



A DISCUSSION OF COMMON DRUGS IN MEDICINE

DOCTOR, TELL ME ABOUT ...

DR HIDAYATUL RADZIAH ISMAWI

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BY

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PREFACE

With the advent of social media and information technology, the public has unlimited access of information at the click of a mouse. Their enthusiasm to take an active part in their own health care coupled with the ease of information is unfortunately often at times detrimental due largely to the fact that they are unable to differentiate between valid sources of information and unreliable ones.

This book aims to provide information on various common drugs in medicine for the public written in simple language by a qualified medical professional.

BIOGRAPHY

Dr Hidayatul Radziah Ismawi was born in Kuala Lumpur and graduated with an MBBS from the International Islamic University Malaysia (IIUM) in 2005. She was awarded Best Student (Co-curriculum) and obtained 6 clinical distinctions. She completed her housemanship training with a brief stint as an anaesthetic medical officer at Hospital Tengku Ampuan Afzan before pursuing her Masters in Medical Sciences (Pharmacology) at Universiti Kebangsaan Malaysia and graduated with a 4.0 CGPA. She obtained her PhD in Medical Sciences from IIUM in 2020 and is currently an Assistant Professor at the Department of Basic Medical Sciences, Kulliyah of Medicine, IIUM. Her research interests include cardiovascular health, hypertension and social media applications of health education.

Dr Hidayatul Radziah is also the current Chief Editor of The Malaysian Medical Gazette (mmgazette.com)

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INTRODUCTION

With the surge in “Google doctors”, many healthcare professionals are faced with uncooperative and at times confrontational patients who insist in refuting sound medicine with pseudo-facts that they read on the internet. Thus, our aim is not to curb this positive information seeking behaviour but instead redirect it by providing informative and easily understandable articles for public consumption written by real doctors and healthcare professionals. One of the common gripes among the public is the lack of quality medical content easily available to the public, which is easy to understand. Doctors have always been famous for using medical jargon and this causes both confusion and lack of interest from the public who commonly have no medical background. Therefore they prefer to read “viral” medical anecdotes and use those as reference for their medical seeking behaviour.

In an effort to provide a more reliable source of medical and health related information, a group of doctors & healthcare professionals set up an online hub namely The Malaysian Medical Gazette (www.mm Gazette.com), of which Dr Hidayatul Radziah is one of the authors and the Chief Editor.

“DOC, WHY WON’T YOU GIVE ME ANTIBIOTICS?”

You have a sore throat and your nose is running like a KL marathon. You drag yourself to your nearby GP and after seeing the doctor, you open the white plastic bag to find that the friendly doctor that attended to you forgot to give you any antibiotics. Or did he? Before you throw a tantrum and barge through his clinic demanding your magic cure for all illness, pause to reflect. There must be a reason that antibiotics were omitted from your treatment plan. Antibiotics are a type of medication that inhibit the growth or destroy microorganisms. Antibiotics are commonly used to treat infections both in hospitals and in the community. Doctors are required to perform a thorough clinical assessment (history, physical examination, relevant investigations) to ascertain the underlying disease process in each patient that presents to them. If the cause of the symptoms is an infection, the doctor will predict the pathogens (infective organism) associated with the infection and select the most suitable antibiotic that will target the likely organisms.

Antibiotics are effective when used against bacterial infections, certain fungal infections and some types of parasitic infections. Antibiotics do not work against viruses. Antibiotics should not be prescribed when bacterial infections are unlikely, such as for common cold and most coughs because taking an antibiotic when you have a viral infection will not treat the underlying cause or relieve the symptoms; it will however contribute to antibiotic resistance. The consensus that antibiotic use or misuse is a major driving force for antibiotic resistance is now an established and recognized fact. Therefore all doctors and patients should be aware of several factors that should be considered before antibiotics are prescribed.

Indication: Are antibiotics indicated?

There should be evidence or strong suspicion that the aetiological (causative) agent is microbial demonstrated by signs and symptoms of infection and positive laboratory results.

Common organisms

The type of antibiotic given is based on the doctor's knowledge of the common organisms that cause that particular illness. Knowing the common organism also means knowing its susceptibility to particular antibiotics.

