第九十七期 issue 97
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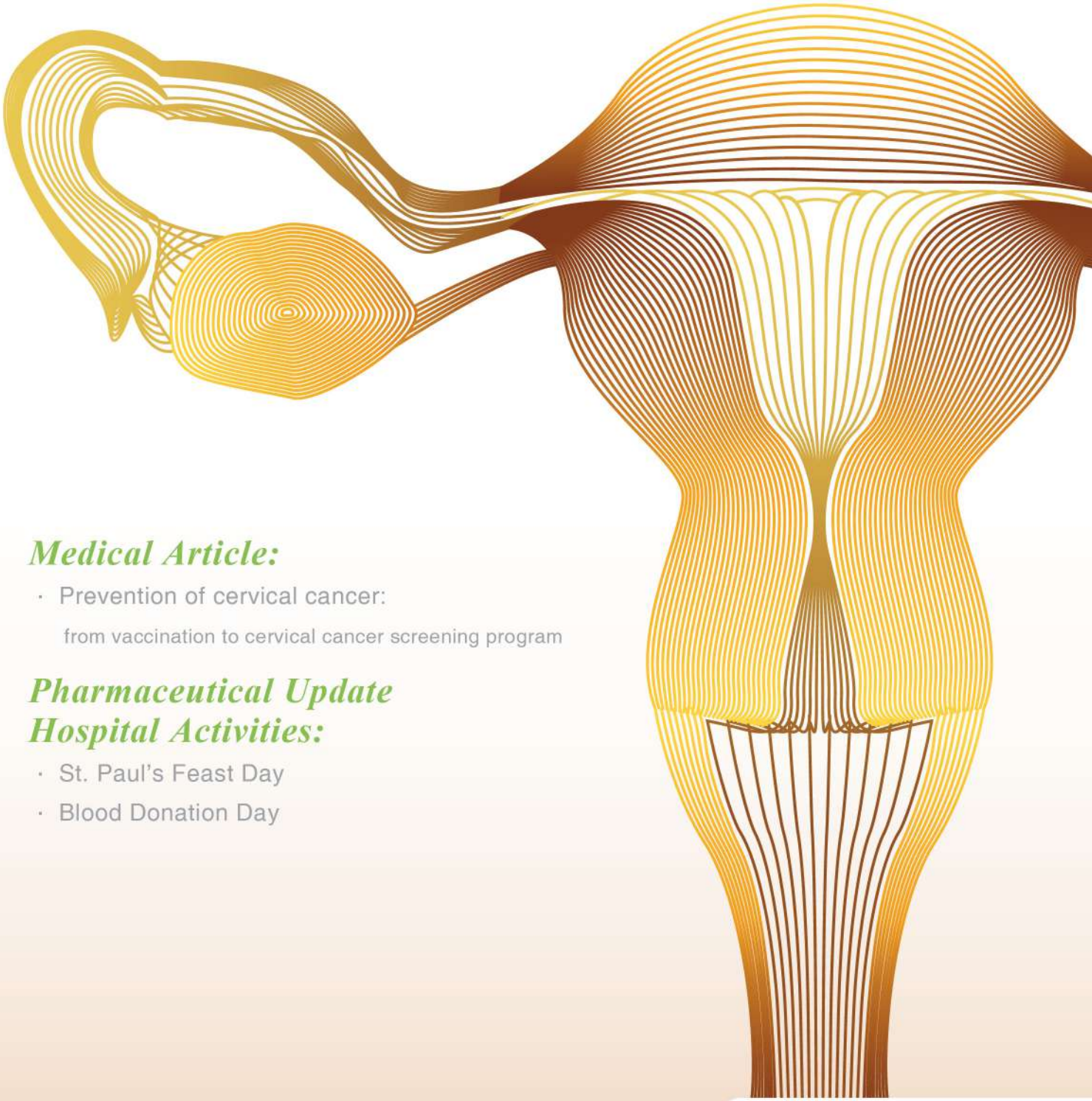
聖保祿醫院
St. Paul's Hospital

NewsLetter
院訊



Medical Article:

- Prevention of cervical cancer:
  from vaccination to cervical cancer screening program

Pharmaceutical Update
Hospital Activities:

