLMA, I appreciate the support extended by the GMOA, the AMS, and the SMIC for the collective effort for which the response from the Government was praiseworthy.

Since then, we are supposed to be in a lockdown right up to the time that this message is written. However, I doubt whether we really are in a lockdown as it appears that many activities are being continued. Many vehicles and people are on the move, particularly in leading cities.

This half-hearted lockdown is necessarily and undoubtedly going to affect the final outcome on the control of COVID-19 in no uncertain manner. How people could be kept under a lockdown for four weeks or more also needs attention. That will affect them both economically and psychologically. We are glad that public transport which could be a "super spreader" of COVID-19 was stopped as well as gatherings such as weddings and other parties.

The vaccination programme is also being continued, unhindered by the lockdown to a certain extent. It is relevant that all understand that there is no other way out for Sri Lanka other than controlling COVID-19. The people of Sri Lanka would be sick and there will not be tourism or employment abroad unless COVID status in Sri Lanka is brought under firm control. These are the leading income generators to the Isle.

Despite restrictions on in-person activities, we are glad that the prevailing situation in the country led the SLMA to move forward as a truly national organization. The recommendations given by the SLMA have had a seminal impact on the Government arriving at decisions of national interest. There is an unprecedented level of interest in the media on the SLMA statements. The SLMA Saturday talk, which is a brainchild of mine, has been well received by all medical students island-wide. The average number of participants exceeds 1000 per session in general. SLMA is now known as a leading professional organization of doctors to each and every citizen of the country.

'SLMA COVID සහන' is the latest welfare project established by the SLMA to support Government hospitals with facilities they are short of, to uplift the care given to COVID patients. The සහන project has reached each and every corner where there is a well-wisher for COVID patients in Sri Lanka. SLMA has already received more than 10 million within lesser than a month of establishing the project. We are planning to donate goods worth of around 6 million to Government Hospitals over the next four weeks. The flyer of the සහන project is published in this Newsletter and I invite all members to share the flyer with their family and friends and to support the project to the best possible.

State-of-the-art facilities available at the SLMA auditorium allow the SLMA to join and develop a healthy rapport with all its members island-wide. Along with the new facility enabling the members to obtain membership of the association online, I believe that the target of the numbers of new members that we planned to have could easily be achieved by the end of this year.

SLMA wishes to physically meet all members during the Anniversary International medical Congress.

Looking forward to meeting all of you at the BMICH from 21st – 24th September 2021 during the annual conference.

With best wishes,

Dr. Padma Gunaratne
MBBS, MD(SL), FRCP
(Edin, Glasg, Lond), FCCP,
Hon FRACP, FAAN, FWSO
President,
Sri Lanka Medical Association

Activities in May and June 2021 at a Glance

By Dr. Sumithra Tissera, Hony. Secretary of the SLMA

10th May

The SLMA team led by Dr. Padma Gunaratne, President, met HE the President. Others included in the team were Prof Jennifer Perera, Consultant Microbiologist, Dr. Manilka Sumanathilaka, Consultant Endocrinologist, Dr. Harsha Sathishchandra, President, College of Internal Medicine, Dr. Thamasi Makuloluwa, President, College of Anesthesiologists, and Dr. Ruwan Ferdinando, a representative from the College of Community Physicians.

The team highlighted that the escalating number of COVID -19 cases was a matter of grave concern and convinced the Government of the need to implement strict mobility restrictions.

20th May

The monthly clinical meeting for May was conducted with the collaboration of the College of Internal Medicine on "Medicine". It was conducted over three sessions.

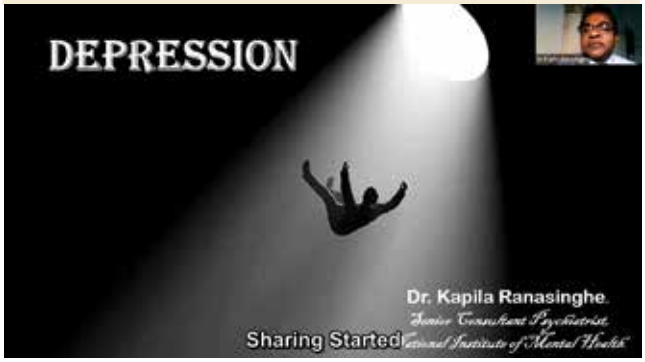
In the 1st session, there were lectures on High Blood Pressure by Dr. Ganaka Senaratne, Specialist in Internal Medicine, TH Karapitiya, Hyperglycaemia by Dr. Suranga Manilgama, Specialist in Internal Medicine, TH Colombo North, Patients on Antithrombotics, Professor Lalindra Gooneratne, Professor in Haemotology, Faculty of Medicine, UoC & Professor Namal Wijesinghe, Professor in Medicine, KDU.

2nd session was a round table discussion/ MDT. Dr. Harindra Karunathilake, Specialist in Internal Medicine, and Dr. Visakha Rathnamala, Consultant Haemotologist, NHSL discussed 'An Unusual Case of Multiple Myeloma', Dr. Piyamali Jayasekara, Specialist in Internal Medicine, KDU, Dr. Duminda Munidasa, Consultant in Rheumatology & Rehabilitation, TH Colombo North, Dr. Dharshana Sirisena, Consultant Neurologist, TH Colombo North, on 'Woman with walking difficulty, Dr. Kumudini Jayasinghe, Specialist in Internal Medicine, TH Kandy & Dr. Chandrike Ponnamperuma, Consultant Cardiologist, NHSL on 'Bleeding & Chest Pain in a patient with a prosthetic valve' & Dr. Thushara Mathias, Specialist in Internal Medicine, University of SJP, Dr. Chamara Rathnayake, Consultant Cardiologist, Asiri Hospitals & Professor Shehan Williams, Consultant Psychiatrist on 'Day to Day clinical dilemmas through case scenarios'.

3rd session was a case discussion. Professor T Kumanan, Professor in medicine, University of Jaffna discussed Hypertension and altered mental state, Dr. Wimalasiri Uluwattage, Specialist in Internal Medicine, TH Karapitiya on Leptospirosis – Pulmonary Haemorrhage, Dr. Ananda Wijewickrama, Specialist in Internal Medicine, IDH on Complicated Dengue Fever & Dr. Manilka Sumanathilaka, Consultant Endocrinologist on Management of Recurrent Hypoglycaemia in Diabetes.

Around 800 persons joined online.

22nd May



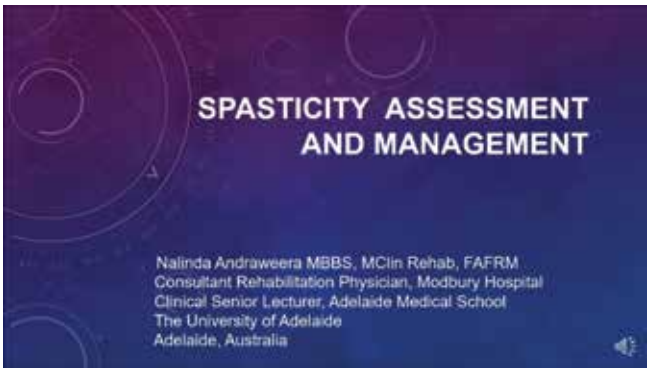
The seventh SLMA Saturday Talk on Depression was conducted by Dr. Kapila Ranasinghe, Senior Consultant Psychiatrist, NIMH.

The online participation was more than 900. It was live-streamed via Facebook as well.

23rd May

29th Annual Career Guidance Seminar organized by the Expert Committee on Health Management of the SLMA for junior doctors was held as a virtual event with the participation of more than 600. Many consultants from all specialized fields of medicine introduced their discipline as a career to the doctors.

25th May



The Expert Committee in Medical Rehabilitation organized a guest lecture on Assessment & Management of Spasticity for Consultants and Trainees in Medical Rehabilitation, Rheumatology, Neurology, Therapists, and Nurses. The lecture was done by Dr. Nalinda Andaraweera, Senior Consultant Physician in Rehabilitation Medicine, Modbury Hospital, Adelaide, Australia.

There were around 75 persons actively participating in the discussion joining online.

25th May

SLMA COVID SAHANA was launched with the participation of around 50 persons, both SLMA council members, and well-wishers.