Antibiotic spectrum

Antibiotic spectrum is the range of organisms that the antibiotic treats. Deciding the spectrum of antibiotics depend on many factors including the severity of illness, the most likely microorganisms involved and whether or not the patient has other co-morbid factors (other illnesses such as diabetes mellitus, hypertension etc.)



Cost-effectiveness

Choosing the wrong antibiotic or prescribing unnecessary antibiotics will result in increased health care costs (cost of the antibiotic and overall costs due to the treatment failures and related adverse events associated with inappropriate use). Whereas using an optimal course of antibiotics when necessary has not only clinical advantages but also economic, since the patient will return to their normal daily activities including work, much faster. If antibiotics are used for illnesses that they are not designed to treat, for example colds, flu or other viral infections; they become less effective against the bacteria they are intended to treat. Another contributing factor towards the problem of antibiotic resistance are patients who do not take antibiotics according to the correct dosage and duration. Taking an antibiotic for only a few days, instead of finishing the full course, the antibiotic may kill some, but not all, of the bacteria. The surviving bacteria become more resistant. These resistant bacteria can then be spread to other members of the community. When bacteria become resistant to first line treatments, the risk of complications and death is increased. The failure of first line antibiotics also means that doctors have to use 2nd or 3rd line antibiotics. These medications may be more expensive and are often associated with more-serious side effects.

So the next time you have the sniffles, please keep in mind that knowing when to prescribe antibiotics is an essential skill doctors must acquire to ensure you receive the best medical care. Antibiotics should only be prescribed when necessary and as a patient, having some knowledge of the indications and importance of proper antibiotic use is important in helping in the fight against antibiotic misuse and resistance.

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WARFARIN: STROKE PREVENTION VS BLEEDING

BLOOD THINNER

Did you know that there is a type of heart condition that puts people at risk for a stroke? Patients with Atrial Fibrillation suffer from a condition that results in their heartbeat being fast and abnormal. Almost all strokes in AF are caused by blood clots that form in the left side of the heart due to the abnormal blood flow. These clots can dislodge and travel through the blood vessels and reach the blood vessels in the brain. Once the clot is lodged in the brain's blood vessel, it will prevent oxygen reaching that particular area of the brain, resulting in a stroke. It is a scary fact that many patients with AF might not be diagnosed until they have a stroke because they may not show any other symptoms except for an irregular heart beat, which patients may not notice or bring to the attention of their doctor. That is why doctors are taught since medical school that even the simplest act of taking a patient's pulse is important, as you can easily diagnose an irregular heart beat by doing so.

In order to prevent the formation of blood clots and protect the patient from getting a stroke, they are given an anticoagulant called warfarin (commonly known as a blood thinner or "ubat cair darah"). Since the biggest complication of warfarin is bleeding, the most severe of which are intracranial bleeds or bleeding in the brain/head, warfarin is given with very close monitoring. How well warfarin works to prevent blood clots and its safety of use is highly dependant on maintaining a specific range of international normalized ratios (INR). Patients will have to regularly go to the hospital or KK to check their INR via a blood test. This may sometimes feel like a burden to the patients or their relatives, but it is essential that patients do not miss their regular INR checks to ensure that their warfarin dose is enough to prevent blood clots but not too much that it can cause bleeding.

Newer oral anticoagulants are now available, which may prove to have less bleeding complications but a lot more still needs to be learned regarding their safety and efficacy. As with most things in life, the balance between stroke prevention and bleeding in patients with AF treated with warfarin is an important one to achieve.

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METFORMIN OR INSULIN IN PREGNANCY ?

ANTI DIABETIC

Strict blood sugar level control is very important in pregnant women. Uncontrolled or high levels of blood sugar in pregnancy can have several adverse effects on the fetus such as;

- Excessive birth weight (big baby)
- Early (preterm) labour
- Respiratory distress syndrome
- Low blood sugar (hypoglycaemia)
- Type 2 Diabetes Mellitus in later life

Patients with Type 2 Diabetes Mellitus on oral blood sugar lowering medication known as oral anti-hyperglycaemic agent (OHA) are often switched to insulin for better control.