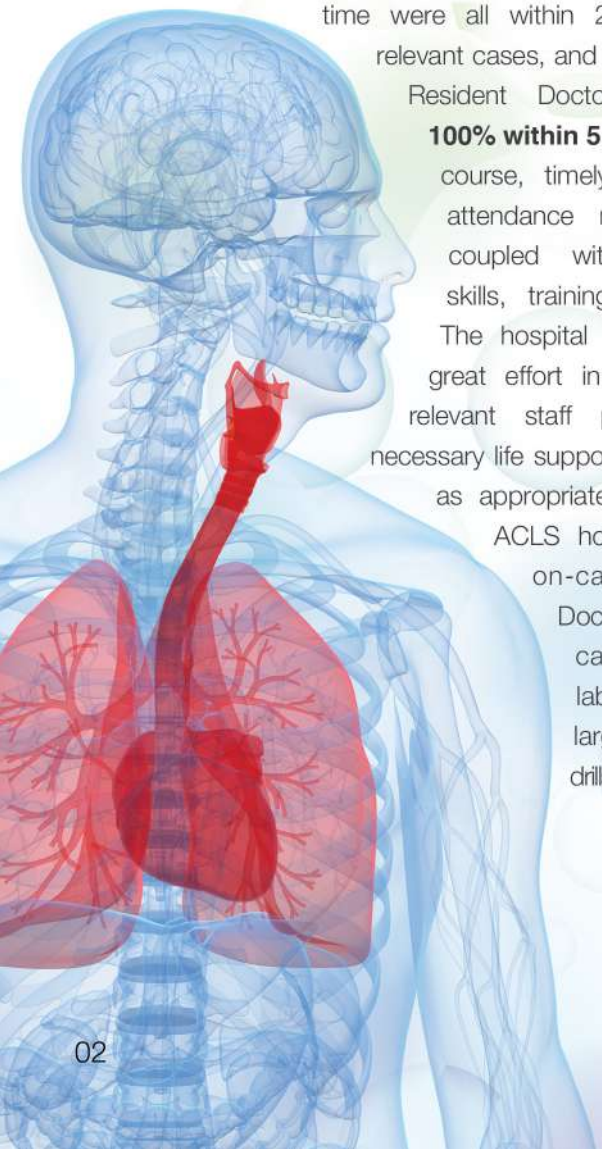
- St. Paul's Feast Day
- Blood Donation Day

MESSAGE
FROM THE MEDICAL SUPERINTENDENT

Dr. William Ho
Medical Superintendent

NEW BLOCK B Thanks to the hard work from everybody, our new Block B has swung into full operation with all teething problems largely resolved. Favorable comments from patients and doctors include the much improved new facilities, spaciousness of wards, reasonable charges, and speedy lifts and escalators. The enlarged floor space, however, does pose challenges to ward staff in terms of walking distance. Here I wish to thank them for adjusting to the new environment while continuing to provide excellent service to our clients.

CLINICAL QUALITY I am most pleased to see that our clinical quality indicators and audit results have continued to demonstrate improvements. The Cardiopulmonary Resuscitation (CPR) Audit for the first half of 2017 indicated that 90% of CPR were initiated within 1 minute, defibrillation time were all within 2 minutes in relevant cases, and arrival time of Resident Doctors achieved **100% within 5 minutes**. Of course, timely arrival and attendance need to be coupled with adequate skills, training and tools. The hospital has invested great effort in ensuring all relevant staff possess the necessary life support certification as appropriate (e.g. 100% ACLS holders among on-call Resident Doctors and ICU/ cardiac cath. lab nurses). A large number of drills were carried out for every ward and clinical area prior to the move into Block B. All these contributed to good clinical outcome: **50% ROSC** (Return of Spontaneous Circulation) rate despite the fact that 75% of these patients had non-shockable rhythms (either PEA or Asystole). Among CPR patients achieving ROSC, **30% survived to discharge** from hospital, which is very favorable compared with international benchmarks.



The hospital has also joined the Clinical Indicators program of ACHS (Australian Council on Healthcare Standards). All figures for the first half of 2017 compared favorably with benchmarks, including higher PTCA primary success rate, lower failure/complication rates for colonoscopy, and very low hospital acquired pressure ulcer. I am proud to see that we consistently achieve inpatient fall rate which is **less than 10%** of ACHS benchmark, and that new hospital acquired MRSA has been close to zero. While the overall hand hygiene compliance rate is a healthy 70%, that among visiting doctors is still hovering around 50%, and I look forward to everybody's cooperation and support in this area.