28th May

SLMA Webinar Series 5 on "Update on COVID-19: Interactive Session for Public Health Officers" was held with the online participation of more than 100 (doctors/ PHIs & MHMs). The resource persons for

the seminar were Dr. Upul Dissanayaka, Consultant Physician, NHSL, Dr. Dulmini Kumarasinghe, Consultant in Rabies & Vaccinology, MRI, and Dr. Athula Liyanapathirana, Consultant Community Physician, Epidemiology Unit, MoH. A very interactive session followed.

29th May

The eighth SLMA Saturday Talk on Clinical Management of an elderly male with lower urinary infection was conducted by Professor Srinath Chandrasekara, Consultant Urological Surgeon.

It was attended by more than 950 participants. It was live-streamed via Facebook as well.

31th May

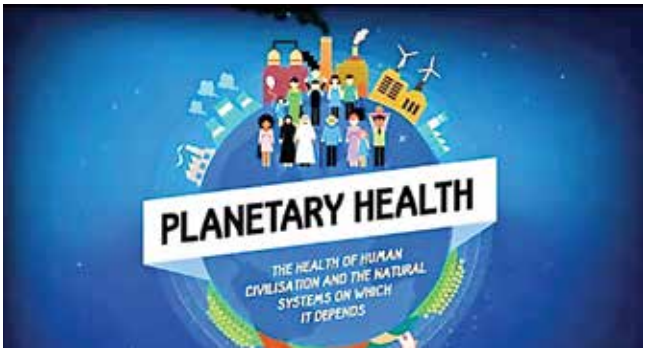
President, SLMA participated in a meeting on Supporting Stroke Care Improvement in Nepal and Sri Lanka organized by the SEARO of the WHO.

1st June

The seventh media seminar on "Challenges Faced by Pregnant Mothers & Children during COVID" was organized jointly with the Sri Lanka Press Institute.

The resource persons for the seminar were Dr. Indika Boteju, Consultant Physician, CSHW, Dr. Mayuramana Dewolage, Consultant Obstetrician & Gynaecologist & Dr. Channa de Silva, Consultant Paedeatric Pulmonologist, LRH.

There were around 150 media personnel and others who followed the webinar.



5th June

The ninth SLMA Saturday Talk on Growth in Children was conducted by Professor Githanjali Sathiadas, Professor in Paedeatrics, University of Jaffna.

It was attended by more than 900 participants. It was also live-streamed via Facebook.

6th June

SLMA Young Members Forum organized a webinar to commemorate World Environment Day on the 5th of June.

The topic of discussion was on X Press Pearl Vessel Fire: Impact on Environment & Health.

The resource persons were Mr. Ashoke Weerakoon, Scientist, NARA, Professor Enrique Barros, Chair, WONCA Working Party on Environment & Professor Sevvandi Jayakody,

Department of Aquaculture & Fisheries, University of Wayamba.

There were around 150 online participants.

COVID related activities during May – June 2021

8th, 13th & 18th May

Dr. Padma Gunaratne attended the meetings of an Independent Expert Group convened by the WHO, Sri Lanka office.

17th May

Dr. Padma Gunaratne attended a meeting of the COVID Task Force at the Presidential Secretariat. Drs Padma Gunaratne & Kapila Jayaratne attended a meeting to discuss Rural Level Monitoring of COVID – 19 with Hon. Minister of Sports & Youth Affairs, Mr. Namal Rajapaksha.

19th May

A letter was sent to HE the President requesting to extend the highest level of attention towards COVID-19 containment.

This letter was drafted after much deliberations and discussions between the SLMA council, SMIC members, GMOA & the AMS.

18th & 31st May

Several discussions were held with the participation of the SLMA council, SMIC members, GMOA & AMS on the issue of the increasing number of cases and deaths and the overburdening of the health system in the country.

2nd June

A subsequent letter on the Mitigation of COVID 19 infection in Sri Lanka and requesting an extension of the lockdown was also sent to the HE President.

3rd June

A meeting to discuss COVID – 19 was organized by SEARO – Delhi. President, SLMA was requested by WO, Sri Lanka office to make a presentation on the Sri Lanka situation at its meeting. Many activities with the press were done during the reporting period – sharing press releases, press briefings at SLMA with the participation of many experts, and participation at TV programmes/ radio talk shows.

MV X-press Pearl Vessel in Fire
(Photo courtesy - groundviews.org)

The X-Press Pearl Fire; Health Perils to the Pearl of the Indian Ocean

Dr Sankha Randenikumara
Chair – SLMA Young Members' Forum
Prof Enrique Falceto de Barros
Chair – WONCA Working Party on the Environment

The human population is healthier than ever before, with increased life expectancy, decreased poverty, decreased child mortality, etc. However, to achieve this status we have exploited the planet's natural systems to an extent unprecedented in human history which is evident by increased carbon dioxide emission, ocean acidification, high energy, and water use, unlimited usage of artificial fertilizer, and deforestation. By understanding the growing threat represented by our own activities to human health, the concept of "planetary health" was put forward by the Rockefeller Foundation in 2015. The definition of Planetary Health is 'achievement of the highest attainable standard of health, wellbeing, and equity worldwide through judicious attention to the human systems—political, economic, and social—that shape the future of humanity and the Earth's natural systems that define the safe environmental limits within which humanity can flourish. Put simply, planetary health is the health of human civilization and the natural systems on which it depends.

Ocean represents the origin of life. Oceanic disasters could be natural or man-made with direct and indirect impacts on human health. The Indian Ocean region is sometimes called the "world's hazard belt" as it is prone to disasters, both the above categories. Recently reported fire on the MV X-press Pearl Vessel is one of such anthropogenic hazards, probably the biggest one we have ever experienced in Sri Lankan waters. This Singapore-flagged cargo vessel is said to be carrying a consignment of hazardous chemicals including nitric acid, ethanol, lead ingots, dust urea, frilled urea, high density, and low-density polyethylene epoxy resins (including plastic nurdles), sodium methoxide, caustic soda, aluminum processing by-products, raw materials for cosmetics, food items in addition to the 300 tonnes of bunker oil. The sinking of the ship and the resultant release of the chemicals will give rise to several long-term human health-related issues beyond the most visible short-term effects, in addition to the serious risk to the ocean and the coastal ecosystem.

Out of all chemicals in the ship, heavy metals could have significant long-term issues mainly by bioaccumulation. Metallic lead is stable and not poisonous, but in high temperatures and when it reacts with other chemicals it transforms into bioavailable compounds. Unfortunately lead reacts vigorously with nitric acid and strong oxidizers which were

found in the containers carried by the vessel. Thus there is a high chance of the lead ingots converting into lead salts due to chemical reactions and the fire contaminating the seawater. Lead compounds are not particularly mobile in the aquatic environment but can be toxic to organisms, especially fish, at low concentrations. The pH values of water and dissolved organic carbon content are the factors that regulate the degree of toxicity. Lead bioaccumulates in plants and animals in both terrestrial and aquatic environments. The kidneys, blood, gastrointestinal tract, respiratory system, reproductive system, and central nervous systems can be adversely affected by concentrating lead in the body. Brain damage caused by lead is significant in affecting cognition, executive functions, fine motor skills, and decreased IQ. Moreover, chronic exposure to lead could also lead to prematurity, low birth weight, and neural tube defects, and many other complications in children.

Nitric acid has been identified as one of the main chemicals in this ship, which would have directly mixed with seawater and caused ocean acidification. Ocean acidification has been identified as a factor that causes the bioaccumulation of toxic organic compounds along the food chains.

Plastic nurdles were one of the most visible pollutants seen in the coastal line after the X-press Pearl disaster. Nurdles, also known as "pre-production pellets," are small pellets of plastic resin that serve as raw material for manufacturing everyday plastic products. These lightweight pellets are also a major source of microplastic pollution. Microplastics are ingested by many species of marine fauna including fish and shellfish. Because microplastics are associated with the absorption of chemicals from the surrounding environment, there is concern regarding physical and chemical toxicity. Evidence regarding microplastics is now emerging, suggesting harm to human health.