Metformin is an effective OHA commonly used to manage Type 2 Diabetes Mellitus. Since Metformin is able to cross the placenta, its use during pregnancy raises concerns regarding potential adverse effects on the mother and fetus. Metformin is a category B drug for use during pregnancy. This means that animal reproduction studies have failed to demonstrate a risk to the fetus and that there are no adequate and well-controlled studies in pregnant women. However, recent studies in both animals and humans indicate that although Metformin does cross the placenta, it does not necessarily cause fetal defects or other serious adverse effects.

The most important issue should always be to maintain good glycaemic control or normal levels of glucose during pregnancy. Although an oral medication may be preferable to patients compared to insulin injections, Metformin alone may not be able to control blood sugar levels in patients with multiple risk factors for insulin resistance and may require supplementary insulin.

Even though there are studies that support the efficacy and safety of Metformin during pregnancy with respect to immediate pregnancy outcomes such as no teratogenic effects, number of intra uterine deaths, stillbirths and preterm labour, follow-up is still needed to determine whether long term effects of Metformin. Such as whether Metformin decreases or increases the development of obesity and diabetes in the babies later in life. As of now, whether or not Metformin should be administered throughout pregnancy is still a controversial issue.



Currently, there are no clear guidelines regarding this, therefore the choice to use Metformin and duration of treatment is based on clinical judgment on a case-by-case basis. Larger studies need to be conducted to determine whether Metformin can be considered a reasonable alternative to insulin in pregnant women with Type 2 Diabetes Mellitus.



For now, what is most important is for mothers at risk of GDM to be screened via Modified Oral Glucose Tolerance Test (MOGTT), affectionately known as “test air gula” so that those with GDM can be detected and followed up properly. Patients with GDM and Type 2 Diabetes Mellitus need to take their blood sugar control seriously and follow their obstetrician’s advice, regardless of whether they are on diet control (GDM), on Metformin or Insulin treatment. Working together with their doctor will help ensure a non-eventful pregnancy and labour for the mother and a healthy baby as the prize at the end of the journey.



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PARACETAMOL: HOW SAFE IS IT?

ANTI FEVER

Paracetamol is one of the most commonly used drugs worldwide because it is available without a doctor's prescription, it has multiple uses, it is quite cheap and it is relatively safe. In this age of social media, it is also one of the most famous drugs, frequently making the rounds via viral shares mostly under the exquisitely scandalous title "Doctors don't even take paracetamol because it leads to liver failure requiring kidney dialysis (???)".

Let's take our finger off the SHARE button for a moment and ponder, how much do we actually know about this drug, and is there any basis to these allegations? Will sharing such information benefit the people on my friend list or will it just add to list of things we SHARE "just in case" it's true?

Paracetamol (or more fondly known as Panadol in Malaysia) was discovered accidentally in the 1880s. It was first marketed in 1955 as an anti-pyretic (for relief of fever) and analgesic (for relief of pain). Paracetamol is recommended for use, either alone or in combination with stronger painkillers to treat mild, moderate and severe pain (WHO analgesic ladder). It is also often used to treat long term painful conditions such as joint pain, muscle pain or tendon pain. It is chosen for use in patients where other painkillers such as NSAIDs are contraindicated such as in pregnant women, children, people with gastric ulcers and blood disorders.

Surprisingly, the exact mechanism of action of paracetamol has not been fully determined although it had been widely accepted previously that it has a centrally acting (on the brain) effect. However, recent findings from ongoing research shows that paracetamol acts all levels of pain conduction (analgesic effect) and both centrally as well as peripherally for its anti-fever effect.

At the maximum dose of 4g/24h (usually 1 tablet is 500mg so 4g is 8 tablets), no serious side effects occur except possible allergic skin reactions. However, at doses higher than the recommended maximum dose or if it is taken for a long period of time, paracetamol may cause some side effects. After a person swallows a paracetamol tablet, 90% of it is metabolized (processed) by the liver to produce inactive byproducts or metabolites which are excreted via the kidney (through our urine). Only 5% is excreted unchanged.

Overall, paracetamol is a relatively safe drug to use for fever and treatment of pain according to the recommended dosage. It has desired effect and is well tolerated in the majority of people using it. However, when it is abused or misused for reasons such as slimming technique, or used together with other drugs or alcohol or smoking may lead to liver damage or even death.