Admittedly, figures may fluctuate with time, but the general trend has been one of continuous improvement over the last few years. There are several important underlying factors:

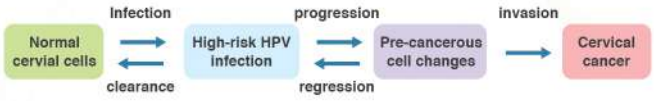
1. A robust Credentialing system where hospital privileges are linked to competence.
2. Guidance and practice policies emanating from the good work of our 11 Clinical Advisory Committees and 10 other clinical-related committees.
3. A comprehensive Quality Improvement system including risk assessment, training, drills, audits, monitoring and feedback.

We will continue our effort to ensure that all patients receive **safe and high quality care**.

Dr. Tse Wai Ching
Staff Specialist in Obstetrics & Gynaecology

Prevention of cervical cancer:
from vaccination to cervical cancer screening program

Cervical cancer has been the eighth commonest cancer among females in Hong Kong. Almost all cervical cancers are caused by persistent infection with one of the high-risk human papillomavirus (HPV) types. HPV infection is usually found in persons who have ever been sexually active. Most people with HPV infection are asymptomatic and will clear the infection on their own. Some females with persistent high-risk HPV infection in the cervix will develop pre-cancerous cell changes. While the majority of these changes will regress to normal, some may progress to cancer over years.



(Adapted from CHP, DH, HK)

Cervical cancer can be prevented by reducing HPV infection and the progression from persistent HPV infection to cervical cancer. Here are some preventive measures:

- Practice safe sex
- Avoid smoking
- Get HPV vaccination before having sexual experience
- cervical cancer screening

Primary prevention

Primary prevention of cervical cancer is now possible with the use of prophylactic vaccination against HPV. There are three vaccines currently available:

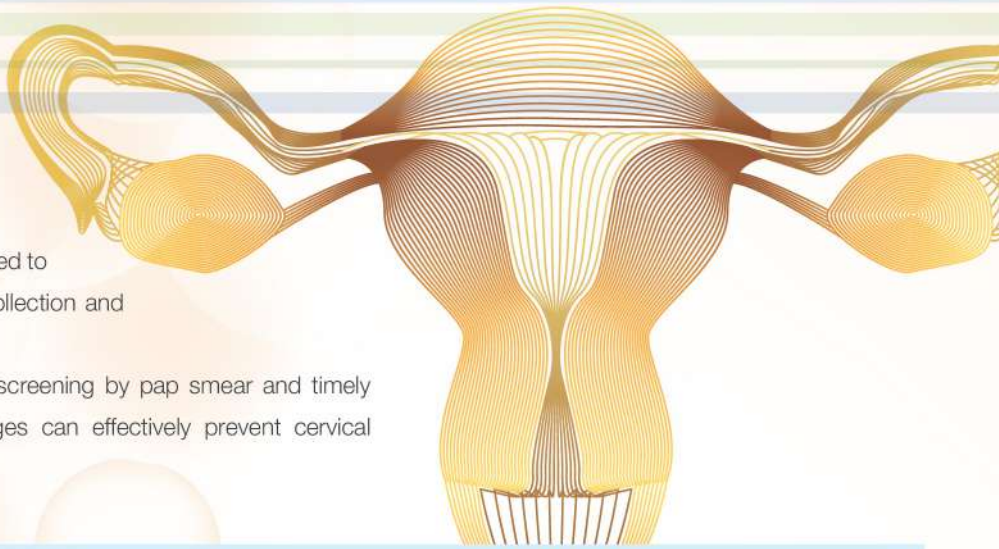
1. bivalent vaccine against HPV 16/18
2. quadrivalent vaccine against HPV 6/11/16/18
3. nonavalent vaccine against HPV 6/11/16/18/31/33/45/52/58

All of them offer protection against HPV types 16 and 18, which account for about 70% of cervical cancer. The quadrivalent and nonavalent vaccines also protect against genital wart caused by HPV types 6 and 11. The vaccines offer no effect on viral clearance in women with preexisting infection but evidence suggests that vaccine can reduce the risk of developing subsequent disease by 35–46% irrespective of causal HPV type after an excisional procedure for cervical intraepithelial neoplasia

