

CME SCHEDULE 2010

JUNE

Recent Advances in ENT for the Family Practitioner

Organizer : Department of Otorhinolaryngology
Date : 15 May 2010
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"Multi-Disciplinary Pain Management - Why is it better for my patient?"

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Date : 22 May 2010
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"Myopia: In The Young, Middle Aged & Elderly"

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HIGHLIGHTS

- 03 TTSH Complementary Integrative Medicine Clinic
- 06 Where East Meets West
- 08 Acupuncture Of Pain
- 10 AMRAD Imaging & Intervention Specialists
- 12 COLONOSCOPY - when do you need it?
- 14 GASTROSCOPY - when do you need it?
- 20 Thrombocytopenia - A Few Less Well-Known Facts
- 22 All New! TTSH Pain Management Clinic

Complementary and alternative medicine (CAM) has been a part of our healthcare system for many years. It is common practice among the various ethnic groups to consult traditional medicine practitioners for non-specific/general ailments. Of particular interest is traditional Chinese medicine (TCM), which is especially popular in the Chinese community. A survey in 2004 of 399 households in a high-rising estate with a racial distribution closely matching that of Singapore as a whole found that 76% of respondents had used complementary and alternative medicine over 12 months.⁽¹⁾

In the late nineties, an acupuncture clinic was started in Tan Tock Seng Hospital to meet the needs of our patients. Over the years, this service has grown and in 2003, was renamed to Complementary Integrative Medicine department to reflect the addition of other services. Currently, the clinic provides Traditional Acupuncture (acupuncture performed by TCM physicians), Medical Acupuncture (acupuncture performed by medical doctors based on neuroanatomical principles and Western medical diagnosis), Tui Na (推拿) (TCM-based therapeutic manipulation), Manual Medicine (manipulation performed by trained physical therapists) and TCM-based Dietary Medicine (dietary counselling to treat diseases and improve wellness). The clinic is also exploring the introduction of herbal medicine in the future.

Of the various CAM modalities, acupuncture is probably the most well studied and there is a growing body of evidence supporting its use in the treatment of pain (see article on Acupuncture in the management of pain). Apart from pain, it may also be effective in other conditions like allergic rhinitis, irritable bowel syndrome, nausea/vomiting secondary to chemotherapy and insomnia.

Apart from service provision, the department is also committed to education and relevant research. Talks to the public are conducted on a regular basis. In 2008, the department in conjunction with the Australian Medical Acupuncture Society held a 2-day meeting with the theme of "Acupuncture in integrative care". In research, the department has conducted studies on the efficacy of acupuncture in chemotherapy-related nausea/vomiting and chronic pain.^(2 & 3) One future research project in collaboration with the department of Ophthalmology is the evaluation of acupuncture as an adjunct in patients with dry eyes.

The use of CAM locally is likely to remain popular. Ignoring it is not an option. It would be better for healthcare professionals to familiarize themselves with CAM, if only to understand their patients better and to guide them effectively in healthcare choices.

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Dr Kong Keng He

Head, Complementary Integrative Medicine Clinic
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Complementary Integrative Medicine: where East meets West?

By Dr Karen Chua

East Meets West in one place? Is it possible? Patients often pursue complementary treatments together with conventional medicine and commonly do so without informing their physicians. Worse still, they may abandon proven conventional therapies without discussing these with their treating physicians

Complementary Alternative Medicine (CAM) refers to a group of diverse medical and health care systems, practices and products that are not generally considered to be part of conventional (standard) medicine. CAM is widely used in both adult and to some extent pediatric populations for cancer treatment, pain management, treatments for depression, rheumatologic diseases, diabetes mellitus, obesity, gynaecological conditions including menopause and subfertility and nausea and vomiting from various causes (pregnancy, motion sickness and post surgical or post chemotherapy)



- (i) **Complementary medicine** is used together with conventional medicine often as adjuncts to mainstream medical care. E.g. using acupuncture or acupressure together with anti emetics to relieve post chemotherapy nausea and vomiting.
- (ii) **Alternative medicine** is used in place of conventional medicine. These have the potential to negatively affect outcomes if patients delay needed and proven care. E.g. using special diets or herbs to treat cancer instead of undergoing surgery, radiotherapy and chemotherapy that is medically recommended to treat the tumour.

CAM therapies are generally classified into the following major groups:

- (1) **Whole medical systems:** these are built upon complete systems of theory and practice which have evolved apart from, and prior to the development of conventional medicine. E.g Traditional Chinese Medicine, acupuncture from China or Ayurveda, originating from India or Western homeopathic medicine and naturopathic medicine.
- (2) **Mind-Body Medicine:** these use a variety of techniques which enhance the mind's capacity to affect bodily function and symptoms. Many of these have been incorporated into main stream medicine from previous CAM perspectives. E.g. Cognitive-behavioural therapies and patient support groups have largely been incorporated into conventional medicine. Other mind-body practices such as music, art and dance therapies, meditation, prayer etc are still considered as CAM.
- (3) **Biologically based therapies:** refer to substances found in nature such as herbs, foods, vitamins, naturally occurring dietary supplements (e.g. shark cartilage)
- (4) **Manipulative and body-based practices:** these are based on manipulation and / or movement of one or more parts of the body. E.g. chiropractic or osteopathic manipulation, body massage and foot reflexology.
- (5) **Energy medicine:** the manipulation of purported energy fields involving the use of energy fields such as biofield therapies (Qi gong, Reiki and therapeutic touch) and bioelectromagnetic-based therapies (pulsed fields, magnetic fields and electrical current fields)

Although it is difficult to resolve how and why complementary therapies work, public interest has mushroomed resulting in multibillion dollar businesses worldwide. The public is often lured into a false sense of security as "naturally occurring" herbs, which often do not undergo stringent quality control and toxicity checks compared to pharmaceutical medicines, are thought to be safer than conventional drugs. In the past decade, scientific and clinical interest has grown in attempts to demystify these traditional medical systems and rigorous scientific research has been applied to CAM giving rise to an integrated approach.