Therefore it is important to use it only when indicated and as instructed. Remember, the maximum dose is 4g/24h. So the next time you read a “copy & paste” viral anecdote about “some doctor” in “some hospital” saying that taking paracetamol is bad for you, repeat after me “Only if taken at doses above 4g/24h, for prolonged periods of time, and for improper indications.” See? What a difference actual knowledge makes.

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TREATMENT OF IRREGULAR HEARTBEATS

Normally, we hardly notice our heart beating away diligently in our chest. Surprising, because the mere fact that it is beating is the reason we are alive. Once in a while, when we are scared or excited, or after a round of exercise we may feel it pounding strongly.

Doctors usually describe the heartbeats according to its rate, rhythm and character. A normal person has a resting heart rate of around 60-100 beats per minute. Athletes may have even lower heart rates than that. The rhythm is normally regular, you can feel your own pulse and notice this for your selves.

The heart generates its own electrical impulses via special cells known as pacemaker cells, and transmits this impulse to other cells in the heart along a specific pathway resulting in normal contraction of the heart muscles. This allows the heart to serve its function to pump blood carrying oxygen to our whole body. These impulses occur when there is passage of different concentrations of various ions in and out of cells such as sodium ions, potassium ions and calcium ions.

Arrhythmias, as the name suggests, are abnormal rhythms of the heart. It occurs either as due to an abnormality in the formation of impulse or due to an abnormality in the impulse conduction, or both. Patients with arrhythmia often present with palpitations or an awareness of their own fluttering heartbeat, racing heartbeat, chest pain or shortness of breath.

There are many factors that can induce arrhythmias including decreased oxygen to the heart muscles, abnormal levels of electrolytes or hormones, drug toxicity, presence of scarred or diseased heart tissue and various other conditions. Anti-arrhythmic drugs aim to reduce abnormal production of impulses and modify conduction abnormalities. There are 4 major classes of drugs used to treat arrhythmias based on their main mechanisms of action. There are also miscellaneous drugs which do not fall into these categories.

	Class I	Class II	Class III	Class IV
Mechanism of action	Sodium channel blocker	Beta- blockers	Potassium channel blocker	Calcium channel blocker
Examples	Quinidine Lidocaine Flecainide	Propranolol Esmolol	Amiodarone Sotalol	Verapamil Diltiazem



It is important to remember that all anti-arrhythmic drugs may also cause different types of arrhythmias and other adverse effects. Patients must take the drugs as prescribed by the doctor as well as adhere to other instructions given. Always inform your doctor if you are taking other medication or supplements as it may interfere with the anti-arrhythmic drugs. The doctors will diagnose the specific form of arrhythmia each patient is having based on the history, physical examination and investigations such as ECG; determine the underlying cause and weigh the risks and benefits of each type of medication before starting the patient on any drug therapy.

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WHY DO PLACEBOS HAVE ANY EFFECT AT ALL?

“Placebo: a usually pharmacologically inert preparation prescribed more for the mental relief of the patient than for its actual effect on a disorder”- Merriam-Webster Medical Dictionary

Everyone has heard of placebos, but have we ever wondered what they are? For easy understanding, placebos are basically drugs which have no actual action but have a positive effect on people without treating the cause of the disease. Simply put, a placebo is a fake treatment which sometimes can give rise to real results.

Placebos are also used in drug research, to test the effectiveness of a drug. One group will be given a placebo and one group will be given a drug with active ingredients. The effects of both on patients and their symptoms will be compared.

The effects of placebos have been widely studied. Research has shown that placebos behave similarly to regular drugs in some ways.

For example:

- Like other medicine, placebo effects seem to follow a dose-response curve. This means that patients seem to feel better when they take 2 pills compared to 1 or if they take a bigger dose compared to a smaller dose.
- A placebo injection has more effect compared to a placebo pill.
- Placebos work better when patients are in more pain compared to less pain.

Why do placebos have any effect at all? If placebos do not contain any pharmacologically active ingredients, then why do some patients feel better after taking them?

The simple answer? The power of the mind. When patients have expectations of relief from any course of treatment, the more likely they are to experience it. However, what is important to remember is that although SOME placebos can make SOME people feel better, research has proven that placebos do not change the course of the disease or its outcome.

