

SJP

Sarawak Journal of Pharmacy

Journal Homepage: <http://jksarawak.moh.gov.my/spj/>



COMMENTARY

Sarawak General Hospital Research Pharmacists in COVID-19 Crisis

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Clinical Research in SGH

Clinical trials and research studies are vital components in Sarawak General Hospital (SGH) to provide evidence-based and value-based medicine to its patients. Clinical Research Centre (CRC) in SGH established in 2003 as the third CRC established by the Ministry of Health. Currently, three full-time and two part-time pharmacists are working as research pharmacists in CRC SGH to support research activities in this hospital.

Pharmacist's Roles in Clinical Research

Research pharmacists are highly regarded in clinical research and work as all-round performers with many hats in SGH. Firstly, as pharmacists, we are responsible for ensuring ethical, safe, and quality use of trial medications. We need to store trial medications under specified conditions; prepare the medication in accordance with written manuals and study protocols, and ensure right patients receive the right medication in the right doses during dispensing. Besides, research pharmacists also delegated to conduct medication adherence counselling and assessment, and report any adverse events resulted from medications to the investigators. We often play the role of communicators between patients and doctors. In SGH, research pharmacists are involved in specific research areas such as pharmacokinetics, pharmacodynamics, and pharmacogenomics. For examples, we conducted pharmacodynamics research to study the efficacy of antiplatelet and anticoagulant in heart disease and stroke patients; we studied the prevalence of insulin resistance in diabetic patients; we used liquid

chromatography-mass spectrometry to determine drug levels, and we studied genes responsible for antiplatelet and anticoagulant effects. Besides that, we also involved in some epidemiological studies and biomarker studies, such as biomarkers in diagnosing late-onset neonatal sepsis and prevalence of non-communicable and infectious diseases in the rural Penan community in Ulu Baram. Furthermore, we also become manager and coordinator in bioequivalence studies, design study protocol, apply for a research grant, conduct statistical analysis, and even work in the laboratory.

COVID-19 Pandemic

At the end of 2019, a new respiratory infectious disease termed coronavirus disease 2019 (COVID-19) has emerged in China and caused a global outbreak. The first case of COVID-19 hit Sarawak on 13th March 2020, and the federal government imposed a nationwide Movement Control Order (MCO) on 18th March 2020. This unprecedented crisis has impacted the research activities in SGH to a certain degree. Responding to the pandemic, we quickly moved into a shift-based schedule to preserve the manpower in case of a quarantine order. Some of us continued to work in the hospital while others worked at home. We are determined to keep the essential pharmacy-related activities, such as dispensing to research patients, maintaining the cold-chain for investigational products, updating paperwork, and communications with other team members despite the pandemic period.

Opportunities in Time of Crisis

The pandemic has provided opportunities for us to contribute. We helped in converting CRC Research Ward to a temporary Intensive Care Unit (ICU) to cater for non-COVID-19 patients. Despite the short notice from the hospital, we managed to set up temporary ward medication lists, prepare medication trolleys, establish order and supply mechanism with hospital pharmacy for the new ICU ward within a few days.

Besides, together with our other colleagues in CRC, we supported the SGH Operation Room, dubbed 'OPS room' in tracing contacts among healthcare workers in the hospital during the outbreak from March to May 2020. We provided our experience in data collection and helped the OPS room to collect and analyse over 2000 contacts from the investigation lists. We also developed a specialised data collection system using REDCap, which is a free web-based data collection module for the contact tracing in SGH. Although we were not in time to test the system as the hospital outbreak had subsided when it has done, it is ready to be deployed shall

we are hit by an outbreak again. From the data that we have collected, we presented the trend of infection and risk factors analysis to the hospital management. In addition, we are also submitting at least one journal article on COVID-19 infection in healthcare workers in SGH on behalf of the SGH's OPS room team.

We also joined the team consists of volunteers from various state research institutions in Sarawak to set up a new molecular laboratory for COVID-19 testing from scratch, adding to the state's capacity in testing COVID-19 samples. As part of the teamwork, we are responsible for ensuring the smooth operation of the molecular laboratory by conducting tests, arranging human resource, and coordinating other laboratory management activities.

Recently, given new arrangements in our research activity in this pandemic period, we shifted some of our medication counselling sessions to video call interviews for our research patients. From our initial experience on this method, we feel that remote counselling via video call is as effective as face-to-face counselling and well received by our patients. It has the potential to be studied further and promoted to general pharmacist counselling activities in hospitals or clinics. These were all uncharted territories to us before the crisis. We are glad that we can contribute in different forms as a research pharmacist.

WHO SOLIDARITY Trial

SGH is participating in a World Health Organisation (WHO) trial called SOLIDARITY trial, which is a global effort to experiment on potential COVID-19 treatments. SOLIDARITY is currently one of the large randomised controlled trials to rapidly gather clinical evidence on the efficacy and safety of potential COVID-19 treatments, such as remdesivir, hydroxychloroquine, lopinavir-ritonavir, and interferons. We are delegated as the trial pharmacists to manage the medications in SOLIDARITY trial. In this trial, we are in charge of the accountability, inventory, storage, supply and dispensing of the trial medications. It is challenging because of the pandemic situation. We have to come out with creative ways in supplying the medication and completing the documentation. For example, to avoid cross-contamination, we created special forms with QR code that links to a Whatsapp number so that the ward staff can scan the documents and send them to us instead of returning the hardcopy. Besides that, most of the staff involved are occupied with their daily routines. It is impossible to train them all physically. Therefore, instead of gathering them for training on medication supply workflow and documentation in this trial, we prepared our training slides, flowcharts,

and recorded our briefing and distributed to them via a Whatsapp group chat. We also found that many of them do not have previous experience in clinical research. To overcome this, we have to improvise to simplify the procedures and documentations while maintaining a good track of drug accountability record for the trial.

Furthermore, as the recruitment is ongoing every day, depending on the COVID-19 cases, we take turns to cover the medication supply even during after-office-hour and public holidays. We are proud to be involved directly in SOLIDARITY trial. We are glad that this trial has made the potential COVID-19 treatments available to our patients while adding to the global quest in searching for effective and safe treatment in COVID-19.

Our Fight is Not Over Yet

While we are moving towards completion of Recovery Movement Control Order (RMCO), the end of the pandemic has yet to come. The second wave of COVID-19 had hit us with spikes of daily new cases. Our fight is not over yet. We will persevere with our colleagues to contribute our parts in this combat while continuing to pursue research that matters to patients in SGH.