The terms "Integrative medicine" or "Integrated medicine" are increasingly used to differentiate between unproven and unsafe practices and evidence-based complementary therapies. This preferred term of CIM is also accompanied by the application and insistence on rigorous evidence, safety audits and integration in practice with mainstream medicine. In addition, it also considers all aspects of a patient's lifestyle including physical, mental and spiritual domains.

For example, certain CAM practices when used in integrative oncology centres, like body massage, foot reflexology, acupuncture, mind-body therapies like meditation, hypnosis, relaxation and cognitive-behavioural therapies, music therapies and physical fitness are potentially useful evidence-based adjunctive therapies to reduce pain and treat emotional symptoms in cancer survivors. In addition, they have very favourable risk-benefit ratios with low likelihood of harmful side effects and have been demonstrated to be able to control side effects and enhance quality of life. CIM also allows patients to selectively choose treatments suited to their needs and participate actively in their own recovery and outcome. Integration of CIM practice and beliefs with conventional medicine can expand available treatment options for complex diseases, improve provider and patient satisfaction, balance the deficiencies in each system, reduce reliance on medications and lead to improved therapeutic outcomes.

There is currently no best model for integration due to the diversities of CAM practices, varying practitioner backgrounds and training and differing financial reimbursement systems. TTSH CIM is a multidisciplinary clinic which practices mainly acupuncture and Traditional Chinese Medicine integrated with mainstream medical consultations and manipulative and body-based practices. At CIM, patients have equal opportunities to be treated by either Western practitioners who are qualified medical acupuncturists or Traditional Chinese Medicine (TCM) practitioners who work in partnership to blend both types of practices harmoniously. This is supported by a culture of continuous outcome monitoring, regular audits on safety and reviews of evidence based practices for various conditions. Open communication and continuous medical education programmes between both groups of practitioners and selected cross training practices strive to break down barriers between differing backgrounds and training fields. Patients are also encouraged actively participate in their management either individually or in group therapies.

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SPOTLIGHT



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Dr. Karen Chua Sui Geok was trained as a rehabilitation specialist in Singapore and obtained a fellowship in brain injury rehabilitation from Baylor college of medicine, Houston, USA in 1998. She currently practices at the 93 bedded TTSH Rehabilitation Centre and the TTSH Complementary Integrative Medicine clinic. She has specialised interests and experience in the subspeciality field of neurorehabilitation including stroke, brain injury and pain management. She is also trained in interventional spasticity management and medical acupuncture and heads the rehabilitation technology workgroup at the rehabilitation centre.



ACUPUNCTURE for PAIN management

WHAT IS ACUPUNCTURE?

Acupuncture derives from the Latin words “acus” (needle) and “punctura”(puncture) and refers to the practice of inserting needles into parts of the body to treat diseases.

WHAT IS THE BASIS OF TRADITIONAL CHINESE ACUPUNCTURE?

Traditional Chinese acupuncture is a philosophy that focuses more on prevention than treatment of illnesses. The Chinese medical acupuncture philosophy presumes that there are two opposing and complementary forces that coexist in nature: Yin and Yang. These two forces interact to regulate the flow of “vital energy,” known as Qi. When a person is in “good health,” Yin and Yang are in balance, and the flow of Qi is smooth and regular. When Yin and Yang become “unbalanced,” there are disturbances in Qi, which lead to illness and disease. The ancient Chinese believed that Qi flows through a network of channels called meridians, which bring Qi from the internal organs to the skin surface. Along these meridians there are acupuncture points that can be stimulated to correct the imbalance and restore the body to normal health.

WHAT ARE THE BIOMEDICAL MECHANISMS OF ACUPUNCTURE IN PAIN MANAGEMENT?

The mechanisms of acupuncture in pain relief are as follows:

a. Acupuncture stimulation activates A-delta and C afferent fibers in muscle, causing signals to be transmitted to the spinal cord, which then results in a local release of dynorphin and enkephalins. These afferent pathways propagate to the midbrain, triggering a sequence of excitatory and inhibitory mediators in the spinal cord. The resultant release of neurotransmitters, such as serotonin, dopamine, and norepinephrine onto the spinal cord leads to pre and postsynaptic inhibition and suppression of the pain transmission. When these signals reach the hypothalamus and pituitary, they trigger the release of adrenocorticotrophic hormones (ACTH) and endorphins.

The effects of acupuncture on pain processing are also supported by neuroimaging studies involving PET scans and functional MRI which show deactivation of areas of the limbic system (involve in pain processing) when acupoints are needed.

b. Deactivation of myofascial trigger point. A trigger point is a focus of hyperirritability in a muscle or its fascia that causes a pattern of referred pain at rest and/or motion that is specific for that muscle. On palpation, one may be able to detect a taut band or knot over the trigger point. Trigger points are characteristic of myofascial pain syndrome which is probably the commonest cause of musculoskeletal pain. An example is myofascial pain of the trapezius muscle causing unilateral headache and neck pain. This pain can be effectively treated by needling the trapezius trigger point which deactivates the trigger point. Interestingly, there is a high correspondence (more than 70%) between trigger points of and acupuncture points. Thus the trapezius trigger point corresponds exactly to the acupoint GB21.