General public is concerned mostly about the edibility of fish, other seafood, and even salt in the current context due to the opinions of the gossipmongers and self-appointed experts! Reports say about visible damage to the sea wildlife including fish, turtles, and dolphins who have been washed up dead on the beaches probably due to the direct effect of the chemicals. Fortunately, those contaminated fish would not come to the market, as the fishing activities in the seas off Wadduwa to Negombo have been suspended following the disaster. Hence, seafood currently available in the market seems to be safe to consume as they originate from remote seas. Small fish and other animals might die quickly due to the above-mentioned toxins, but not the larger ones. Instead, feeding on smaller fish and seaweeds, the chemicals will slowly bioaccumulate in their bodies and along the food chains. Certain chemical compounds do not have geographical boundaries. They will be carried by wind, waves, and currents to the far away areas as well causing the aforementioned bioaccumulation. Thus, it is evident that rather than short-term consequences, there could be a considerable long-term impact (which could be forgotten soon by many) on our seafood plate. We believe that the government should be guided by the scientific community to minimize the inevitable harm that could be caused to the prime protein source of Sri Lankans. Then what about salt? It is obvious that salt available in the market has been produced sometime back, so there is no need to panic.

Navy removing debris (Photo courtesy - BBC)

A crab watching the plastic nurdles scattered throughout the beach *(Photo courtesy - i.insider.com)*

Not all the salterns are located in the vicinity of the epicentre of the incident, leaving negligible direct effect from the chemicals.

Furthermore, the air pollution that resulted from this fire should not remain unaccounted for. Ambient air pollution is estimated to cause over 4 million premature deaths annually, and even small increases for short periods (days) can significantly increase morbidity (e.g. asthma emergency visits) and all-cause mortality.

Whilst concentrating on the above obvious health issues related to the contamination of the marine environment and bioaccumilation of chemical pollutants, an important aspect that should not be forgotton is the mental health issues related to major maritime disaster. We are certain that most of us are part of this, as many were shocked to witness this unprecedented incident, and special populations like pregnant mothers are alarmed by various rumors on social media. But communities like fishermen whose livelihoods have been affected by this disaster, coastal inhabitants who were hurried up to salvage the landing debris, and the rescue teams and beach cleaners including naval forces who handle potentially toxic material are specifically vulnerable to such psychological trauma. According to the previous global experiences, they are more prone to get depression and posttraumatic stress disorder (PTSD) following such incidents following such incidents, which highlights the importance of psychological support.

Photo courtesy - Lakruwan Wanniarachhi AFP via Getty Images)

In conclusion, this shipwreck has caused significant harm to Sri Lankan people and to the ecosystems that sustain life. The attention and lessons from the COVID-19 crisis must be garnered to effectively deal with this disaster of planetary proportions. This tragedy is a symptom of our times and beyond remedying. We must make sure we take all possible preventative measures to avoid new tragedies of this nature as the magnitude of damage caused by such callous actions may have long-term repercussions as discussed above. We cannot expect the delicate balance of life and nature to absorb all anthropogenic harms without consequences.

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"Airborne micro-plastics and COVID-19 Transmission"

Dr. Sajith Edirisinghe
Lecturer and Clinical geneticist, Department of Anatomy, Faculty of Medical Sciences, University of Sri Jayewardenepura.

Figure 01: Disposal of PPEs without care *[Source - www.arabnews.com]*

What are Micro-plastics and Nano- plastics?

Microplastics (MPs) and Nano-plastics (NPs) refer to the fraction of plastic that is released into the environment through various environmental or human processes. These MPs particles range from 1 micrometer (10-6m) to 5 millimeters and those that are smaller than that (< 1 µm scale) are called Nano-plastics.

How are micro-plastic/nano-plastic materials added to the environment?

There are several ways in which these MPs/NPs can be added to the environment. For the study purpose, the MPs/NPs are divided into two parts. These are primary MPs/NPs and secondary MPs/NPs.

Primary micro-plastics

Primary MPs are plastics that are manufactured in sizes less than 5mm and released to the market. For example, small plastic beads used in textiles, tiny plastic beads found in face washes/toothpaste/shower gels, belong to this category. Without our knowledge, these tiny plastic particles flow through drainage lines and eventually enter the sea. A recent study has shown that in one wash alone, up to 100,000 MPs/NPs, molecules are released into the environment(Napper et al., 2015).

Secondary micro-plastics

This category includes plastics that are released to the environment after being used once (plastic drink bottles, straws) or several times (plastic pans). These plastics get continuously broken down into very small pieces [eg:- biodegradation (the action of living organisms – crushing), photo-degradation (light radiation from sunlight), thermo-oxidative degradation (slow oxidative breakdown at moderate temperature), thermal degradation (high temperature – the burning of plastics)]. Furthermore, nylon clothing releases these secondary micro-plastics as fibers into the environment.

Excising Knowledge on Transmission of COVID 19 and Use of Plastics

According to the World Health organization as of 4:43 pm CEST, 6th May 2021, there have been 155,665,214 confirmed cases of COVID-19, including 3,250,648 deaths worldwide (World Health Organization, 2021). The spread of the COVID 19 virus is accelerated by the environmental temperature below 20°C (Chennakesavulu and Reddy, 2020). Still, the world is seeing the tip of the iceberg of this issue. The transmission pathways for this COVID 19 in environmental media have not been fully understood. At the beginning of the COVID-19 outbreak in late December 2019, it was found that it originated from animals, and was then transmitted to humans at a wet market in Wuhan, China.

Subsequent research has shown that the COVID-19 infection is spread in the community via respiratory droplets.

Touching a surface contaminated with the virus and then touching the mouth, nose, and eyes is another mode of transmission(Kraemer et al., 2020).

Also, researchers have found that the use of disinfectants or wash hands with soap could kill the coronavirus present on human skin and environmental surfaces(Kraemer et al., 2020). Many researchers have shown that the inhalation of aerosol droplets containing the virus is one of the most important pathways of spreading the COVID-19 (Hsiao et al., 2020, Liu et al., 2020, Morawska and Cao, 2020).

Wearing face masks, hand washing, maintaining social distancing and the use of personal protective equipment (PPE) are effective methods to prevent the spread and get in contact with the virus(Kraemer et al., 2020).

Plastic & COVID 19

With the development of the COVID 19 in late 2019, the usage of face masks, face shields gloves, and PPE increased drastically. Plastics are incorporated as components or as a whole in the products mentioned above(Akdogan and Guven, 2019). For example, before the onset of the COVID-19 pandemic, only 5 million from 35 million N95 masks that were produced by 3M companies per month were used by the health caseworkers in the United States(U.S). The main N95 masks production facilities of 3M Company were located in the U.S. and China.

But with the pandemic, two new factories were opened in South Dakota and Nebraska in the U.S running 24 hours per day and 7 days per week. By early May, 3M company reached its U.S. production of N95 masks to 95 million units per month and expected to increase their annual production rate from 1.1 billion to 2 billion N95 masks by the end of 2020 (Gereffi, 2020). According to the World Trade Organization report published in December 2020, China was the top supplier of face masks, accounting for 56% of world exports. These statistics show how the usage of plastic as PPE has gone up drastically during the pandemic. At the end of the day, if these PPEs were not discarded properly, the medical waste becomes the source of environmental pollution (Figure 01).

Surface Stability of COVID 19 virus

A recent study conducted by Christian et al in 2020 has shown that the COVID 19 virus could survive up to 05 days on the plastic surface at a relative humidity of 40 – 50 % and at a temperature range of 21 to 25oC (Enyoh et al., 2020). The New England Journal of Medicine reports that the virus has the capability of surviving on plastic and stainless steel than on copper and cardboard. Further on the report highlights that a viable virus was detected up to 72 hours on plastics after application. But after 72 hours the virus titer was greatly reduced (from 103.7 to 100.6 TCID50 (TCID50 - Median Tissue Culture Infectious Dose - one method used to verify the viral titer) per milliliter on plastic and from 103.7 to 100.6 TCID50 per milliliter after 48 hours on stainless steel.

Figure 02 - OceansAsia founder Gary Stokes holding a string of face masks that washed up on a beach in February 2020
[Source - OceansAsia.org]

Furthermore, on a copper surface, no viable COVID 19 virus was detected after 4 hours and on cardboard, no virus was detected after 24 hours (Van Doremalen et al., 2020). These periods are enough for the virus to be picked up by airborne MPs. Scientists believe the COVID 19 virus has the potential to attach to MPs surfaces through formed biofilms because the surface area-to-volume of MPs is very large which makes MPs a good sorbent material.

But chemical factors such as pH, salt and ionic strength, antiviral chemicals (mainly phytochemicals e.g quercetin, apigenin, hesperidin, and naringin, etc), presence of another microorganism (such as bacteria) will determine the attachment of the virus to the surface of MP. Therefore the COVID 19 on the surface of used gloves or a face masks could still carry a threat to public health if the plastic waste is not properly collected and disposed of (Wang et al., 2020). MPs can be consumed by humans unknowingly. It can be easily inhaled. The first entry of inhaled MPs is trapped in the upper airways and then further inhalations deposit it to the lower airways (Enyoh et al., 2019).

