PHARMACY BULLETIN

HOSPITAL PERMAI JOHOR BAHRU

ISSUE 1/2019

INSIDE THIS ISSUE:

HIGHLIGHT : TEN THREATS TO GLOBAL HEALTH IN 2019 by WHO

Air Pollution and Climate Change - The world is on a course to warm by more than 3°C by the end of this century; air pollution causes premature death from cancer, stroke, heart and lung disease, and burning of fossil fuels is deemed to be the major contributor.

Noncommunicable Diseases - Risk factors like tobacco use, physical inactivity, harmful use of alcohol, unhealthy diets and air pollution have exacerbated non-communicable diseases like diabetes, cancer, heart disease and mental health issues. WHO is working with governments to reduce physical inactivity by 15% by 2030.

Global Influenza Pandemic - WHO monitors the circulation of influenza viruses and recommends strains to be included in the seasonal flu vaccine. In the event of a new flu strain with pandemic potential, WHO works with partners to ensure effective and equitable access to diagnostics, vaccines and antivirals treatments.

Fragile and Vulnerable Settings - More than 22% of global population are left without access to basic health care due to crises like drought, famine, conflict and population displacement.

Antimicrobial Resistance - Antimicrobial resistance threatens the currently effective prevention and treatment of infections such as tuberculosis. To tackle antimicrobial resistance, WHO is working with different sectors to increase awareness and knowledge, to reduce infection and to encourage prudent use of antimicrobials.

Ebola and other High-Threat Pathogens – Watchlist generated by WHO's R&D Blueprint for priority research and development includes Ebola, several other haemorrhagic fevers, Zika, Nipah, Middle East respiratory syndrome corona virus(MERS-CoV), Severe Acute Respiratory Syndrome (SARS) and disease X (unknown pathogen which could cause a serious pandemic).

Weak Primary Healthcare - Ideally, primary health care should provide comprehensive, affordable, community-based care throughout life. In 2019, WHO will work with partners to revitalize and strengthen primary health care in countries and follow up on specific commitments made by in the Astana Declaration.

Vaccine Hesitancy - In 2019, WHO will ramp up to eliminate cervical cancer and wild poliovirus. However, the reluctance or refusal to vaccinate due to complacency, inconvenience in assessing vaccines and lack of confidence threatens to reverse the progress made in tackling vaccine-preventable diseases. Health workers as an influencer must be supported to provide credible information on vaccines.

Dengue – Dengue, a mosquito-borne disease can be lethal and approximately 40% of the world is at risk of dengue fever. WHO's Dengue control strategy aims to reduce deaths by 50% by 2020.

HIV - Enormous progress against HIV in terms of getting people tested, providing them with antiretrovirals and preventive measures such as a pre-exposure prophylaxis for people at risk of HIV. In 2019, WHO will work with countries to support the introduction of self-testing.

References: Ten threats to global health in 2019 (2019, January 18). Retrieved from https://www.who.int/emergencies/ten-threats-to-global-health-in-2019

Edited By : Doi Jia Xin

MEDICATION SAFETY
FLUOROQUINOLONES – SIDE EFFECTS ON MENTAL HEALTH

Facts about Fluoroquinolones

- Fluoroquinolones (FQ) are a class of antibacterial medicines approved to treat certain kinds of infections caused by bacteria.
- FDA-approved fluoroquinolones include levofloxacin, ciprofloxacin, ciprofloxacin extended-release tablets, moxifloxacin, ofloxacin, gemifloxacin and delafloxacin.
- Only Ciprofloxacin, Levofloxacin, Moxifloxacin and Ofloxacin are available in Malaysia.

Indications & Dose

Fluoroquinolones are commonly prescribed antibiotics used to treat a variety of infections against Gram-positive and Gram negative bacteria, including pseudomonas aeruginosa such as;

- ⇒ Respiratory infections,
- ⇒ Sexually transmitted diseases,
- ⇒ Urinary tract infections,
- ⇒ Skin and soft tissue infections

Drug	General Dose
Ciprofloxacin	Adult : 100mg-750mg BD
Levofloxacin	Adult : 500mg OD
Moxifloxacin	Adult :400mg OD
Ofloxacin	Adult : 400mg OD/BD