WHAT ARE THE OTHER TREATMENT MODALITIES ASSOCIATED WITH ACUPUNCTURE?

a. Electrical stimulation - sometimes, electrical stimulation is used to stimulate the needles, usually for about 20-30 minutes. This is also known as electroacupuncture. Low frequency electrical stimulation preferentially releases beta-endorphin and met-enkephalin while high frequency stimulation releases dynorphin. To maximize pain relief, one may alternate low and high frequency electrical stimulation. Of interest is the finding that prolonged stimulation may actually decrease the efficacy of acupuncture analgesia because of the release of cholecystokinin, an anti-opioid.

b. Moxibustion – this is the burning of mugwort, a small, spongy herb to stimulate the flow of blood and qi. There are 2 types of moxibustion: direct and indirect. In direct moxibustion, a small, cone-shaped amount of moxa is placed on top of an acupuncture point and burned. Indirect moxibustion is currently the more popular form of care because there is a much lower risk of pain or burning. In indirect moxibustion, a practitioner lights one end of a moxa stick, roughly the shape and size of a cigar, and holds it close to the area being treated for several minutes until the area turns red.

c. Cupping - this is a method of stimulating acupuncture points by applying suction through a metal, wood or glass jar, in which a partial vacuum has been created. This technique produces blood congestion at the site, and therefore stimulates it. Cupping is used for low backache, sprains and soft tissue injuries.

ARE THERE ANY CONTRAINDICATIONS TO ACUPUNCTURE?

Acupuncture is generally very safe when performed by trained practitioners. Relative contraindications to acupuncture include patients with bleeding diatheses and those on anticoagulation. Patients with valvular heart disease or with prosthetic valves should avoid acupuncture because of the potential risk of bacterial endocarditis.

SPOTLIGHT



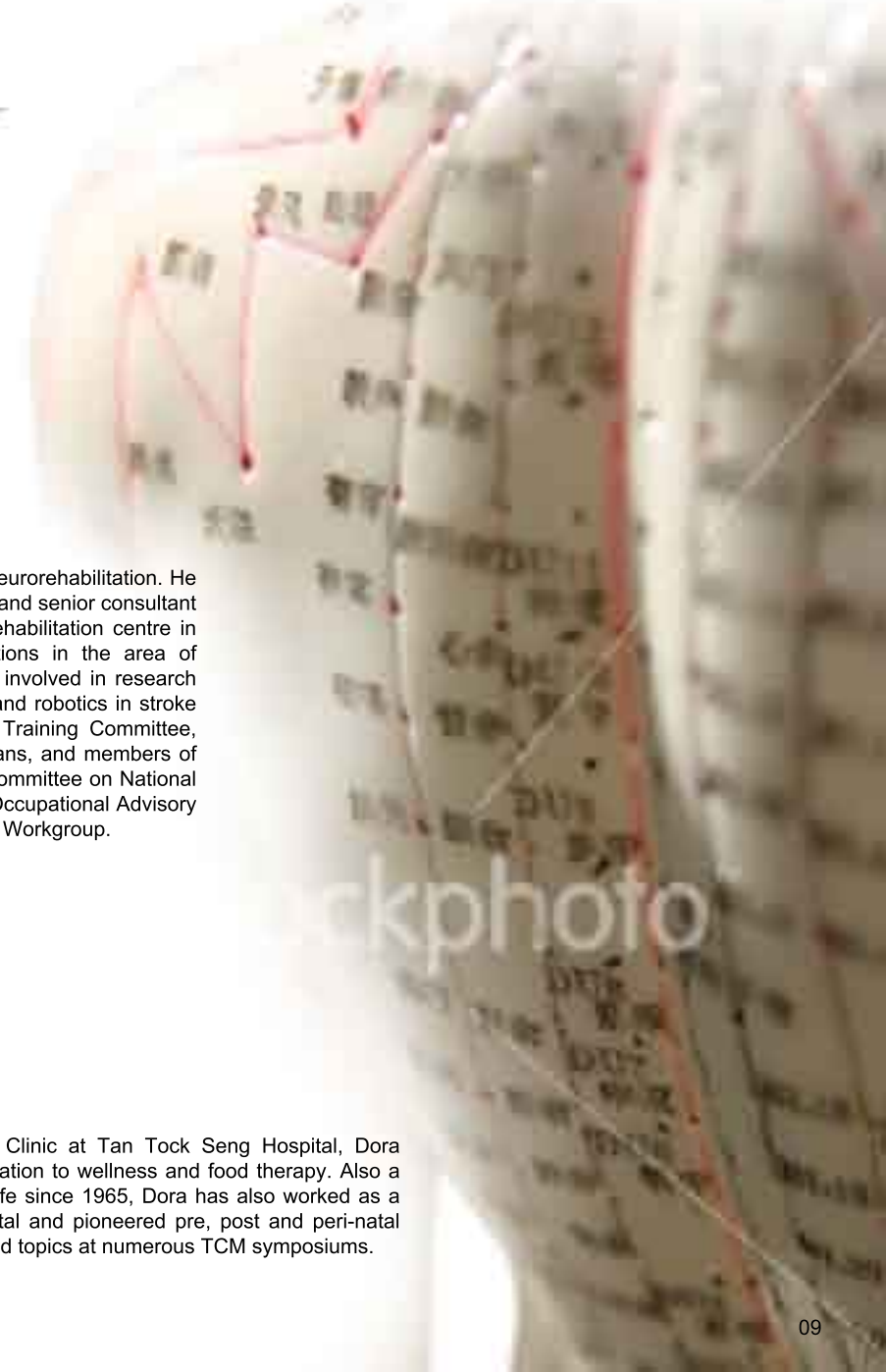
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Dr. Kong is a leading local rehabilitation physician specializing in neurorehabilitation. He is currently the Head of Complementary Integrative Medicine Clinic and senior consultant at the TTSH Rehabilitation Centre, which is the largest tertiary rehabilitation centre in Singapore. He has established research interests and publications in the area of functional outcomes and spasticity in stroke. More recently, he is involved in research evaluating the role of computer gaming and assistive technology and robotics in stroke rehabilitation. He is currently the chairperson of the Specialists Training Committee, Ministry of Health, overseeing the training of rehabilitation physicians, and members of several committees, including that of Ministry of Health Advisory Committee on National Stroke Strategy, Nanyang Polytechnic School of Health Sciences Occupational Advisory Panel and National Healthcare Group Stroke Disease Management Workgroup.