So in a way, placebos are temporary relief without addressing the underlying issue. Sometimes, they can affect health seeking behaviour. Patients who feel they are benefiting from placebos may delay seeking curative treatment, which can be detrimental.

Remember, feeling ok does not equal being ok.

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DON'T FORGET TO TELL YOUR DOCTOR ABOUT THOSE PILLS!

Some people take to social media to complain that their doctor asks too many questions at a time when they are not well. It is understandable that when someone is not at their best, they do not feel like answering like answering what may seem like an endless list of questions about their condition. And why would the doctor care what other medication I am taking or have taken? Why not just prescribe me some new pills and send me on my way to recovery?

The answer is simple. Not asking questions about your condition or your drug history can put you in danger. (Plus, doctors are not mind readers, we cannot get the necessary information without asking).

So, what should you tell your doctor?

If you are on any long term medications for conditions such as hypertension, diabetes or other chronic conditions, it is very important to inform the doctor. Even if your current illness is something completely different and seemingly irrelevant. Some conditions such as infections may affect these chronic conditions and require an adjustment to your previous medication as well as new ones to treat the new condition.

The medication you are currently on also affects the choice of medication prescribed to you. Some drugs interact with other drugs, for example certain antibiotics can cause increased risk of bleeding in patients taking warfarin. Drug interactions also include drugs that many patients forget are drugs, such as oral contraceptive pills. Some antibiotics can cause the oral contraceptive pill to be less effective (an unintended pregnancy!).

You should also tell your doctor if you have any known allergies to any medication. If you have ever experienced rashes, facial puffiness or shortness of breath after taking any medication, it is **IMPORTANT** to tell your doctor. The same reaction could happen if you receive the medication again, or even worse.



"But it's so hard to remember all the strange drug names ..." "Yes, it may be a bit difficult for non-medical people to remember the names of medication (especially if there are many of them). However, it is important, so an effort has to be made. I cannot recall how many times patients have answered "the small white one... round one... oval one..." when asked. Then there are the patients who plonk a plastic bag full of unlabelled pills and tablets of dubious origin.



To help (save) your doctor, here are a few simple tips:

- Always carry your appointment book/discharge summary/referral letter – doctors often write your medications and other important medical information
- Use your smartphone to keep a list of your medications
- Inform your family members (spouse/adult children) about your medication history

So, the next time your doctor asks you about your drug history, don't get annoyed, be patient and answer as best you can. Help us to help you.

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Finding out that a friend or loved one received a cancer diagnosis is devastating. The worst thing is, you feel helpless and unsure how to fix it. Perhaps the first thing to understand is that there may not be a way to “fix” this. However, there are always ways to help make things better.

How to respond when someone shares bad news ?

- **Acknowledge** - Sharing such important and grave news is something truly significant. Acknowledge this fact and appreciate this. Do not simply share the news with other people or post it on social media. Another person’s diagnosis is not yours to share, unless they have given you permission.
- **Keep in touch** - Do not be a stranger after hearing the news. Drop in for visits and call or text to ask how the person is. Do not smother or force them to go into details if they do not want to. Ask when the most appropriate time for them is. Just be there for them.
- **Positive affirmation** - Keep them motivated. Remind them how resilient and strong they are. Often. Because they are.

What are chemo comfort kits?

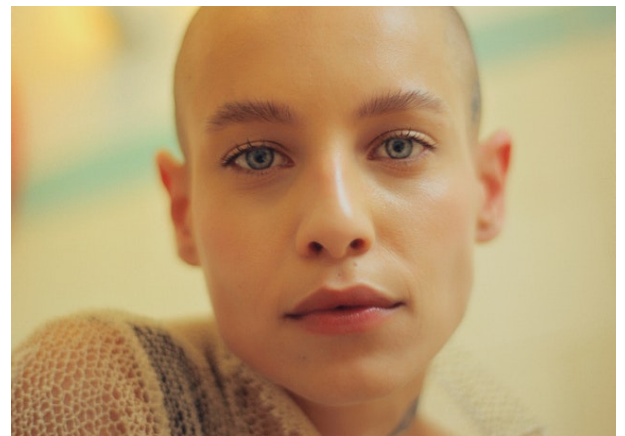
Chemo comfort kits are care packages that contain various different items intended both to comfort and entertain your loved one during their chemotherapy sessions. It can be considered a long term version of simply sending flowers, card or fruit basket. Studies have proven that chemo comfort kits decrease pain during treatment, help patients recover faster from chemotherapy sessions and helps improves nursing care. (Blackburn, Abel, Green, Johnson, & Panda, 2018)

What can be included in comfort kits?