MPs could travel more than 100km

A study was conducted in Wuhan, China regarding the long transportation (> 2 m) capability of the COVID 19 virus in the air in, hospital settings using air samples in intensive care units and general wards. The results have shown that 35 % of intensive care units and 12.5 % of general wards air samples were contaminated with the COVID 19 virus. Also, the study found out that the virus alone can travel in the air with a maximum transmission of ~ 4 meters from the source(Guo et al., 2020).

A study on airborne MPs has shown that it has the potential to travel more than 100 km(Enyoh et al., 2019). Another study done in France has shown that airborne MPs have traveled to a distant place, 95km away from the source with the aid of strong wind (Allen et al., 2019). These results lead the scientist to predict that MPs could potentially transport the virus not only within the country but also to the whole world without hu-

Figure 03 – Antiviral Fabric from SQ Group, China *[Source - http://e.shengquan.com]*

Figure 04- Test data from VRS in the United Kingdom *[Source - http://e.shengquan.com]*

man-to-human contact (Enyoh et al., 2019). The scientific data on this new theory is lacking. But more and more research work is needed on this potential treatment and this new pathway of COVID-19 transmission. Microplastic emissions cannot be entirely avoided during the waste management process. But effective sanitization procedures should be taken during the collection, separation, transportation, and disposal process of used medical waste. Incineration is an ideal method to destroy the virus. But incineration of plastic emits a lot of toxic environmental pollutants.

The Future - Antiviral Fabric against COVID 19

Antiviral Fabric against COVID-19 is a new concept and still under laboratory level. But few reports have come out regarding the success of the fabrics. On 10th February 2021, Jinan Shengquan Group Share Holding Co., Ltd. (SQ Group), China in collaboration with Hong Kong Nano and Advanced Materials Institute (NAMI) informed that under experimental conditions, a fabric named Nano-VTS which is treated with a special biopolysaccharide material able to kill 100% of the SARS-CoV-2 virus. The new antiviral fabric has been tested at The British Virology Research Services (VRS), and it has been confirmed that the virus was reduced by 90% within 5 minutes of contact with the fabric and 99.99% after 120 minutes. According to the inventors, the fabric is effective even after 30 washes and still able to kill over 99% of the viruses (SQ Group, 2021).

A study published by Cristina Balagna et al in 2020, showed that silver nanocluster/silica composite coating completely reduces the SARS-CoV-2 viral titre to zero under laboratory conditions(Balagna et al., 2020). Another study conducted to incorporate zinc ions into the fabric fibers also has shown positive results. The Zinc ions inactivated the SARS-CoV-2 virus in laboratory testing and remain stable over 50 standardized washes(Gopal et al., 2020). These new attempts to develop anti-viral fabrics give new hope for the "pathogen-free" PPE waste and reduction of environmental pollution.

In conclusion, this new pathway gives the world several messages. "Save The Environment From Plastics While Fighting Against COVID-19" & "Its high time to select for an alternative material to develop PPEs other than plastics which has a low surface stability for SARS-CoV-2 virus "

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Management of COVID-19 in Sri Lanka

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COVID-19 is caused by SARS-CoV-2 which is an RNA virus. Its genomic sequence was first revealed to the world by China in early January 2020 following an outbreak in the city of Wuhan. The management of COVID-19 has evolved over time with the emergence of trial evidence. Although a vaccination drive is going on globally, a large number of cases is reported daily, raising the need for refining treatment.

The asymptomatic and mild to moderately symptomatic patient

30-40% of patients with SARS-CoV-2 infection are asymptomatic while another 40% of patients are mild to moderately symptomatic. Less than 20% of patients need hospitalization with about 5% needing intensive care.

Asymptomatic and mildly symptomatic patients can be managed at home with monitoring. However, Sri Lanka currently adopts a policy of isolating PCR or RAT (Rapid Antigen Test) positive patients in intermediate care centers. Patients with severe illness and those with comorbidities are transferred to designated COVID-19 hospitals.

Patients asymptomatic at diagnosis need only to be monitored for typical symptoms of COVID-19, and those with mild symptoms do not require any specific treatment. Patients with moderate to severe symptoms should be monitored in a treatment facility and transferred to a higher (level 2 or 3) center depending on the clinical assessment. In all these categories if a patient was on aspirin for a co-morbidity, it should be continued. If a patient's cardiovascular risk assessment reveals a high risk, aspirin could be started in the treatment facility.

The hypoxic patient

Detection of early hypoxia in those with moderate to severe illness is crucial to prevent morbidity and mortality. Due to the reported phenomenon of happy hypoxia, regular pulse oximetry monitoring is essential. As soon as SpO2 goes down to 94 or below, specific treatment should be initiated as per the national guideline. Oxygen supplementation should be commenced in a stepwise manner to keep SpO2 of 92 to 96% (88-92% in patients with COPD).

Low flow oxygen devices, face masks, venturi masks and non-rebreathing masks (NRBMs) capable of delivering oxygen flow rates up to 15L/min can be used to achieve that target. Oxygen concentrators can meet a requirement of 5L/min. Self proning strategies are advised.

The most important therapeutic management step when the SpO2 is 94 or less is to initiate steroids. Intravenous or oral dexamethasone 6 mg daily is initiated and continued for 10 days. Alternatives to dexamethasone would be prednisolone 40 mg, methylprednisolone 32mg and intravenous hydrocortisone 50 mg 8 hourly.

All patients with a SpO2 of 94 or below should also be anticoagulated as per VTE (venous thrombo-embolism) prophylaxis. Enoxaparin 40 mg daily subcutaneously is commonly used with a dose reduction to 20 mg daily when eGFR is less than 30. Alternatively, heparin 5000 units BD can be used when eGFR is less than 30. When eGFR falls to 10, only heparin can be used. If there is a high degree of clinical suspicion of VTE, CTPA/ venous doppler evidence of VTE or a high D dimer over 1500ng/ml, the anticoagulant dose should be increased to a treatment dose (enoxaparin 1mg/kg BD or 1.5 mg/kg once daily).

If eGFR is less than 30, enoxaparin 1mg/kg once daily could be used. Severe disease with progression is said to occur when SpO2 falls below 90 with maximum oxygen supplementation or if the Sp02 is below 94% with evidence of tachypnoea (respiratory rate over 30), haemodynamic instability (heart rate over 120/ min, SBP less than 90 mmHg, lactate over 2mmol/L), over 50% multi-lobar infiltrates on radiography and P/F ratio less than 300 (partial pressure of oxygen/fraction of oxygen). The patient may need transfer to HDU/ ICU if available.

Respiratory support could be given through high flow nasal oxygen (HFNO), continuous positive airway pressure (CPAP) or non-invasive ventilation (NIV)-BiLevel. Various proning strategies could be adopted judiciously.

If the patient's response to non-invasive ventilatory strategies is inadequate (if clinical deterioration is seen and SpO2 cannot be maintained over 92% with FiO2 of 0.7), invasive mechanical ventilation should be instituted early. The aim of invasive mechanical ventilation is to reduce or prevent self-inflicted lung injury. Veno-venous ECMO (Extracorporeal membrane oxygenation) may also be

required if hypoxia does not improve.

The IL-6 blocker tocilizumab is used under strict criteria if there is clinical and biochemical evidence of continuing severe inflammation even after initiation of steroids. For tocilizumab to be used, the patient should already be on steroids, there should be rapidly rising oxygen demands, the CRP should be over 75 mg/L and bacterial sepsis should be excluded. A dose of 8 mg/kg can be used intravenously up to a maximum of 800 mg.

A typical dose would be 400 mg. Under special circumstances the dose could be repeated after 12 hours if there is no improvement. Bacterial sepsis could be excluded clinically and with the aid of pro-calcitonin.

There are other contraindications to the use of tocilizumab. They include severe neutropenia, thrombocytopenia (less than 50000/mm3), active TB, herpes zoster and an ALT level five times the normal.

Fluid therapy should be guided by the clinical condition of the patient. Although generally a conservative fluid management strategy is advocated, hypovolaemia should be avoided. Pulse rate, blood pressure, urine out put and serum lactate would guide fluid management.