Meta-analysis has demonstrated that prophylactic vaccines are highly effective in preventing vaccine type HPV infections and associated precancerous cervical lesions. However, the efficacy in young women who may have been exposed to vaccine type HPV infection and have less than perfect compliance with vaccination protocol is reduced. Thus, WHO recommends primary target population to be girls within the age range of 9 or 10 years through to 13 years. In 9-13 year olds, the number of bivalent and quadrivalent doses of HPV vaccine can be reduced from three to two doses as researches demonstrated that antibody response to two doses in 9-14 years old girls is as good as a three dose course. WHO position paper (2014) recommended a 2-dose schedule with a 6-month interval between the doses for females younger than 15 years. There is no maximum recommended interval between the doses but an interval no greater than 12-15 months is suggested. All vaccines have good safety profile according to WHO's Global Advisory Committee on Vaccine Safety (GACVS) but they are not recommended for pregnant women. Efficacy against infection and cervical lesions associated with HPV-16/18 has been shown to last at least 9 years and boosters are not required.

Secondary prevention by screening

In view of the fact that vaccines cannot offer full protection, all women from the age of 25 or the time of commencing sexual activity (whichever is later) until 64 are recommended to undergo cervical cancer screening program. Cervical cytology remains the main screening tool in Hong Kong. As cervical carcinoma in women below 25 years of age is rare and the relatively high proportion of cytological abnormalities that spontaneously regress, screening before this age is less cost-effective and could result in unnecessary interventions. Nevertheless, women aged below 25 years with high-risk profile may be screened. The percentage reduction in the cumulative incidence of cervical cancer is 93% with an annual or biennial screening interval, 91% if performed every 3 years, 84% if performed every 5 years and 64% if performed every 10 years. However, chronically immunosuppressed women will need annual screening. As cervical cancer is caused by persistent high risk HPV infection, HPV testing is also commonly used as a screening tool now. HPV testing is high sensitive and higher reproducible.However, it is less specific, leading to more retesting, procedures (colposcopy and biopsy), over-treatment and



psychological burden, in particular among young women where HPV infection is usually transient. The benefits of a HPV based screening program need to be further determined by large scale local data collection and cost analysis.

With the use of vaccine, regular cervical cancer screening by pap smear and timely treatment of any detected pre-cancerous changes can effectively prevent cervical cancer in Hong Kong.

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Pharmaceutical Update

Drug-Induced QT Prolongation

SPH Pharmacy Department

Introduction

The prolonged QT interval is commonly seen and associated with the life-threatening arrhythmia, *Torsades de Pointes* (TdP). It can occur congenitally, and also be produced by various drugs. Antiarrhythmic drugs have long been known to induce QT prolongation. However, many other drugs are also associated with this adverse effect.

	1 to 15 years old	Men	Women
Abnormal QT interval	>460ms	>450ms	>470ms

Table 1| Abnormal QT interval in milliseconds (ms) based on age and gender[1]

The QT interval is the best available predictor of TdP episode while the drug-induced TdP is mostly associated with QT values more than 500ms.

Mechanisms

The repolarization phase in action potential is mainly driven by the outward movement of potassium ions. The majority of non–cardiac medications that cause QT prolongation exhibits the effects on the rapidly activating delayed rectifier potassium channel (I_{Kr}) current. The I_{Kr} blockade leads to a delay in phase 3 of repolarization of the action potential and reflects as QT prolongation in ECG.

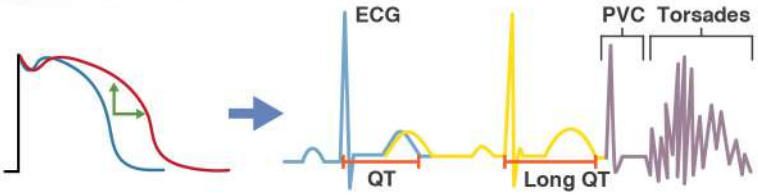

Figure 1 | The mechanism and ECG of QT prolongation and TdP[2]

The drug itself can cause QT prolongation through affecting the I_{Kr} current. On the other hand, various drugs can interact and further increase the risk of QT prolongation. Three mechanisms are proposed:

1. Pharmacodynamic interaction

The concurrent use of drugs that can prolong QT interval increases the risk of TdP. For example, the concomitant use of citalopram and sotalol produces an additive effect to QT prolongation.