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Head Acupuncturist of the Complementary Integrative Medicine Clinic at Tan Tock Seng Hospital, Dora integrates the best of Western and Chinese health practices in relation to wellness and food therapy. Also a Western trained State Registered Nurse and State Certified Midwife since 1965, Dora has also worked as a Nursing Sister with the pediatrics department at Alexandra Hospital and pioneered pre, post and peri-natal mother craft classes there. She has spoken regularly on TCM related topics at numerous TCM symposiums.



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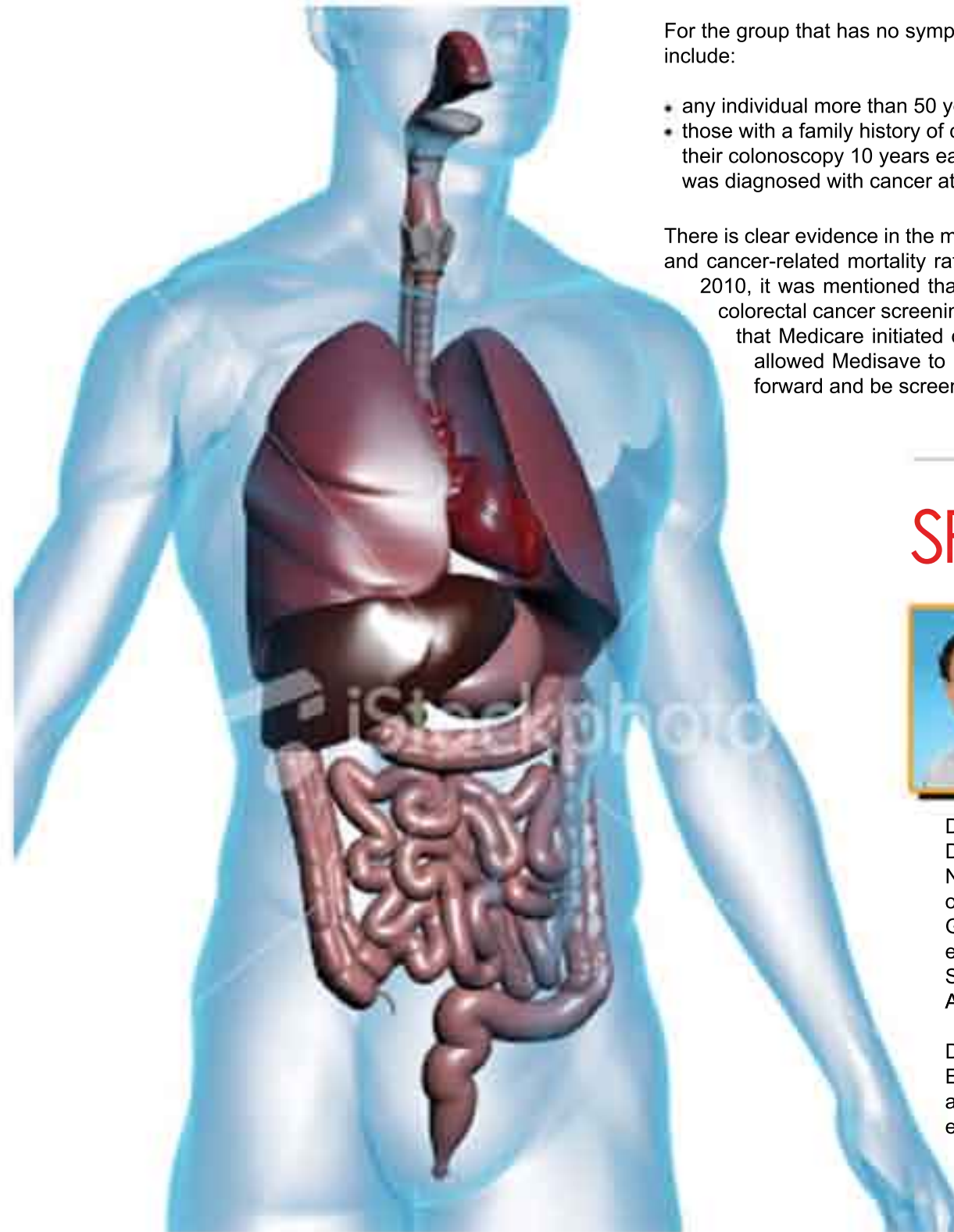
COLONOSCOPY - when do you **need** it?

By Dr Ho Choon Kiat

Besides modalities like Barium enema and CT Colography, Colonoscopy is but another method to evaluate the large intestine. However unlike the 2 previously mentioned modalities which are purely diagnostic, Colonoscopy is the only modality that has both diagnostic and therapeutic potential. During colonoscopy, the endoscopist will carefully advance the endoscope to the caecum so as to evaluate the entire length of the large bowel. If the clinical condition requires it, the endoscopist can even cannulate and examine the terminal ileum. The biggest advantage of a colonoscopy is the ability to perform additional procedures. This includes obtaining a tissue biopsy from suspicious lesions for a histological diagnosis. The endoscopist can also arrest bleeding. More importantly, the endoscopist can sometimes completely remove neoplastic lesions like polyps. Most colorectal cancers arise from small adenomatous polyps. With time, such polyps will grow and mutate into cancerous tumours. By removing such polyps before they turn cancerous, we can effectively prevent colorectal cancer. The problem with these polyps is that they tend to be asymptomatic. By the time patients present with symptoms, there is a chance that such polyps have already developed into cancer.