Complications

Secondary bacterial sepsis is a recognized complication of COVID-19. Treatment should be guided by blood/urine cultures. A standard antibiotic regimen would be cefotaxime 1g 8 hourly or ceftriaxone 1g bd. Second line antibiotics could be given after careful consideration, and with microbiology advice.

Fungal infections (e.g. aspergillosis, mucormycosis) could occur in the third week of illness. Viral co- infections could also occur (CMV, HSV and VZV). Appropriate anti-microbial therapy is indicated. Acute kidney injury (AKI) is common in these patients. Dehydration, sepsis and virus- induced kidney damage could be the reasons for AKI. In severe cases renal replacement therapy may be required. Continuous renal replacement therapy (CRRT) is advocated. Liver involvement is usually limited except for raised liver transaminases.

Myocarditis could occur due to direct virus-induced cardiac muscle damage. Arrythmias could occur, and QTc prolongation should be actively looked for with ECG monitoring. Troponin I should be done periodically to exclude myocardial injury.

Emphasis should be placed on maintaining optimal magnesium, potassium and calcium levels. Acute myocardial infarction could occur as a thrombotic complication. Similarly, acute stroke could occur as a result of thrombosis or thrombo-embolism. Seizures and meningo-encephalitis are known complications.

Severe derangement of blood sugar control is known to occur specially with severe COVID-19. Insulin therapy may be required in some cases. Maintaining an appropriate level of hydration and good nutrition are essential.

Discharge and follow up

Anticoagulation on discharge should be individualized. The potential risk of bleeding and thrombosis should be considered before consideration of anticoagulant therapy at home. The patient may need a follow up course of antibiotics, and symptomatic treatment with decongestants and bronchodilator or steroid inhalers when indicated. Follow up clinic visits may be needed in patients with severe pneumonia to detect fibrotic complications and to treat accordingly. Assessment of psycho-social issues could be relevant in selected patients. A long COVID syndrome has been described in patients who report persistent symptoms (respiratory and others) but details are not clear at present.

Other therapeutic interventions used globally

Many therapeutic agents have been tried for COVID-19 since the pandemic began. Hydroxychloroquine looked promising initially but subsequent randomized clinical trials did not show a statistically significant benefit. Intravenous remdesivir is used in the United State on the basis of a trial conducted by the National Institute of Health, which showed a reduction of hospital stay by 4 days. But mortality was not assessed.

The WHO Solidarity trial which had many treatment arms including remdesivir, hydroxychloroquine, lopinavir- ritonavir and interferon, concluded that there was no mortality benefit with any of those drugs.

Therefore, the WHO gives a conditional recommendation against the use of remdesivir outside of a clinical trial. Ivermectin has been repositioned to use against COVID-19 but trials have given mixed results. The WHO currently recommends against its use and no major national guideline has included it so far.

Convalescent plasma taken from patients who have recovered from COVID-19 have been used widely, (including in Sri Lanka) but no RCT has shown a statistically significant benefit, perhaps because it was not given to patients early on in their disease course. Monoclonal antibodies are used in the United States within the first 3 days of the illness in those with a high risk of progression to severe disease.

Given as a single intravenous infusion in the outpatient department, it has shown some promise but the cost is prohibitive. Although used widely, there is currently no good evidence to support the use of vitamin D and

zinc either as treatment or prophylaxis. However, known vitamin D deficient individuals in the community should be given the appropriate dose of vitamin D to maintain good bone health.

Research is going on with newer molecules (with inhaled nitric oxide and the oral anti-viral drug molnupiravir showing early promise) as potential therapeutic interventions, and it is likely that guidelines may need revision periodically.

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Parasites of the mind: "Delusional parasitosis"

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Have any of you come across patients in your practice who bring 'parasites' extracted from the skin with the complaint that they were crawling on their skin for quite a long time? Probably yes! if you are a dermatologist or a general practitioner, but others, except the psychiatrists, may not even have heard of this entity called 'delusional parasitosis'.

Delusional parasitosis falls under the broad category of 'delusional disorders' in the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM 5), which describes a disorder with one or more persistent delusions that are not due to any other condition [(1)].

In the International Classification of Diseases of the tenth revision (ICD 10), which is commonly used in Sri Lanka, it is categorized in the category of persistent delusional disorders [(2)].

A delusional disorder is where a person develops a stable encapsulated delusional system over some time, typically in middle or later life, with no impairment of other mental functions. Delusional parasitosis belongs to the sub-category of somatic delusional disorders where the patient firmly believes, on inadequate grounds, that they suffer from a physical illness, deformity, or an infestation [(3)].

Delusional parasitosis is characterized by a fixed, firm, conviction that is held on insufficient grounds that there is macro parasitic like helminths or smaller organisms like viral or bacterial infestation often in the skin (lice, fleas, spiders, worms, and others), despite the absence of any medical evidence that could support this claim.

It is also called 'Ekbom syndrome' after the Swedish neurologist Karl Axel Ekbom, who carried out significant work on this disease.

Apart from the delusion,

which is the primary psychopathology, patients may have associated tactile hallucinations or 'formication' where they perceive parasites crawling or burrowing into the skin.

Skin lesions may be present in the form of bruises, nodular pruritis, ulcers, and scars in the skin of the hands, arms, feet, lower legs, scalp, the upper back, and breast region, and the genitals or body orifices such as the nose, ears, mouth, anus, and the gastrointestinal tract.

Injuries are sustained when the patient tries to extract the parasites. They will typically present with clothing lint, pieces of skin, or other debris contained in plastic bags, jars, envelopes, or adhesive tape claiming that they contain the parasites compulsively trying to gather evidence. This presentation is called the 'matchbox sign'.

Delusional parasitosis is categorized into primary, secondary, and organic forms. In the primary form, the delusions of parasitic infection are the only symptoms present, and there is no evidence of other psychiatric or organic disorders.

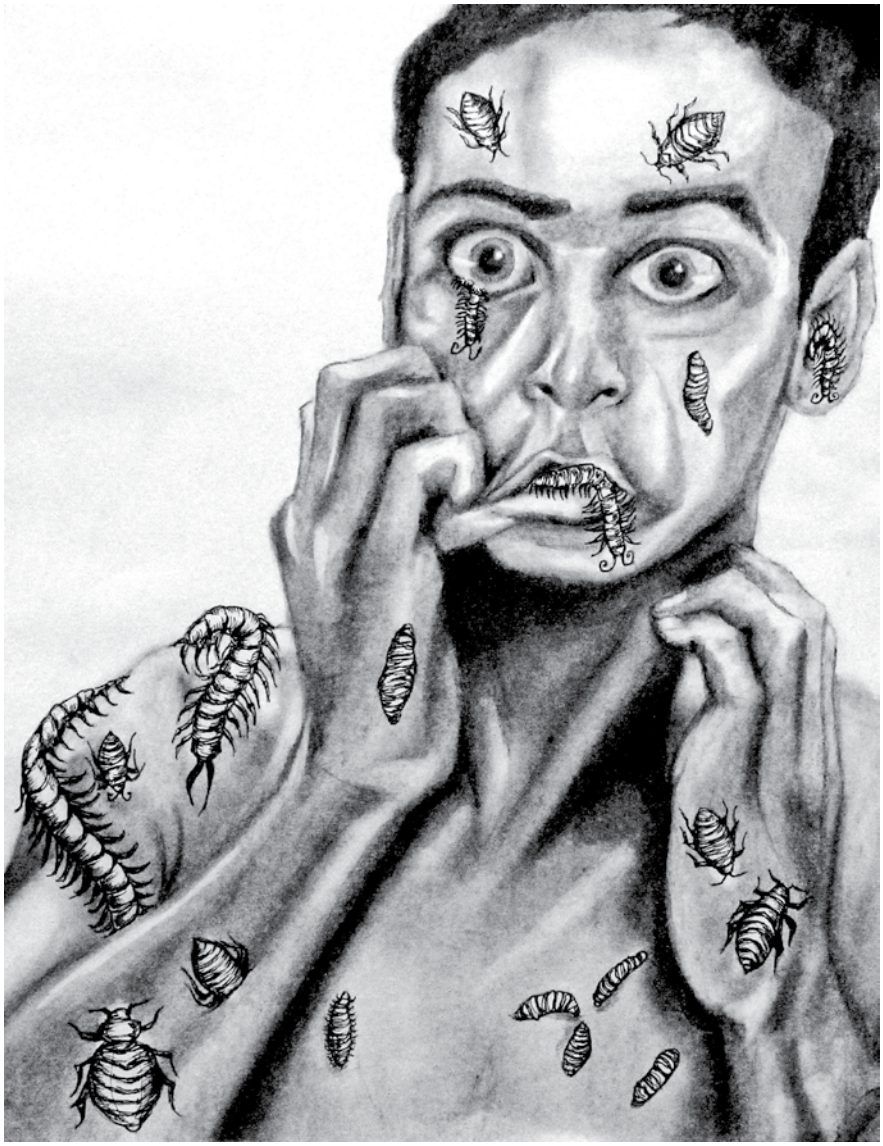
The secondary conditions occur as a part of another primary psychiatric disorder such as schizophrenia, depression, or dementia.