The simple answer is, anything at all that can bring comfort or joy.

Here are some suggestions for comfort:

- Warm and Comfortable Clothing - Appropriate clothing can help during chemotherapy sessions because hospitals are often cold. One of the side effects of chemotherapy includes neuropathy (a type of nerve damage) and this can cause an increased sensitivity to extreme temperatures.
- Headwear (scarves & caps)
- Accessible clothing - easy access to chest/arms for chemo ports and branulas
Soft blankets
Cosy socks or slippers
- Gentle Skin Moisturizers and Soaps - One of the side effects of chemotherapy includes dry and sensitive skin. Hypoallergenic products are recommended.
- Lip Balm
- BPA-Free Water Bottle - Chemotherapy can cause nausea and vomiting. It is also important for the patient to stay well hydrated during sessions.



- Mouth Aids – Many patients also complain of “metal mouth” which is a dry and metallic taste after chemotherapy. Things such as chewy candy and fruits can alleviate “metal mouth” and also nausea. Oral rinses and gels can help with mouth ulcers, which are also a side effect of chemotherapy.
- Unscented Wet Wipes and Hand Sanitizer – Patients undergoing chemo have a lowered immunity so these will definitely come in handy (pun intended).
- Spa or Self-care Vouchers – the ultimate in comfort and pampering.

Some item suggestions for entertainment and good cheer:

- Magazines and books
- Puzzle books and colouring books
- Journal – this journey is a profound one. Many people find comfort in jotting down their thoughts and hopes. They may also want to write down questions they may have for their doctors.
- Music and movies – Good music is relaxing and helps pass the time. Create a playlist of their favourite songs or get them an iTunes Gift Card. Movies too.

Be creative! A chemo comfort kit is a way to bring a little cheer and comfort to a loved one going through a rough situation. So give from the heart.



WITH THE ADVENT OF SOCIAL MEDIA AND INFORMATION TECHNOLOGY, THE PUBLIC HAS UNLIMITED ACCESS OF INFORMATION AT THE CLICK OF A MOUSE. THEIR ENTHUSIASM TO TAKE AN ACTIVE PART IN THEIR OWN HEALTH CARE COUPLED WITH THE EASE OF INFORMATION IS UNFORTUNATELY OFTEN AT TIMES DETRIMENTAL DUE LARGELY TO THE FACT THAT THEY ARE UNABLE TO DIFFERENTIATE BETWEEN VALID SOURCES OF INFORMATION AND UNRELIABLE ONES.

THIS BOOK AIMS TO PROVIDE INFORMATION ON VARIOUS COMMON DRUGS IN MEDICINE FOR THE PUBLIC WRITTEN IN SIMPLE LANGUAGE BY A QUALIFIED MEDICAL PROFESSIONAL.

DR HIDAYATUL RADZIAH ISMAWI WAS BORN IN KUALA LUMPUR AND GRADUATED WITH AN MBBS FROM THE INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA (IIUM) IN 2005. SHE COMPLETED HER HOUSEMANSHIP TRAINING WITH A BRIEF STINT AS AN ANAESTHETIC MEDICAL OFFICER AT HOSPITAL TENGKU AMPUAN AFZAN BEFORE PURSUING HER MASTERS IN MEDICAL SCIENCES (PHARMACOLOGY) AT UNIVERSITI KEBANGSAAN MALAYSIA AND GRADUATED WITH A 4.0 CGPA. SHE OBTAINED HER PHD IN MEDICAL SCIENCES FROM IIUM IN 2020 AND IS CURRENTLY AN ASSISTANT PROFESSOR AT THE DEPARTMENT OF BASIC MEDICAL SCIENCES, KULLIYAH OF MEDICINE, IIUM.

DR HIDAYATUL RADZIAH IS ALSO THE CURRENT CHIEF EDITOR OF THE MALAYSIAN MEDICAL GAZETTE (MMGAZETTE.COM)

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