Hence patients who may require a colonoscopic evaluation fall into 2 broad groups. People in the first group are those who have no symptoms but are at risk of colorectal polyp or cancer. The second group will include those patients who complain of the following symptoms:

- change in their bowel habits
- frank bleeding per rectum. For such patients, they will need to be evaluated carefully before attributing the bleeding to haemorrhoids. Haemorrhoidal bleeding tends to be fresh. The blood may even drip down following defaecation. On the other hand, bleeding from neoplastic lesions tend to be darker red in colour, and may be mixed with the stools.
- occult bleeding per rectum. This group of patients are those who have a positive Faecal Occult Blood Test (FOBT). With the increasing use of the FOBT kit or the Faecal Immunochemical test (FIT) kit for colorectal cancer screening in Singapore, GPs can expect to see more of such patients.
- a reduction in the calibre of the stools
- tenesmus or the sensation of incomplete evacuation
- unexplained loss of appetite or loss of weight
- persistent or recurrent unexplained abdominal pain
- anaemia



For the group that has no symptoms, they are mainly people who have a higher risk of colorectal polyp or cancers. These include:

- any individual more than 50 years of age. This applies to both males and females.
- those with a family history of colorectal cancer, particularly in a first-degree relative. For such patients, they should have their colonoscopy 10 years earlier than the age their relative was diagnosed with colorectal cancer, e.g. if the relative was diagnosed with cancer at age 50, the patient should have the first colonoscopy at age 40.

There is clear evidence in the medical literature that colorectal cancer screening can reduce the incidence of colon cancer and cancer-related mortality rates. In a recent publication from the American National Institutes of Health (NIH) in Feb 2010, it was mentioned that since 2001, colonoscopy has emerged as the most widely used screening method for colorectal cancer screening in the United States. Besides its added therapeutic potential, a more plausible reason is that Medicare initiated coverage of screening colonoscopy since 2001. In Singapore, the Government has now allowed Medisave to be used to cover colonoscopy. It is hoped that with this initiative, more people will come forward and be screened. The take home message is that colorectal cancer screening saves lives.

SPOTLIGHT



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Dr Ho is a consultant surgeon with the Department of General Surgery and the Digestive Disease Center at Tan Tock Seng Hospital. He graduated from the medical school at the National University of Singapore in 1994, and was admitted as a Fellow to the Royal College of Surgeons of Edinburgh as well as the Royal College of Physicians and Surgeons of Glasgow in 1999. He was successful in the Joint Specialty Fellowship in General Surgery examination in 2003 and was certified a Specialist by the Specialist Accreditation Board of Singapore. He was subsequently admitted as a Fellow to the College of Surgeons, Academy of Medicine of Singapore.

Dr Ho has a special interest in endoscopy and is the current Director of the TTSH Endoscopy Centre. He hopes to increase the public's awareness of the role of endoscopy, and to facilitate the public's access to endoscopy through schemes like direct-access endoscopy and community based satellite endoscopy units.

GASTROSCOPY

By Dr Quan Wai Leong

- when do you **need** it?

One of the many challenges that many of us face in our daily clinical practice is GI related. In fact, other than respiratory conditions, GI related symptoms are arguably the most common complaints that we encounter in our office based practice. However, unlike chronic conditions such as diabetes and hypertension where there are figures and parameters to guide us in bedside diagnosis and management, gastrointestinal symptoms can be non-specific. As a result, vague terms such as "dyspepsia" and "colic" are commonly used in our daily practice to include bloating, pain, belching and early satiety experience by patients.

Among the many upper GI conditions, gastroesophageal reflux disease (GERD) is probably the best defined problem. Heartburn is the hallmark symptom of GERD. Although some patients may present with other manifestations include acid regurgitation and dysphagia, others may have atypical symptoms including angina-like pain or airway induced symptoms.

It is not uncommon for patients with chronic GERD to undergo an upper endoscopy to exclude oesophagitis and Barrett's oesophagus which has a small potential for malignant transformation. Data from the West has supported a one-off upper endoscopic examination for obese white male with chronic GERD to exclude Barrett's oesophagus. However, clinical evidence for such practice is lacking in our local context. In very severe or complicated cases, endoscopic therapy and surgery may be required as definitive treatment.

Dyspepsia is another common condition with an estimated prevalence of 25 to 50 percent in Western countries and approximately 15 to 30 percent in Asian countries including Korea and Singapore.

It can be defined as a symptom complex of epigastric pain or discomfort which originates in the upper GI tract. It consists of a constellation of heterogeneous symptoms that may or may not indicate identifiable upper GI disease. Such symptoms include bloating, early satiety and sensation of indigestion.

As dyspepsia is a clinical diagnosis based on symptoms, specific conditions, such as gastritis, peptic ulcer disease or duodenitis can only be diagnosed during endoscopy. In the absence of an identifiable lesion after an upper

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As dyspepsia is a clinical diagnosis based on symptoms, specific conditions, such as gastritis, peptic ulcer disease or duodenitis can only be diagnosed during endoscopy. In the absence of an identifiable lesion after an upper endoscopy, the patient is considered to have functional dyspepsia or non-ulcer dyspepsia.

To date, the most challenging aspect in managing dyspepsia is to identify those patients whom an upper endoscopy would make a difference in their management especially to exclude malignancy. It is recommended for patients with recent onset dyspepsia and one of the followings to undergo an upper endoscopic examination:

1. age > 35
2. unexplained weight loss
3. vomiting
4. dysphagia
5. anaemia/melaena
6. abdominal masses on examination

Recent data has suggested that majority of peptic ulcers are the result of long term medication such as aspirin or other NSAIDs and Helicobacter Pylori (HP) infection. Avoiding or eradicating these risk factors will reduce the ulcer relapse rate significantly. Post HP eradication can be confirmed via urea breath test (UBT) if there is no indication for a repeat upper endoscopy.

Therapy for dyspepsia is dependent on the actual diagnosis and the presence or absence of complications. Common treatment regimes include the use of acid suppression medicine such as H2-blockers or proton pump inhibitors. Antibiotics are also commonly prescribed for eradicating HP infection. For patients with non-ulcer dyspepsia, medicine that regulates gut motility or a low dose anti-depressant may be effective in reducing the discomfort.