Organic delusional parasitosis occurs secondary to organic causes like medical illness (e.g., hypothyroidism, anaemia, vitamin B12 deficiency, hepatitis, diabetes, infections like HIV, syphilis), or cocaine abuse [4].

Patients often have a history of applying topical dermatologic medications and/or antibiotics to treat the condition.

They may have tried pest control measures for their homes. Some patients provide false descriptions of parasites and the timing of infestations.

Further, in about 5–15% of cases, close relatives may experience identical delusions [5].



Self-diagnosis resulting from Internet-based dissemination of the condition is also known ('folie à Internet').

Patients may feel frustrated and feel disrespected and may even lose trust in their usual doctor, accusing them that the doctor did not take the time to listen to their complaints or symptoms.

Thus, the patient may have visited other doctors for second opinions. Secondary depression is common among these patients.

Skin examination may reveal no lesions or minor scratches, ulcers excoriation, discreet bruises, erosions, and cuts, mainly due to self-damage caused by attempts to remove parasites.

Obsessive cleaning, applying erosive chemicals, scratching, or using adhesive materials on the skin to remove the fictitious parasite causes some of these lesions.

The aetiology of the condition is unknown.

Delusions of parasitosis are commoner in middle-aged, often socially isolated women (the average age is 57 ± 14 years).

A ratio of 2:1 for females to males has been reported by some researchers [6].

Most cases of delusional parasitosis can be diagnosed purely based on the history and mental state examination.

However, in some instances, before establishing the diagnosis of DP, an actual parasite infestation should be excluded.

Some parasitic causes to be excluded are,

- Scabies
- Pediculus species (body louse)
- Ticks and mites of animals
- Bed bugs
- Dirofilariasis (zoonotic filariasis)
- Cutaneous larva migrans
- Larva currens (by Strongyloides stercoralis)
- Cercarial dermatitis (swimmer's itch)

Relevant investigations can be done to exclude the possibility and win the patient's confidence, which is imperative for further management.

For example, microscopic examination of skin scrapings to rule out scabies and hair to exclude louse infestations can be carried out.

Microscopy of cloth lint/fibres brought by the patient will be useful to reassure the patient that they were not worms.

A comprehensive physical examination and appropriate investigations are necessary to rule out other diseases that may cause itching. Secondary causes mentioned below for developing delusional parasitosis should be excluded.

- Medical illnesses: hyperthyroidism, B12 and folate deficiencies, neuropathy, and diabetes
- Neurologic conditions: dementia, stroke, multiple sclerosis, encephalitis, meningitis, and post-surgical complications from neurosurgery
- Psychoactive substance abuse: cocaine, alcohol
- Infections: HIV, tuberculosis, leprosy, and syphilis
- Side effects of medications: medications such as topiramate, ciprofloxacin, amantadine, steroids, ketoconazole, and phenelzine

DP patients typically present to general practitioners or dermatologists. Referral to a psychiatrist is challenging because patients will not accept the diagnosis of a psychiatric disorder due to the firm belief that they have a parasitic infestation.

Therefore, compliance with antipsychotics is often lacking. The doctor-patient relationship is crucial in achieving successful treatment.

Excluding parasitic infestations by laboratory tests and referral to a dermatologist can assure the patient that the treating doctor is not ignoring their complaints.

The best way to approach the problem would be to take a neutral stance, stating that there are no parasites visible at this time of examination.

It is vital not to dismiss the complaints while being careful not to reinforce the delusion that can make treatment more difficult.

As the patient actually perceives the insects are crawling, resulting in severe distress and sleepless nights, it is vital to allay the misery by psychological support and, at times, by pharmacological treatment.

Pimozide is widely discussed in the literature as a medication for delusional parasitosis.

Although any antipsychotic can be used, the current management is predominantly with second-generation antipsychotics such as risperidone, olanzapine, and quetiapine [7].

The available research evidence shows an overall response rate of 50-70% to antipsychotic treatment. However, this is affected by the difficulty to convince and maintain patients on psychotropic medications.

Therefore, it is essential to maintain a solid therapeutic relationship, acknowledging the distress and frustration the patients experience, to enable them to achieve the greatest benefit.

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Reduce the Delay in diagnosing imported Malaria

If a malaria patient is left untreated

- Risk of complications & death of the individual increases
- Could lead to re-introduction of malaria in Sri Lanka

Malaria should be suspected in all fever patients with a travel history to a malaria endemic country …..!!

Common causes for delay in diagnosis:

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- Atypical presentations
- Mimic other common febrile diseases with thrombocytopenia

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The outcome of Maternal Death Surveillance and Response – 2019

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Maternal Death

Death of a woman while pregnant or within 42 days of termination of pregnancy irrespective of the duration and the site of the pregnancy from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes

Maternal mortality is globally accepted as a quality indicator of the overall health of a population in a country depicting the status of women and the functioning of the healthcare delivery system.

A structured Maternal Death Surveillance and Response mechanism are in operation covering the entire country with data originating from both community and facility levels. When a probable maternal death is known, field and hospital health staff notify, conduct post-mortems, review the index death at the field and hospital levels, and send a detailed report to Family Health Bureau (FHB). At FHB, the Maternal & Child Morbidity and Mortality Surveillance Unit maintains a database, and comprehensive case scenarios are developed. These cases are then desk reviewed by an expert panel comprised of different specialties related to maternal care service provision. A national team of experts from related specialties visits each and every district in the following year to conduct National Maternal Mortality Reviews (NMMR) at the district level with the participation of all concerned stakeholders. Each maternal death is reviewed based on three delays – (deficiencies in seeking healthcare, reaching and treating), and lessons learned are translated into practice, programs, and policies at district and national levels.

Maternal mortality ratio (MMR) is the most widely used measure of maternal deaths. MMR assesses obstetric risk (i.e., the risk of dying once a woman is pregnant). It is calculated as the number of maternal deaths per 100,000 live births.

Sri Lanka reported an MMR of 1694 per 100,000 live births in the year 1947 which gradually reduced the last few decades to achieve the best MMR in the South Asian Region.

Definition of a Maternal Death

In the year 2019, the field health staff registered and cared for 3,903,306 eligible families all over the country and registered 341,745 pregnant mothers. Antenatal care was provided to 95.4% of them and 99.9% of women delivered in a hospital.

The HHB was notified of 169 probable maternal deaths during the year 2019. Comprehensive information from family, field, hospital, and medico-legal sectors were compiled to develop case scenarios. District-wise categorized cases were subjected to a national-level district review with the participation of related experts. Maternal death review teams participated at NMMRs in all 26 health regions and reviewed all maternal deaths (100%) by September 2020.

In 2019, 93 reported maternal deaths were categorized as maternal deaths giving a national Maternal Mortality Ratio (MMR) of 29.2 per 100,000 live births (Figure 1). Live births reported by the Registrar General's Department for the year 2019 were taken as the denominator (319,010). Notably, there was a substantial reduction of live births (9,102) in the denominator (2018 - 328,112).

Figure 2 illustrates the number of reported and confirmed maternal deaths from 2001 – 2019. Though there is a gradual reduction in the number of maternal deaths over the years, the number has been almost stagnant during the period 2014 - 2016. A significant rise was noted in the year 2017 mainly due to the higher number of deaths of dengue haemorrhagic fever (n=21) as a result of the country-wide epidemic contributing to the maternal death profile. It is noteworthy the substantial reduction of the number of maternal deaths (n=35, 27%) over the years 2018 & 2019.