2. Pharmacokinetic interaction

By affecting the metabolism of drugs through cytochrome P450 isoenzymes (especially CYP 3A4 and 2D6), the plasma concentration of the QT-prolonging drugs may increase thus precipitates QT prolongation. The above interaction can be seen in the concomitant use of the antibiotic erythromycin and calcium channel blocker verapamil. Erythromycin being an inhibitor of CYP3A4 will increase the plasma levels of verapamil and thus may result in QT prolongation.

3. Effect on electrolytes

Drugs that cause electrolyte disturbance, especially hypokalaemia and

hypomagnesaemia, can increase the risk of QT prolongation. Caution should be given when the change in baseline QT interval is >30ms whereas a change of >60ms is a definite concern for the potential of arrhythmias.

Medications that may prolong QT intervals

There are various medications associated with QT prolongation. Table 2 highlights the most concerning drug groups with examples.

Drug category	Examples
Antiarrthymics	Quinidine, flecainide, sotalol, amiodarone, dronedarone
Antipsychotics	Prochlorperazine, haloperidol, risperidone, lithium, chloral hydrate
Antidepressants	TCAs (e.g. imipramine, amitriptyline, doxepin), SSRIs, (e.g. citalopram, escitalopram)
Antimicrobials	Macrolides (e.g. erythromycin), Fluoroquinolones (e.g. moxifloxacin), pentamidine, quinidine, Azoles (e.g. ketoconazole)
Anti-emetics	5-HT_3 antagonists (e.g. ondansetron), metoclopramide, domperidone

Table 2| Drugs implicated in QT prolongation and TdP
[This is not a comprehensive list and the medications may not be available at SPH]

A. Antiarrhythmics

Antiarrhythmic drugs (Class IA and Class III) are the prominent causes of drug-induced TdP. Class IA agents block both Na^+ and K^+ channels whereas Class III agents are potent I_{Kr} blockers. Quinidine may prolong QT interval by an average of 10-15% within the first week of therapy and carries an overall of 1.5% risk of inducing TdP.

B. Antipsychotics

Both typical and atypical antipsychotics prolong QT interval in a dose-dependent manner and may cause TdP. Haloperidol, a typical antipsychotic, is a potent blocker of I_{Kr} and prolongs QT interval by 15-30ms. In 2007, FDA added the alert for haloperidol suggesting ECG monitoring for intravenous administration and high dose usage. For atypical antipsychotics, ziprasidone has the highest risk of causing QT prolongation while olanzapine has the lowest.

C. Antidepressants

Tricyclic antidepressants (TCAs) e.g. amitriptyline, imipramine have a higher rate of QT prolongation than selective serotonin receptor inhibitors (SSRIs). However, citalopram and escitalopram are also known to prolong QT interval with increasing dose. Citalopram 20mg and 60mg daily have been shown to increase the mean QT interval by 7.5ms and 16.7ms, respectively. Thereby, the maximum dose should be limited to 20mg/day in patients with hepatic impairment and in patients who are over 60 years old.

D. Antimicrobials

Macrolides are well known to prolong QT interval. Previous study showed that the order of prolonging QT interval decreases from erythromycin to clarithromycin and lastly to azithromycin. QT prolongation is also associated with fluoroquinolones by blocking the I_{Kr}. Among all of the fluoroquinolones, moxifloxacin carries the greatest chance in leading to QT prolongation and ciprofloxacin has the lowest. Though other fluoroquinolones have a lower risk comparing to moxifloxacin, extra caution should be given to patients that have predisposing factors. The intravenous use of pentamidine, an antiprotozoal drug, can lead to TdP which is related to idiosyncratic reaction rather than dose dependent effect. Inhalation of pentamidine is considered to be safe.