The follow-up strategy for dyspepsia is again dependent on the final diagnosis. Repeat endoscopy may be needed for patients diagnosed with gastric ulcer disease to document healing and clearance of HP infection. Most patients with non-ulcer dyspepsia will be given therapy which is driven by symptoms with infrequent outpatient follow-up appointments.



SPOTLIGHT



Dr Quan Wai Leong
Deputy Director, Endoscopy Centre
Consultant, Department of Gastroenterology
Tan Tock Seng Hospital

Dr Quan is a consultant surgeon with the Department of Gastroenterology at Tan Tock Seng Hospital. His specializations include Endoscopic Retrograde and Cholangio-Pancreatography (ERCP). Dr Quan is also currently serving as Deputy Director of the TTSH Endoscopy Centre.

Endoscopy Centre

Services

- Brochoscopy
- ERCP
- EUS
- Colonoscopy
- ESWL
- EBUS
- Cystoscopy
- Gastroscopy

Direct Access Endoscopy

WHAT IS DIRECT ACCESS ENDOSCOPY?

Direct Access endoscopy is an initiative that allows the GPs to have, as the name suggests, "direct access" to the endoscopy services, without first having to go through a specialist consult. The GPs determine whether their patients require a scope based on their own clinical judgment, and thus save their patients a trip for a consultation with a specialist. Following the endoscopy, the patients are asked to return to their own GPs for a review along with a report on the endoscopic findings, usually within 5 working days. If a biopsy was taken, the histopathology report will be faxed to the GPs by that review date. The GPs will then decide on the subsequent management. This initiative thus preserves the autonomy of the GPs over the management of their own patients. It also allows for continuity of care.

PRE-PROCEDURAL COUNSELLING

All patients scheduled for endoscopy will have some form of pre-procedural counselling. We understand that GPs have a busy clinic schedule, and hence, to make the referral process as hassle-free as possible, all we need is the patient's particulars and his/her contact number. Our nurses will then contact this patient to provide the counselling. We will also send the patient information leaflets to further reinforce these instructions which will include issues like pre-procedural fasting, whether to continue or stop their usual medications for their chronic conditions, etc. We are mindful that not all GPs stocked these drugs that we use for bowel cleansing. As such, we provide the service of sending these drugs by post to participating GPs along with a printed copy of the instructions on how to take such drugs.

ARE YOUR PATIENTS FIT FOR ENDOSCOPY?

Patients referred for direct access endoscopy should generally be healthy. Chronic medical conditions such as hypertension or diabetes, if well controlled, do not preclude patients from enjoying this service. For patients scheduled for a colonoscopy, they will require to take some purgatives to clean out their bowel. As such, patients with renal impairment, heart disease or known to have electrolyte imbalances should perhaps be referred to a specialist first. Elderly patients, specifically those above 70 years old, should ideally be referred to a specialist for an evaluation rather than Direct Access endoscopy.

CONTACT US

TTSH ENDOSCOPY CENTRE
Level 2, Tan Tock Seng Hospital
Tel: 97208601 / 63573766 / 63573767
Fax: 63573765

Opening Hours
Monday to Friday: 7am to 7pm
Saturday: 8am to 12pm
Sunday & Public Holiday: Closed

Department of Laboratory Medicine (DLM)

One of the largest laboratories in Singapore, TTSH Department of Laboratory Medicine (DLM) has a staff strength of about 190 which comprises a dedicated team of consultants, medical technologists, phlebotomists and other support staff. It offers a broad range of affordable and accurate laboratory tests, using sophisticated, automated and state-of-the-art equipment technology. Laboratory Automation has improved the turn around time significantly, thus enabling results to reach clinicians faster for earlier intervention, better patient care and shorter waiting time in clinics. Automation has also improved the safety of staff handling these samples. Every year the laboratory generates about 4 million test results and lab staff strive to ensure that the correct result reaches the right patient within the shortest period of time.

DLM is licensed by the Ministry of Health, Singapore (Private Hospitals and Medical Clinics Act). It actively participates in the External Quality Assurance Programme provided by College of American Pathologists and Royal College of Pathologists of Australasia. Being internationally accredited by the Joint Commission International (JCI) and College of American Pathologists (CAP), TTSH DLM is committed to continuously improve and maintain the quality of its services.

Our laboratories perform a wide variety of diagnostic tests on blood, other body fluids and tissues to help doctors diagnose disease, monitor response to therapy and to screen for diseases. Consultant specialists offer advice on interpretation of results and suggestions for further investigations.

Our services include:

Clinical Chemistry

- Routine chemistry
- Tumour markers
- Therapeutic drug monitoring
- Immunochemistry
- Urine microscopy

Haematology

- Routine haematology
- Bone marrow studies
- Coagulation studies
- Thalassemia studies
- Flow cytometry

Clinical Microbiology

- Bacteriology
- Mycology
- Parasitology
- Serology
- Molecular diagnostics

Blood Transfusion Services

- Blood grouping / cross Matching
- Antibody screen
- Cross matching
- Investigation of transfusion reactions
- Provide blood and blood products

PHLEBOTOMY SERVICES

Our phlebotomists not only serve TTSH and CDC patients but provide value added service to our patients from Novena Medical Centre to cater to the convenience of having their blood samples collected in the comfort of their clinic. We also provide phlebotomy service at the lab to walk-in patients who are normally referred by external general practitioners.