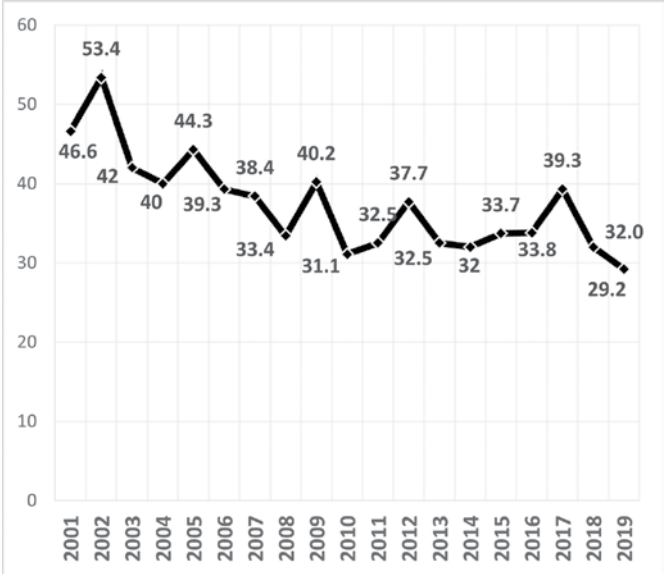
Sri Lanka's 'MMR' decreased over the years to reach a level well below the MMR of other South

Maternal Deaths	= 93
Live Births	= 319,010
Maternal Mortality Ratio	= 29.2
	(per 100,000 live births)

Figure 1: Calculation of MMR 2019

Figure 2: Number of Maternal Deaths (2001 – 2019)

Figure 3: Maternal Mortality Ratio from 1995-2019



Source: *Maternal & Child Morbidity & Mortality Surveillance Unit - Family Health Bureau*

Asian countries and to be on par with high-income countries. Figure 3 shows the trend of MMR from 2001 – 2019. However, similar to the number of maternal deaths, the MMR has also been stagnant from 2010 to 2017. A sizeable decrease of MMR, by nearly 10 points, is visible from 2017 to 2019.

Figure 4 shows the number of deaths and MMR of each district based on the live births reported by the Registrar General's Department. A wide district disparity is evident with 16 districts reporting their district MMRs above the national value. The highest MMR was reported from the Mullaitivu district (109.3 per 100,000 live births). Other leading districts were Monaragala, Ampara, Mannar, and Nuwara Eliya. A higher number of maternal deaths was reported from Colombo (9) and Gampaha (8) districts.

Dead women in the descending order were from rural (n=67, 72%), urban (n=21, 23%) and estate (n=5, 5%) sectors. Ethnic composition revealed Sinhala (n=61, 66%), Tamil (n=19, 20%) and Muslim (n=13, 14%) women. All except one woman was unmarried. There were only two (2) teenage maternal deaths. The majority (n=64, 69%) were in the 20 – 35 year age group. Significantly, twenty-seven (29%) women were above 35 years of age.

Nearly forty percent (n=37, 39.8%) of the dead women were primiparae and exactly a similar proportion (n=37, 39.8%) were in their 3rd or greater gravidity. Many (n=42, 45%) had no living children. Ten (11%) women had three or more children. Nineteen (20%) women reported an unmet need for

Figure 4: Maternal Deaths and MMR by District - 2019

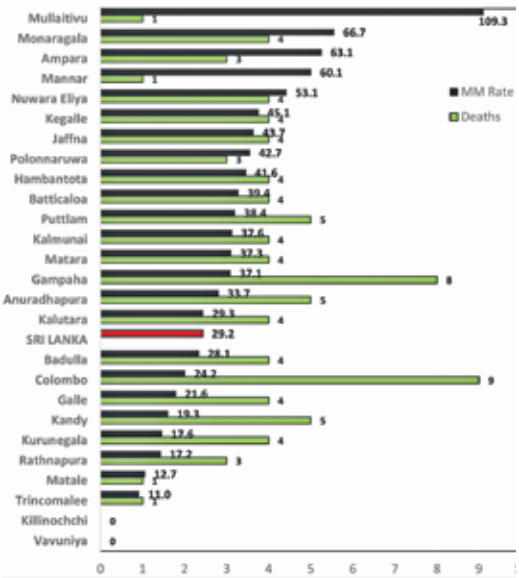
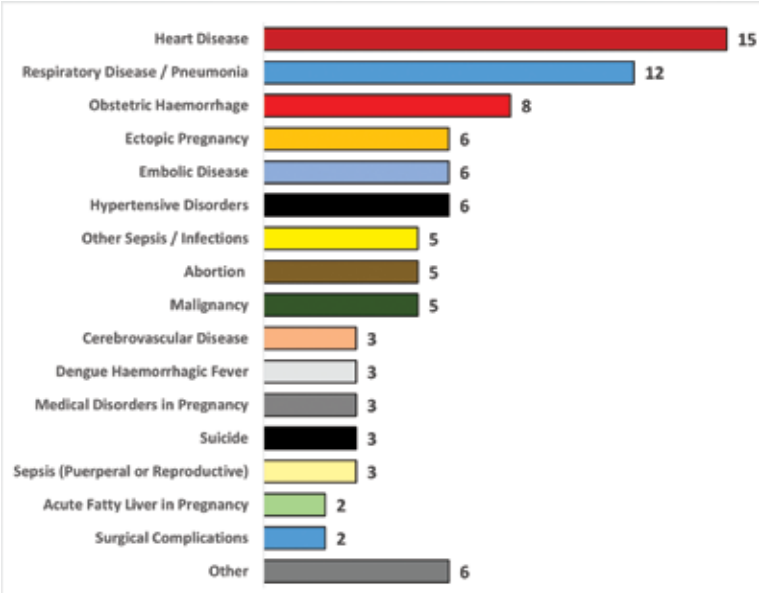


Figure 5: Causes of maternal deaths - 2019



Source: *Maternal & Child Morbidity & Mortality Surveillance Unit - Family Health Bureau*

Figure 6: Presence of delays

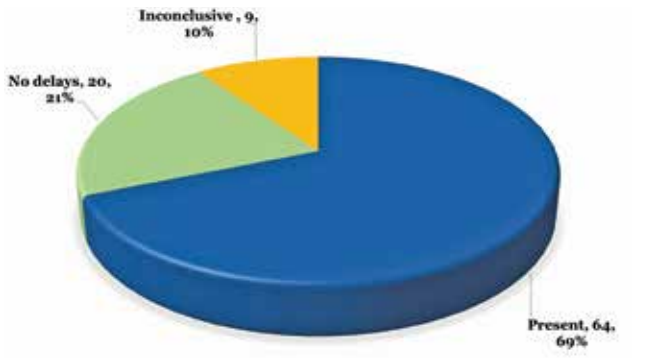
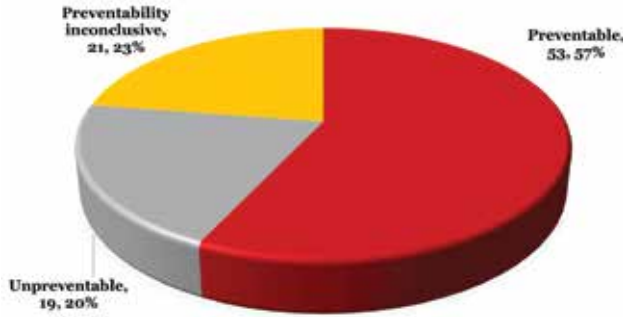


Figure 7: Preventability of maternal deaths



family planning.

Maternal deaths are categorized into two groups: direct and indirect. Direct obstetric deaths result from obstetric complications of the pregnant state (pregnancy, labor, and puerperium), from interventions, omissions, incorrect treatment, or a chain of events resulting from any of the above. Indirect obstetric deaths result from previous existing disease or disease that developed during pregnancy and which was not due to direct obstetric causes, but which was aggravated by physiologic effects of pregnancy.

A majority (n=52, 56%) of the deaths were indirect maternal deaths while 43% (n=40) were direct and 1% (n=1) were uncertain.

Causes of the maternal deaths reported in 2019 are indicated in figure 5. The leading causes were heart disease (n=15, 16%), respiratory disease (n=12, 13%) and obstetric haemorrhage (n=8, 9%). These three causes were rotating over the past few years as the leading causes of maternal deaths in the country.

Further analysis of deaths due to heart disease reveals that 6 deaths were due to rheumatic valvular heart disease and 3 deaths were due to ischaemic heart disease. Of the 12 maternal deaths due to respiratory diseases, 10 were due to pneumonia. Influenza virus was attributed to 5 pneumonia deaths. Causes of deaths due to obstetric haemorrhage include four post-partum haemorrhage (one home delivery), two uterine ruptures, and two abnormally adherent placentae.