Drug Safety

- There have been many reports and studies showing Fluroquinolones may cause psychiatric adverse events.
- Recent study by John et.al (2017) shows that hospitalized older patients and those prescribed with typical antipsychotics experienced a higher risk of developing psychosis/delirium when prescribed with Fluoroquinolones.
- A case report by Hailey et.al (2018) was recently reported due to levofloxacin-induced psychosis in an elderly female with no significant history of mental disorders.
- On July 10, 2018, The US Food and Drug Administration (FDA) ordered label changes for fluoroquinolones to strengthen warnings about the antibiotics' risks for mental health side effects.
- According to FDA, all new labels of fluoroquinolones must include 6 psychiatric adverse reactions on "Warning & Precautions Section" which are;
  - ⇒ **Disturbance in Attention**
  - ⇒ **Memory Impairment**
  - ⇒ **Delirium**
  - ⇒ **Nervousness**
  - ⇒ **Agitation**
  - ⇒ **Disorientation**

- Fluoroquinolones may cause side effects on mental health and caution should be exercised when prescribing fluoroquinolones for patient who has history of mental disorder.

References:

Tanne J. H. (2008). FDA adds "black box" warning label to fluoroquinolone antibiotics. *BMJ (Clinical research ed.)*, *337*(7662), a816.

Shimatsu, K., Subramaniam, S., Sim, H., & Aronowitz, P. (2014). Ciprofloxacin-induced tendinopathy of the gluteal tendons. Journal of general internal medicine, 29(11), 1559-62.

Sellick, J., Mergenhagen, K., Morris, L., Feuz, L., Horey, A., Risbood, V., Ott, M. (2018). Fluoroquinolone-Related Neuropsychiatric Events in Hospitalized Veterans. *Psychosomatics,59*(3), 259-266.

Steuber, H., Williams, D., & Rech, M. A. (2018). Leave the levofloxacin? A case report of levofloxacin-induced psychosis. The American Journal of Emergency Medicine, 36(8).

US Food and Drug Administration; FDA updates warnings for fluoroquinolone antibiotics on risks of mental health and low blood sugar adverse reactions. July 2018, Retrieved from https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm612995.htm

Edited By : Nurul Fathiah Binti Mohd Fuzi

ADVERSE DRUG REACTION
AMOXICILLIN/CLAVULANATE & PSYCHIATRIC EVENTS

Amoxicillin/Clavulanate

- Amoxicillin is a β-lactam antibiotic that exerts its bactericidal activity by interfering with the synthesis of the bacterial cell wall
- The addition of Clavulanic acid (β-lactamase inhibitor) helps to protect amoxicillin from degradation by the β-lactamase enzyme, enhancing antibacterial effect of amoxicillin.
- There are currently 49 products containing amoxicillin/clavulanate registered with the Drug Control Authority (DCA) in Malaysia.

Indications & Dose

⇒ Upper respiratory tract infections including ENT e.g. tonsillitis, sinusitis, otitis media
⇒ Lower respiratory tract infections e.g. acute exacerbation of chronic bronchitis, lobar and bronchopneumonia
⇒ Genito-urinary tract infections e.g. cystitis, urethritis, pyelonephritis
⇒ Skin and soft tissue infections, e.g. abscesses, boils, cellulitis, wound infections

Psychiatric Events

Psychiatric side effects from antibiotic agents had been reported since the introduction of antibiotics in 1930's (Sternbach & State, 1997). There were several hypotheses regarding the mechanism of these events but it may be due to drug interaction with the neurotransmitters (Sternbach & State, 1997) or may be due to neurotoxic effect caused by increased concentration of antibacterial agent in central nervous system (Lambrichts, Van Oudenhove, & Sienaert, 2017).
Further research is required to determine the relative-risk factor that caused this phenomenon of manic episode among different demographic population in Malaysia.

National Pharmaceutical Regulatory Agency (NPRA) have reported that to date there are **seven** (7) **psychiatric adverse events** involving amoxicillin/clavulanate:

⇒ **Hallucination (2),**
⇒ **Acute Psychosis (1),**
⇒ **Delusion (1),**
⇒ **Auditory Hallucination (1),**
⇒ **Irritability (1), and**
⇒ **Psychotic Behaviour (1)**

The **onset** of these behavioral abnormalities **was within one to two days** of administration of amoxicillin/clavulanate, and **disappeared following withdrawal of drug** (Shuan, 2018).

- Please report **ALL** suspected Adverse Drug Reactions (ADRs) (including those for traditional products) and Adverse Events Following Immunisation (AEFIs) to the Drug Information Services Department in your Hospital. The ADR forms can be downloaded from **www.npra.gov.my**
- All completed reports will be sent to the National Centre for Adverse Drug Reactions Monitoring.
- Do not hesitate to report if some details are not known.
- The identities of Reporter, Patient and Institution will remain confidential.