Our Specialists



Dr Prabha Krishnan
Head, Senior Consultant
Microbiology



Clin. A/Prof P Kuperan
Senior Consultant
Haematology
Blood Transfusion Service



Dr Robert Hawkins
Senior Consultant
Chemical Pathology



Dr Timothy Barkham
Senior Consultant
Microbiology



Dr Ong Yong Wan
Senior Consultant (Part-Time)
Haematology
Blood Transfusion Service



Dr Lee Lian King
Senior Consultant
Haematology
Blood Transfusion Service



Dr Ong Kiat Hoe
Consultant
Haematology
Blood Transfusion Service



Dr Fong Sing Zern
Associate Consultant
Haematology
Blood Transfusion Service



Dr Chiam Yaw Yung
Associate Consultant
Haematology
Blood Transfusion Service



Dr Lim Yen Chian
Registrar
Haematology
Blood Transfusion Service

CONTACT US

TTSH DEPARTMENT OF LABORATORY MEDICINE

Person : Ms Tham Mee Eng (Client Services)
Mobile : 81263693
Helpline : 63578939
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Email : mee_eng_tham@ttsh.com.sg

Our operating hours

Mon to Fri 8.00 am to 5.00 pm
Sat 8.00 am to 12.00 pm
Sun & PH Closed

DEPARTMENT OF HAEMATOLOGY

INTRODUCTION

The Haematology clinics in TTSH, in conjunction with the haematology laboratory and the Blood Transfusion Service of the Department of Laboratory Medicine, provide a wide range of diagnostic and treatment services for our haematology patients and referrals. Run by specialists and haematology registrars, we provide care to patients with a broad range of benign and malignant haematological disorders.

SERVICES PROVIDED

Patients with any of the following disorders are managed at our clinics:

- Cytopenias
 - anaemias
 - thrombocytopenia
 - leukopenia
- Myeloproliferative disorders
- Chronic leukemias
- Lymphoproliferative disorders
- Myelodysplastic syndromes
- Plasma cell dyscrasias eg multiple myeloma
- Thrombotic and bleeding disorders

OUTPATIENT SERVICES AVAILABLE:

- Bone marrow aspiration and trephine biopsy
- Outpatient therapeutic venesection

CONTACT US

TTSH DEPARTMENT OF HAEMATOLOGY

Tel: 6357 8926
Fax: 6253 6507



Thrombocytopenia – a few *lesser known facts*

Thrombocytopenia is one of the most common abnormal findings among patients not only in the hospital setting but also in the general practice setting. This article aims to highlight a few issues about thrombocytopenia which I think is not well-appreciated among the general medical community.

DEFINITION

Although it is relatively less common to encounter patients in the general practice setting with severe thrombocytopenia, the need to refer almost all these patients to a hospital for further evaluation is obvious and therefore poses not much of a management problem for the family physician. Hence it is important to define the severity of thrombocytopenia.

Most haematology laboratories, be they private laboratories or hospital laboratories, will show a normal platelet count to range roughly between $150 \times 10^9/L$ to $400 \times 10^9/L$. Here in Tan Tock Seng Hospital, the range is from 170 to $420 \times 10^9/L$.

Most laboratories establish their ranges by evaluating the platelet count of about 120 different healthy subjects. From these subjects, the average platelet count and the standard deviation are derived and the range is set from -2 to $+2$ standard deviations. Just by this statistical methodology, one of the more common causes of thrombocytopenia is automatically “created”, as one out of 40 “normal” people will fall below the range established.

These “normal” people whose platelet count fall outside the normal range generally have platelet counts above $100 \times 10^9/L$. Coincidentally, there is usually no bleeding tendency, even in the face of major surgical stress, if the platelet count is $> 100 \times 10^9/L$. Hence it is convenient to define a mild thrombocytopenia as any platelet count ranging from $100 \times 10^9/L$ to the lower limit of the normal reference range.

Yet, it is dangerous to disregard patients with mild thrombocytopenia, as this may be the first sign of a serious medical condition. But before we delve into the varied causes of thrombocytopenia, it is important to know how platelet counts vary in a normal individual.

NORMAL PLATELET VARIATION

A normal individual's platelet count has a strong heritable component, i.e., a person is “born” with his/ her platelet count. A normal individual varies his/ her platelet count only very slightly if he/ she does not suffer from any acute medical conditions. A study on platelet variation found that both normal males and females have a seasonal variation (difference between winter and summer) of about $5 \times 10^9/L$.¹

What this implies is that if a patient's platelet count is normally about $150-160 \times 10^9/L$, it is possible that his platelet count may dip to below the normal range when he comes to consult for an upper respiratory tract infection or some viral fever and remains persistently slightly below the normal range (due to laboratory variations) even after recovery from the acute viral illness. The corollary to this point is that if a patient's normal platelet count is between $350-400 \times 10^9/L$, then a reduction of his platelet count to $200 \times 10^9/L$ is abnormal even though it is still within the normal reference range. The former situation would have no clinical implications for the patient whereas the latter patient ironically may need further evaluation.

No doubt it is the rare patient in the family practice setting that has a record of serial full blood counts, but the above discussion highlights the importance of one in evaluating the problem of mild thrombocytopenia and the advantages of a national electronic medical records system where blood investigations done at hospitals and polyclinics are accessible to all medical practitioners.

HOW TO EVALUATE THE CAUSES OF THROMBOCYTOPENIA

What then should a family physician do when encountering a patient with mild thrombocytopenia? Other than a detailed history with systemic review to exclude infective causes of thrombocytopenia like dengue and malaria, it is also imperative to take a detailed drug history, as many medications, both prescription and over-the-counter, have been reported to cause thrombocytopenia of varying severity. If there is a suspicious drug that seems to be temporally related to the thrombocytopenia, the patient should be advised to stop taking the drug especially if the drug is not clinically indicated.

Thrombocytopenia can be false (pseudo-thrombocytopenia) and this is usually due to the technical aspects of blood-taking. Difficult venous access and a slow flow into the sample tube can trigger the clotting process, causing consumption of platelets. Insufficient or expired anticoagulants in the sample tube or an over-filled sample tube can result in the formation of fibrin clumps, resulting in spuriously low platelet results. About one in 1000 patients may have an EDTA (the anticoagulant most commonly used full blood count samples) –dependent factor that can cause platelet clumping and hence pseudo- thrombocytopenia. Hence, the next thing that the family physician should do is to repeat the full blood count and order a peripheral blood film at the same time, bearing in mind the technical aspects of blood-taking which can affect accurate platelet enumeration.