Table 1: Place of death

Place of death	N	%
Home	4	4.3
In transit	3	3.2
Death on Admission	11	11.8
Hospital	75	80.6
Base Hospital	14	15.1
District General Hospital	22	23.7
Provincial General Hospital	3	3.2
Teaching Hospital	35	37.6
Private Hospital	1	1.1
Total	**93**	**100.0**

A notable reduction of liver disease in the index year is apparent. Out of the maternal suicides reported in the index year (n=24), only indirect and direct cases which fulfill the maternal death definition (n=3) were included in the analysis.

Forty one (44.1%) dead women had undergone operative deliveries. Senior obstetric intervention was present in more than 50%.

A majority (n=75; 81%) of women have been cared for at a hospital before they died (Table 1). Eleven (11) women were pronounced dead on admission to a hospital. Out of the women who died at a hospital, a majority (n=38; 41%) died at a teaching or a provincial general hospital and 36 (39%) at a base or a district general hospital. One death was reported from a private hospital.

Delays in seeking, reaching, and treating (Three delays) were assessed in confirmed maternal deaths. Delays were identified in 64 (69%) deaths (Figure 6). Delay in seeking care was attributable to 46 (50%) cases. Suboptimal care provision, both at field and hospital, was revealed in 39 (42%) cases.

The preventability of the confirmed maternal deaths was assessed by the reviewing expert panel after reaching a consensus. Out of the 93 maternal deaths reported, 53 (57%) were categorized as preventable and 19 deaths (20%) as unpreventable (Figure 7).

At each district level maternal mortality review, all these cases (100%) were discussed, with identification of deficiencies and formulation of recommendations. Details were included in structured maternal mortality review minutes for all districts (100%) and disseminated to all stakeholders.

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Sri Lanka College of Obstetricians & Gyanecologists (President / Reviewers / Members)

Sri Lanka College of Anesthesiologists & Intensivists – Reviewers

College of Forensic Pathologists of Sri Lanka

Reviewers from other professional colleges

Consultant Community Physicians / Medical Officers - MCH

Regional & Provincial Directors of Health Services / Hospital Administrators

Medical Officers of Health / Medical Officers – Public Health

DDG (PHS II) / Director - MCH / Deputy Director - FHB

Family Health Bureau staff – Accountant / Office staff / Drivers

Maternal & Child Morbidity & Mortality Surveillance Unit team members

– Maternal & Child Morbidity & Mortality Surveillance Unit – Family Health Bureau

SARS CoV-2 epidemic and autopsy practice in Sri Lanka: Can it be erroneous without a comprehensive autopsy?

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Introduction

Postmortem diagnostic guidelines for Covid-19 infection in Sri Lanka include sampling of nasal/throat swabs, tracheal aspirate, femoral blood for polymerase chain reaction (PCR) and rapid antigen test. Positive results label it as a death following Covid-19 infection and warrants disposal without an autopsy.

Case scenario

A four-month-old boy was admitted with excessive crying and fever following immunization with pentavalent vaccine the day before.

Figure 1: Whitish grey endocardial surface of left ventricle indicating endocardial fibroelastosis

Rapid antigen test for Covid-19 was negative. He developed breathing difficulty and died four hours following admission. Pre-autopsy nasopharyngeal swab and tracheal aspirate obtained for PCR the following day tested positive for Covid-19.

Autopsy conducted four days postmortem revealed an enlarged heart (57 g) with dilated left ventricle (mid diameter=12 cm). Endocardial surfaces of both ventricles were whitish grey in color (figure 1). Histopathology revealed thickened endocardium with increased elastin and collagen fibers (figure 2). Tissues taken for PCR from brain, heart, both lungs, liver, spleen, both kidneys, skin, and skeletal muscles were negative for Covid-19. No evidence of anaphylaxis. Cause of death was given as dilated cardiomyopathy with endocardial fibroelastosis of ventricles.

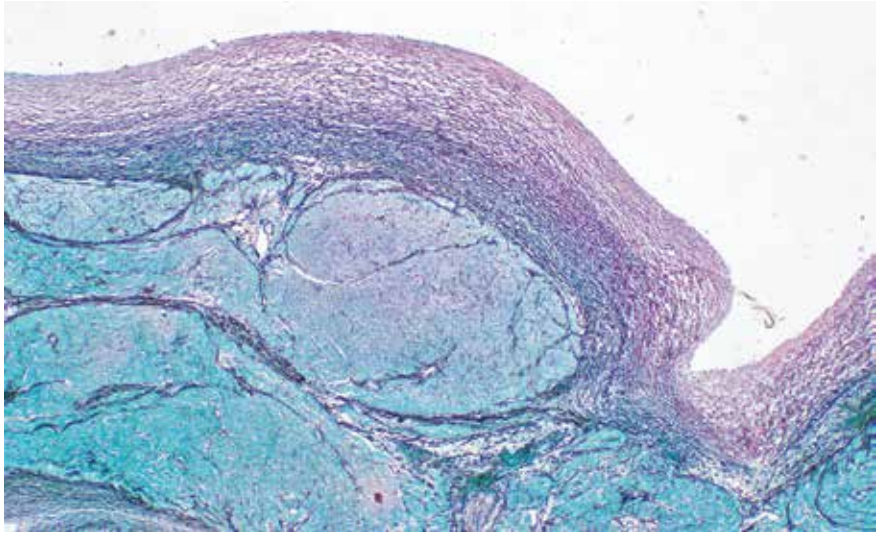

Figure 2: Distribution of endocardial elastic fibers (Silver stain X 5)

Conclusion

PCR on postmortem nasopharyngeal and tracheal swabs conclude only the presence of SARS CoV-2 viral ribonucleic acid in the upper respiratory tract but not the systemic infection. Therefore, the current practice of disposing dead bodies upon such positive results without exploring the definite cause of death is erroneous and can cause legal, moral, ethical, social, political and statistical outcry. A comprehensive autopsy is required to determine the

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9.30 am - 10.00 am
Research methods : How to select a correct research method

10.00 am - 10.30 am
Sampling methods and sample size: How many subjects?

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Prof. Anuja Premawardena

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Joys of ageing

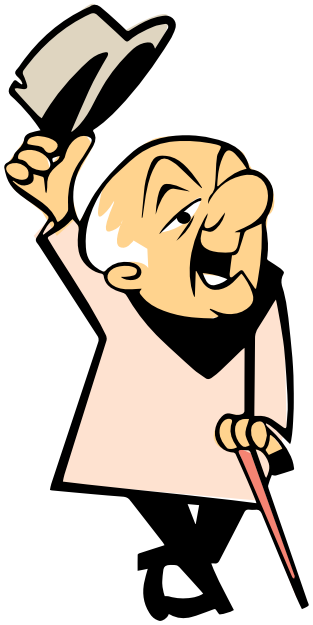
Even though my body is not as young as it used to be, I will never change my amazing friends, my wonderful life, the things I've seen, the lessons I have learnt and my loving family, for less gray hair or a flatter stomach.

With age, I became more merciful and less critical towards myself. I became my own best friend. I no longer get angry with myself for eating the last cookie, for not tidying my room, or for buying a new car. I can enjoy the treat, the mess, and the flashiness. I've earned it all. I have seen too many dear friends leave this world too early, before they could understand the freedom that comes with old age. It is nobody's business if I choose to read all night, sleep till noon and then spend my day on the computer. I'll dance to the music of the sixties and even cry over a lost love.

I'll walk down the beach in a bathing suit that stretches over my bloated body and abandon myself to the mercy of the waves and to pitying stares of onlookers. They will grow old too, someday.

As the years go by, it is easier to stay positive. I care less about what others think of me. I no longer doubt myself.

I have earned the right to make mistakes and do things others think are odd. I know that I forget sometimes, but some parts of life should be forgotten. At the end of the day, I remember the important things. I have suffered heartbreaks. How can you not, when losing a loved one or seeing your child suffer? But broken hearts give us strength, understanding and compassion. An unbroken heart is callous and hard, and will never feel the joy of imperfection.



I've been blessed with enough years for my hair to turn gray and for the laughter of my youth to become deep lines on my face. Many never got this far; never got to turn gray. I am fortunate.

Since you asked me., I like being old. I am free and I love the person I see in the mirror each morning.

I am content with myself.

From https://www.ba-bamail.com/content.aspx?emailid=24159

Extracted and presented by Dr B. J. C. Perera

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