NPRA MALAYSIA

References:

Lambrichts, S., Van Oudenhove, L., & Sienaert, P. (2017). Antibiotics and mania: A Systematic Review. Journal of Affective Disorders, 149-156.

Shuan, D. Q. (2018). Psychiatric Events Following Administration of Amoxicillin/Clavulanate. MADRAC Newsletter, Vol. 26 (02/2018). Page 2, Retrieved from https://www.npra.gov.my/images/Publications/Newsletter_MADRAC_Bulletin/2018/5bc01a17f229d-MADRAC-Bulletin02-2018.pdf

Sternbach, H., & State, R. (1997). Antibiotics: neuropsychiatric effects and psychotropic interactions. Harvard Review of Psychiatry, 214-226.

Edited By : Nurul Nillie Amanin Binti Wan Zin

KNOW YOUR MEDICINE
VORTIOXETINE

Indications & Dose

⇒ Vortioxetine is approved for Major Depressive Disorder (MDD) in adults.
⇒ The starting and recommended dose of vortioxetine is 10 mg OD in adults less than 65 years
⇒ Depending on the individual patient response, dose of vortioxetine may be adjusted to a maximum of 20 mg OD or to a minimum of 5 mg OD.
⇒ After the depressive symptoms resolve, treatment for at least 6 months is recommended for consolidation of the antidepressive response.

Mechanism of Action

- Vortioxetine's precise mechanism of action is unknown.
- It is hypothesized that vortioxetine works via blockade of serotonin reuptake; however, it is pharmacologically different than other SSRIs because it also works by direct modulation of various serotonin receptors.
- Early approved antidepressants cause desensitization of 5-HT1A on the presynaptic neuron, thereby creating a negative feedback loop and possibly reducing their antidepressive effects.
- Vortioxetine is an agonist of 5-HT1A on the presynaptic neuron, which can accelerate the antidepressant effects.
- This molecule acts as an antagonist of 5-HT3, 5-HT7, agonist of 5-HT1A, and partial agonist of 5-HT1B and is designed to help reduce depressive symptoms for treatment and maintain response.

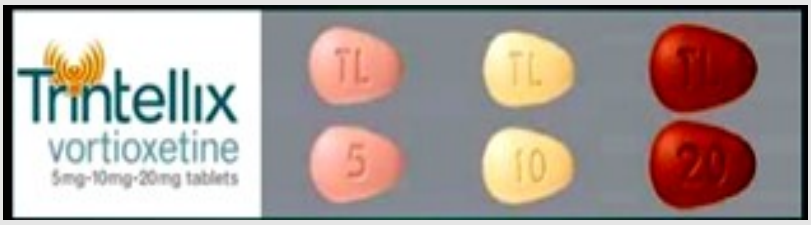
Side Effects

System Organ Class	Frequency	Adverse Reaction
Metabolism and Nutrition Disorders	Common	Decreased appetite
Psychiatric Disorders	Common Uncommon	Abnormal dreams Bruxism
Nervous System Disorders	Common Unknown	Dizziness Serotonin syndrome
Vascular Disorders	Uncommon	Flushing
Gastrointestinal Disorders	Very Common Common	Nausea Diarrhoea, constipation, vomiting
Skin and Subcutaneous Tissue Disorders	Common Uncommon	Generalized pruritus Night sweats

(Mims, 2019)

Treatment Discontinuation

Patients treated with Brintellix can abruptly stop taking the medicinal product without gradual reduction in dose. However, a decrease to 10 mg/day is recommended for patients are on more than 15 mg/day for one week before complete discontinuation.



Contraindications

Hypersensitivity: Hypersensitivity to vortioxetine or any components of the TRINTELLIX formulation.
Monoamine Oxidase Inhibitors (MAOIs): Due to an increased risk of serotonin syndrome, do not use MAOIs intended to treat psychiatric disorders with TRINTELLIX or within 21 days of stopping treatment with TRINTELLIX. Do not use within 14 days of stopping an MAOI intended to treat psychiatric disorders. Do not start TRINTELLIX in a patient who is being treated with linezolid or intravenous methylene blue.

References:

Brintellix. (2019). In *MIMS Online*. Retrieved from https://www.mims.com/malaysia/drug/info/brintellix/?type=full

Agostino, A. D., English, C. D., & Jose, A. (2015). Vortioxetine (Brintellix): A New Serotonergic Antidepressant, *40*(1), 36–40.

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Edited By : Muhammad Amirul Akmal Bin Mohd Khalid

COUNSELING POINTS
ORAL CONTRACEPTIVE PILLS

Contraception allows couples to plan on childbearing and family planning. Hormonal contraception has high rate of effectiveness, ease of administration and reversible contraception. There are 3 types of OCP which are combination oral contraceptives, progestin-only pills and emergency contraceptives.