E. Anti-emetics

Serotonin 5-HT_3 antagonists e.g. ondansetron, palonosetron and granisetron, are commonly used for nausea and vomiting in chemotherapy, radiation and post-operation. Based on animal studies, blockage of I_{Kr} and cardiac sodium channels are the culprits of causing QT prolongation. A single 32mg ondansetron intravenous administration can increase QT interval 20ms, therefore FDA recommended a single intravenous dose should not exceed 16mg. Domperidone was once commonly used as a prokinetic agent but now it is restricted to use in relieving nausea and vomiting as it also prolongs QT interval. The risk further increases with doses over 30mg daily.

Risk factors

The susceptibility of drug-induced QT prolongation varies among individuals significantly. Table 3 has listed out some of the modifiable and non-modifiable risk factors for drug-induced QT prolongation and TdP.

Modifiable Risk Factors
• Concomitant use of more than one drug that causes QT prolongation • Bradycardia • Electrolyte imbalance
Non-Modifiable Risk Factors
• Congenital long QT syndrome • Cardiac disease (e.g. congestive heart failure, ischemic heart disease) • Female (QT interval in female is usually 20ms longer than male.) • 65 year-old or older • Impaired hepatic/renal function • Thyroid disease

Table 3| Risk factors for drug-induced QT prolongation

Prevention of drug-induced QT prolongation

The risk of TdP depends on both patient factors and medication profile. QT-prolonging drugs should be avoided in patients with aforementioned risk factors. If prescribing a QT-prolonging medication is deemed necessary, it is crucial to ensure that it is used at the lowest effective dose and shortest duration. Particular attention should be given to pharmacokinetic interactions. Besides, renal dosage adjustment is of paramount importance to minimize the risk of drug-induced QT prolongation in patients with kidney disease. In conclusion, a wide array of drugs can cause QT prolongation and lead to TdP, thus prescribers should stay alert and the risks and benefits of these medications should be evaluated in patients with relevant risk factors.

Pharmaceutical Update

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10. Package Inserts

Following Drug and Therapeutics Committee meeting in June 2017, the drugs below are now approved and available for prescribing at SPH:

Drugs	Indication and dosage	Remarks
Physiologica • Single dose of normal saline (5mL), preservative - free preparation	For cleaning of nasal cavities and eyes of babies, children and adult.	-
Zatamil 0.1%w/w (mometasone furoate) hydrogel	Short term (up to 4 continuous weeks) relief of inflammation, redness, swelling, itchiness and discomfort on skin problems, e.g. psoriasis, eczema and dermatitis. To be applied to affected area once daily.	SPH also stocks: • Elomet 0.1% cream • Elomet 0.1% lotion (contains isopropyl alcohol) • Elomet 0.1% ointment
Prospan Cough Syrup (7mg/mL of ivy leaves dry extract ethanolic 30%w/w)	Ivy leaves dry extract containing cough syrup to cause thick mucus to liquefied and to improve symptoms in bronchitis, chronic inflammatory bronchial disease and acute inflammation of respiratory tract accompanied by coughing. Dosage: Age — Dose 2-5 years old — 2.5mL twice daily 6-12 years old — 5mL twice daily >12 years old — 5mL Three times daily	-

CME Announcement

CME/CPD/CNE Programme 2017

The New Apology Ordinance - When and How Should an Apology be Made

Speaker: **Mr. Woody Chang**
Litigation Partner of Mayer Brown JSM

Chairman: **Dr. Lo Hak Keung**
Head, Urology Centre, Staff Consultant Urologist

Date: **19 October 2017 (Thursday)**

Time:

7:00 pm – 7:15 pm	Reception (light refreshment provided)
7:15 pm – 8:15 pm	"What do doctors and nurses need to know about the new Apology Ordinance? When and how should an apology be made?" (in Cantonese) by Mr. Woody Chang
8:15 pm – 8:30 pm	Q & A Session

Venue: **Meeting Room, 2/F, Block B, St. Paul's Hospital**

Registration & Enquiry:
(First-come-first-serve)

Contact Person: Ms. Fion Wong
Tel: 2830 3904, Fax: 2837 5271,
E-mail: sph.sdd@mail.stpaul.org.hk

CME / CPD / CNE Accreditation for all Colleges (Pending approval)