If the mild thrombocytopenia is persistent after the above is done, there are two conditions that should be borne in mind in further evaluating the patient. Among patients with mild thrombocytopenia that I have been following, autoimmune disorders or the presence of some form of auto-antibody is quite commonly found. Though a study has not been done to compare the prevalence of autoimmune disorders and auto-antibodies between thrombocytopenic and non- thrombocytopenic patients, an Italian study following 190 patients with mild thrombocytopenia over an average of five years showed that the cumulative incidence of autoimmune disorders developing prospectively is about 12% over 10 years.² Hence, family physicians should be on the look-out for symptoms and signs suggestive of an autoimmune disorder in both the initial evaluation and follow up of patients (especially female) with mild thrombocytopenia.

SPOTLIGHT



Dr Ong Kiat Hoe
Consultant
Haematology
Blood Transfusion Service

Dr. Ong is a consultant hematologist with the Department of Laboratory Medicine at Tan Tock Seng Hospital, with specializations in Haematology and blood transfusion service. He graduated from medical school at the National University of Singapore in 1994 and was admitted as a fellow to the Royal College of Physicians (UK) in 2000. He was also a fellow of the Royal College of Pathologists of Australasia. Dr Ong is currently holding the position of Vice-President at the Singapore Society of Haematology.

PAIN MANAGEMENT CLINIC

ABOUT US

The Pain Management Clinic, PMC@TTSH, offers a range of treatment options for people suffering from acute and chronic pain, a common occurrence with diseases, surgeries or trauma. A team of physicians, nurse clinicians, occupational therapists, physiotherapists and psychologists can holistically manage the different pain conditions.

The management approach for each person can vary according to the presenting pain conditions, which may include:

- Back, neck and head pains
- Chronic abdominal pain and pelvic pain
- Complex regional pain syndrome
- Cancer Pain
- Disorders of the nervous system including shingles and trigeminal neuralgia
- Limb pain arising from vascular insufficiency
- Musculoskeletal pain (pain arising from muscles, joints, bony and soft tissue injuries)
- Pain associated and/or persistent despite surgeries or treatment

OUR CLINICS AND SERVICES

Different persons suffering from similar pain conditions can respond differently with the same treatment. Often patients suffering from chronic pain not only suffer from physical pain but would have experienced life changes as a result of their long-term pain condition. For pain treatments to work optimally and benefit each individual seen at PMC@TTSH, a holistic assessment and a tailored management is important. Care would be coordinated amongst the different pain practitioners to achieve good rehabilitation.

The services offered in the broad categories of pain management services include:

- Assessing and evaluating patients with pain.
- Recommending the appropriate investigations that may include blood investigations, nerve conduction studies and radiological investigations.

- Prescribing appropriate medications to treat the pain.
- Recommending appropriate therapy, which includes physiotherapy, occupational therapy and/or intensive pain management programme. Click
- Appropriate review of patients with further adjustment in treatment if necessary.
- These services are manned in specific clinics according to the nature of pain and/or the groups of individuals suffering from pain. Referrals to PMC will be triaged and individuals will be directed accordingly to:

- o Interventional Pain Management
- o Musculoskeletal Pain Management
- o Cancer Pain Management
- o Elderly Pain Management

The broad categories of painful conditions that services include:

- Back, neck and head pains
- Chronic abdominal pain and pelvic pain
- Complex regional pain syndrome
- Cancer Pain
- Disorders of the nervous system including shingles and trigeminal neuralgia
- Limb pain arising from vascular insufficiency
- Musculoskeletal pain (pain arising from muscles, joints, bony and soft tissue injuries)
- Pain associated and/or persistent despite surgeries or treatment

REFERRING TO PMC@TTSH

The services offered to the patients are dependent on the nature of functional impairment and disability. The management approaches will also vary according to the complexity of the patient's condition and the required scope of care required.

Our Specialists



Dr Yeo Swan Thong, Vincent
Clinical Director & Consultant
MBBS, MMed (Anaes)
Chronic and Interventional Pain Management



Dr Chan Kay Fei
Head and Senior Consultant
MBBS, MRCP (UK), FAMS
Musculoskeletal Rehabilitation, Pain Management, Occupational Rehabilitation



Dr Tow Per Er, Adela May
Senior Consultant
MBBS, MRCP, FAMS
Spinal Injury Rehabilitation, Pain Management, Urodynamic Studies, Medical Acupuncture



Dr Tjan Soon Yin
Consultant
MBBS, MRCP (UK), FAMS
Chronic Pain Management, Musculoskeletal & Amputee Rehabilitation



Dr Nicholas Ng
Consultant
MBBS, MMed (Anaes), FIPP, FAMS
Chronic Head and Neck Pain, Neuromodulation



Dr Yap Eng Ching
Consultant
MB ChB, MRCP, FAMS
Spine, Sports and Musculoskeletal Rehabilitation



Dr Leong Yi Onn, Ian
Senior Consultant
MBBS, MMED (Int Med), FRCP (Edin), FAMS
Elderly Pain Service



Dr Tan Huei Nuo
Associate Consultant
MBBS, MRCP
Elderly Pain Service



Dr Wu Huei Yaw
Head & Consultant
MBBS, MRCP (UK), FAMS, DPM (Wales)
Palliative Care Service



Dr Hum Yin Mei, AllynWu Huei Yaw
Associate Consultant
MBBS, MRCP
Palliative Care Service



Ms Yang Su Yin
Senior Psychologist
BSc Psychology (Hons), MSc Health PsychologyMMED
Pain Psychology & Cognitive Behavioural Therapy



Ms Loy Fong Ling
Principal Physiotherapist
MSc (Hon) Physiotherapy
MScMed Pain Management
Musculoskeletal Physiotherapy & Pain Management

CONTACT US

PAIN MANAGEMENT CLINIC

Opening Hours
Monday – Friday: 8.00 am to 5.30 pm
Saturday, Sunday and Public Holiday: Closed

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