1) Combination Oral Contraceptives (COCs)

⇒ It consists of tablets containing both Oestrogen and Progestin to prevent women from ovulating and thicken cervical mucus to prevent sperm from reaching the uterus.

Starting the pills

- Started initially between days 1-5 of the menstrual cycle and no need for additional contraception. If started beyond this period, pregnancy should be excluded and additional contraception for 7 days is advised.
- Non-breastfeeding women should start COC 21 days postpartum. If started beyond this, additional contraception is needed for 7 days.
- Should be taken every day, at around the same time, for 21 consecutive days followed by 7 steroid-free days.

Examples: Marvelon, Regulon, Minulet and Yasmin

2) Progestin – only Pills (POP)

⇒ It only contains Progestin which works by thickening the cervical mucus and thinning the endometrium to prevent implantation of the eggs.

Starting the pills

- Initial pill may be taken within day 1-5 of the menstrual cycle and then taken once daily at the same time each day continuously with no hormone-free days. Additional contraception should be used for the 1st 48 hours
- In postpartum women, pill can be started from day 21 with no additional contraception. If started after day 21, additional contraception is needed for the 1st 48 hours.
- Back-up contraceptive method is recommended for 48 hours if a woman is >3 hours late taking the dose.

Examples: Noriday, Norcolut, Sunolut and Cerazette

3) Emergency Contraceptives

⇒ Known as post-coital contraception/ morning after pill. It is offered to women who had unprotected intercourse and do not desire for pregnancy.
⇒ Take 1 tablet after intercourse, within the specific time indicated for the product.
⇒ **Examples**: Ella, Escapelle and Postinor –2

Important Points

- The dose and time of administration of OCP may vary from product to product.
- Read the product leaflet and follow the instructions given by your pharmacist / prescriber when taking Oral Contraceptives.

References:

Hormonal Contraception. Retrieved from https://specialty.mims.com/hormonal%20contraception/patient%20education?channel=obstetrics-gynaecology

Edited By : Anis Bnti Adnan

PHARMACY SERVICE
PATIENT'S OWN MEDICINES (POMs)

POMs are the patients' own medicines that are supplied by KKM facilities (hospitals and clinics) or their own medicines from retails to treat diseases.

Aims:
⇒ To optimise daily drug usage, ensure efficient and optimum treatments for patients.
⇒ To prevent medication errors and drug wastage.

Policy

⇒ POMs starts from patient's admission to ward until discharge.

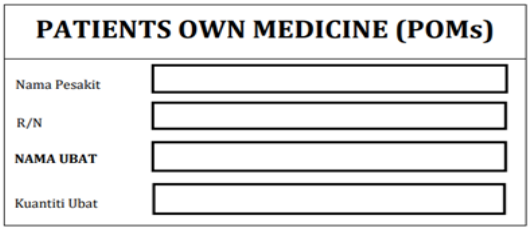
⇒ Briefly explain to the patients that hospital may choose whether to allow administration of POMs to their patients when appropriate.

⇒ The patients or caregivers need to bring all their medicines during admission to ward.

⇒ The ward pharmacists check all medicines and record POMs into CP1 form.

⇒ The administration of POMs must be monitored by healthcare professionals.

⇒ POMs need to be labelled and kept in safety place in ward. POMs psychotropic drugs must be handled according Psychotropic Regulation 1989.



Medicines that should not be used for POMs

- Unidentifiable name &strength
- Expired medicines
- Mixed medicines in one bottle
- Improperly stored medicines

Procedures:

1. Receiving of POMs:
- During admission into ward, patient will be briefed about POMs program and advised to bring all current medicines to hospital and give POMs to healthcare providers.
- Pharmacists check and assess the use of POMs and prescribed medications and record and document all the medication lists into CP1 form.

2. Labelling of POMs:
- Pharmacists review and check the medication container label and container contents.
- Once POMs are identified, label accordingly by using generic names.

3. Storage of POMs:
- Keep POMs in a safe place. If it is cold chain medicine, then store it in refrigerator whereas psychotropic drugs must be stored in locked psychotropic cabinet.

4. POMs prescription in ward:
- POMs used in ward must be prescribed by doctors and it is important that the medicines are labelled as POMs.

5. Supply of POMs:
- The medicines can be taken if the prescription labelled with POMs. Supply of POMs without prescription is based on stock availability in inpatient pharmacy.