INTRODUCTION
Of New Faces

Hi everyone. I am Ng Sui Cheung Larry. It is my pleasure to join St Paul's Hospital as a Staff Specialist in Gastroenterology and Hepatology. Prior to the present appointment, I was the resident specialist in Department of Medicine and Geriatrics in Tuen Mun Hospital. I was graduated from the Chinese University of Hong Kong in 2005 and obtained the fellowship in GI and Hepatology in 2012. My working experience in Tuen Mun Hospital allowed me to have extensive exposure to tackle complicated cases in Internal Medicine, GI and Hepatology. My major practice is focused on GI endoscopy include Gastroscopy and Colonoscopy, ERCP, Endoscopic ultrasound and tissue acquisition. Besides, I have special interest in pancreatic diseases management eg. pancreatic cysts, autoimmune pancreatitis. I will try my best to serve my patients and colleageus in St Paul's Hospital and I am looking forwards to work with all of you .

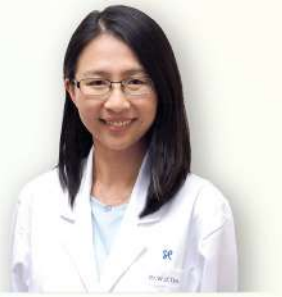
Dr. Ng Sui Cheung
Staff Specialist in Gastroenterology & Hepatology

Dr. Hung Lik San
Resident Medical Officer

Dr Rex Hung joined St. Paul's Hospital in June 2017 as Resident Medical Officer of the Outpatient Department. After graduating from the University of Michigan, Ann Arbor with BS in Pharmaceutical Sciences and PharmD in 1997 and 1999 respectively, he worked in the field of pharmacy benefit management in the United States. He later obtained his medical degree from the University of Hong Kong, and underwent internal medicine training at the Queen Mary Hospital acquiring the MRCP(UK) qualification in February 2015. Before joining St. Paul's Hospital, Dr Hung worked as a private primary care practitioner in Causeway Bay. Dr Hung is very pleased to be able to serve the general public and the church community here at St. Paul's Hospital.

Hello I am Dr Sonia Lai. It has been my pleasure to join the St Paul's family again after graduating from the school 20 years ago. I had my training in obstetrics and gynecology in Kwong Wah Hospital, with my special interest in urogynecology and minimally invasive gynecology surgery, including laparoscopic, hysteroscopic and vaginal surgery. Seeing my baby patients growing in their mothers' womb and to help them come to this world safely has been a joyful experience. I hope to continue to provide care to the community and work with other colleagues in the St. Paul's family.

Dr. Lai Wai Man
Staff Consultant in Obstetrics & Gynaecology



Dr. Tse Wai Ching
Staff Specialist in Obstetrics & Gynaecology

Hi, I am Tse Wai Ching, Cathy. It is my great honour to join the department of Obstetrics and Gynaecology in St. Paul's Hospital. I graduated from the University of Hong Kong in 2006 and started my training in Queen Elizabeth Hospital. After getting my fellowship in 2013, I worked in Princess Margaret Hospital as an associate consultant since 2015. I am currently the member of the manpower Committee of the Hong Kong College of Obstetricians and Gynaecologists. I look forward to helping my patients and working with all expert colleagues in St. Paul's Hospital.

聖保祿醫院 捐血日

聖保祿醫院於7月4日與香港紅十字會捐血服務中心再次合辦員工捐血日活動，各部門同事均本著捐血救人的精神全力支持。是次活動共有39名同事登記參加，27名成功進行捐血，本院藉此感謝各位同事熱心參加，使活動得以順利完成。

聖保祿醫院 主保瞻禮日2017

聖保祿宗徒為本院之主保，每年本院均以他的瞻禮日作為院慶，適逢是沙爾德聖保祿女修會的王德蘭修女及何美蘭修女進會鑽禧，何慧芳修女及申頌詩修女進會金禧感恩禮，以及聖保祿之友收錄禮。為慶祝這個特別日子，沙爾德聖保祿女修會聯同聖保祿醫院於6月29日下午5時，於基督君王小堂舉行感恩彌撒，並由湯漢樞機主禮及多位神父共祭，同頌主恩。

與此同時，為答謝全體員工為醫院新大樓落成付出的努力，除了提供免費院慶午餐或晚餐予是日當值同事外，今年更於新大樓餐廳精心安排了美味而豐富的下午茶自助餐款待各位，以表謝意，讓同事能聚首一堂，共度歡樂時光。