6. Administration of POMs:
- The nurses ensure that POMs are administered to patients according to doctor's prescription and check patient's medication chart before and after administering the medicines

7. Supply of POMs after discharge
- Discharge prescription must be screened and checked by pharmacists whether to continue POMs or not when appropriate.
- For the continued POMs, supply medicines according to the duration of treatment.
- For the discontinued POMs, medicines from KKM facilities must be returned to inpatient pharmacy and inform to patient except their own POMS, can be returned to them during discharge.

References:

Polisi dan Garispanduan Program Patients' Own Medicines (POMs), retrieved from https://www.pharmacy.gov.my/

Lummis, H., Sketris, I., &Veldhuyzen van Zanten, S. (2006). Systematic review of the use of patients' own medications in acute care institutions. Journal of clinical pharmacy and therapeutics, 31(6), 541-563.

Edited By : Liyana Nabilah Binti Abdul Razak

PHARMACY ACTIVITY
WORLD ANTIBIOTIC AWARENESS WEEK 2018

The **Ministry of Health Malaysia** and the **World Health Organization** (WHO) in collaboration with the **Association of Private Hospitals Malaysia** (APHM) launched the **World Antibiotic Awareness Week 2018** Campaign on November 8, 2018. Simultaneously with the launch, the campaign has been expanded nationwide involving the State Health Department, health clinics as well as private healthcare facilities.

In conjunction with this, the video on Antibiotic Resistance has been played during the morning assembly of Hospital Permai Johor Bahru on November 19, 2018. Information that has been distributed to Hospital Permai staff members through the video is as follows:

⇒ Introduction to antibiotic resistance
⇒ Role of consumer in preventing antibiotic resistance
⇒ Need of antibiotic during bacterial infections
⇒ Correct technique of taking antibiotics
⇒ Importance of completing the full course of prescribed antibiotics

PHARMACY ACTIVITY
MAULIDUR RASUL 2018 — CELEBRATION AT HOSPITAL LEVEL

Nasheed Competition

Date : 29 Januari 2019

Venue : Auditorium Ixora, HPJB

Organizer : Hospital Permai Johor Bahru

Participants from Pharmacy HPJB :

1. Siti Halimah Binti Yacob
2. Muliawaty Binti Ahmad
3. Rizanah Binti Ahmad
4. Noorazean Binti Ismail
5. Aini Binti Ab. Kadir
6. Intan Syafenaz Binti Mohd Abd. Jamal
7. Syeriffa Hafizai Binti Effendy Bala
8. Noryus Enaliza BT Muhamad Yunos

Exhibition on 'Tanda-tanda Kerasulan Nabi Muhammad S.A.W

Date : 27 - 30 Januari 2019

Venue : OPD & Auditorium Ixora, HPJB

Discussion session among Exhibition Team Members

PHARMACY ACTIVITY
BOWLING COMPETITION 2019

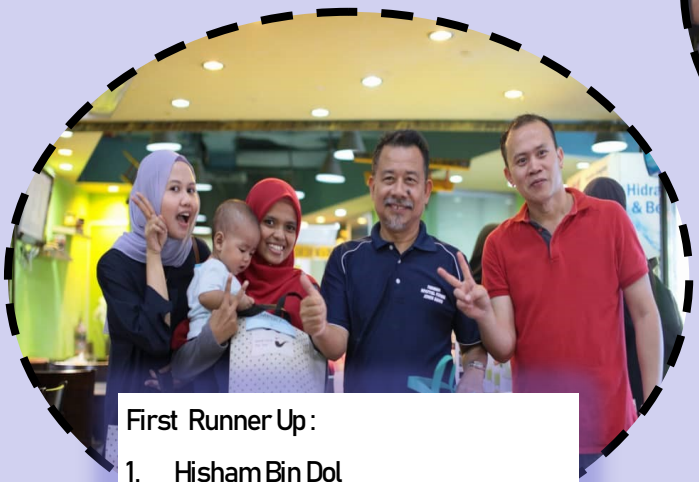
Date : 5 April 2019

Venue : Daiman Bowl, Johor Jaya

Organizer : PPF Club HPJB

Champion :

1. Fazilah Binti Kassim
2. Rizanah Binti Ahmad
3. Zuree Zuhaila Bt Abd. Rahim



First Runner Up :

1. Hisham Bin Dol
2. Sara binti Eassa Saleh Alhaddad
3. Puteri Noor Amyrah Binti Khoderun

Second Runner Up :

1. Muliawaty Binti Ahmad
2. Muhammad Yazid Bin Che Mi
3. Thulasie A/P Salwanadan