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Editors' Desk

The two important events fall in this current quarter (October to December): National Pharmacy Week [Theme - 'Responsible Use of Antibiotics Saves Lives'] and World Antibiotic Awareness Week [Theme - 'Antibiotics: Handle with Care']. The pharmacy week is an annual celebration throughout the country. World antibiotic awareness week is a special event for this year in order to sensitize all from policy makers to healthcare professionals to patients on urgent need of using antibiotics appropriately and save them for the future. Inappropriate use is one of the main contributing factors for rapid development of antibiotic resistance. Antibiotic resistance is perceived as next bigger threat to humankind after terrorism.

The pharmaceutical industries do not show interest on investment in new antibiotic research as there is risk of losing investment. The development of resistance may make the new antibiotic useless. With increasing challenges of new antibiotic discovery, the best option available is to maintain the sustainability of available antibiotics.

With this background in mind, the current issue focuses on antibiotics with the topics: Fluoroquinolone antibacterials, potential dangerous drug-drug interaction between macrolide antibiotics and calcium channel blockers, and regular features like websites of interest, courses, conferences, medicines to avoid and health days etc..

While selecting contents for the newsletter, we try to accommodate diversified materials so that every one of you, from students to health professionals to consumers, finds something of your interest. With successful publication of four issues of the first year, we assure you to make our Medicine Information Newsletter more purposeful in times to come. Wish you would continue to read and find interesting. Your feedback is important to us and you can reach us at: dicpharmd@gmail.com.

We take this opportunity to wish all our readers and well wishers Merry Christmas and Happy New Year!

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Widespread use of antibiotics promotes the spread of antibiotic resistance. Smart use of antibiotics is the key to controlling its spread.

A. P. J. Abdul Kalam

Schedule H1 to restrict the sale of antimicrobial medicines:

The Government of India brought a new schedule called schedule H1 under Drugs and Cosmetics Rule 1945, with effect from March 1, 2014, to restrict the availability of certain antimicrobials in pharmacy. 46 drugs are placed in this category mainly comprising of third and fourth generation cephalosporins, carbapenems, newer fluoroquinolones and first- and second-line antitubercular drugs. The chemists need to sell them only on valid prescription and maintain documentation of the name of the patient, contact details of prescribing doctor, and quantity of drugs dispensed.

Important Health Days

November: 15th to 21st November 2015 - National Pharmacy Week with a theme 'Responsible Use of Antibiotics Saves Lives'.

November: 16th to 22nd November 2015 - World Antibiotic Awareness Week with a theme 'Antibiotics: Handle with Care'

News Update

- Health Agenda in Sustainable Development Goals: The world leaders of 193 countries met during 25-27 September 2015 at UN Head Quarter in New York and approved 'Sustainable Development Goals (SDGs)' as the agenda for development in next 15 years with effect from January 1, 2016. The new agenda integrated all three dimensions of sustainable development: economic, social and environmental. Almost all the new 17 goals have link with health and thus health is perhaps a major beneficiary of sustainable policies. The SDG 3 plans to "Ensure healthy lives and promote well-being for all at all ages" by 2030. It is declared as 'the agenda of the people, by the people and for the people' to transform the world for the better by 2030.
- The State of World's Antibiotics 2015 Report: This report focuses on the status of antibiotics and provides policy analysis on: global patterns and trends in antibiotic resistance and antibiotic use in human beings and animals; the existing antibiotic supply and the research and development pipeline; and interventions that have been shown to help rationalize antibiotic use and are practicable in all countries. The report is published by the Center for Disease Dynamics, Economics & Policy and can be accessed at: <http://cddep.org/>

Short Course

Disease Control: Strategies and Policies [January 25 - February 05, 2016] at The Heidelberg Institute of Public Health, Germany. This course aims to improve the understanding of principles and strategies in disease control and equips students with the skills to successfully establish, strengthen or to systematically review disease control programmes. The course has special focus on disease control in disadvantaged populations of developing countries with global, regional and local examples. More details can be accessed at <http://www.klinikum.uni-heidelberg.de/Disease-Control.8022.0.html>

CONFERENCES

2nd World Congress and Exhibition on Antibiotics: The Congress is scheduled during October 13-15, 2016, at Manchester, United Kingdom. The theme of the Congress is "Underlying the Hurdles Involved in Developing New Antibiotics". OMICS International, an amalgamation of open access publications and worldwide international science conferences and events, organizes this congress. More details are available at: <http://antibiotics.omicsgroup.com/abstract-submission.php>

International Conference on Prevention & Infection Control (ICPIC): The 4th ICPIC 2017 is scheduled during 20-23 June 2017 at Geneva, Switzerland. International Consortium for Prevention & Infection Control organizes the conference every alternate year. Details of concluded conference 2015 are available at website. More details can be checked at: <http://icpic.com/2017/>

MOST MACROLIDE ANTIBIOTICS PLUS CALCIUM CHANNEL BLOCKERS – DANGEROUS COMBINATION!

The simultaneous use of clarithromycin (also other macrolide antibiotics) and calcium channel blockers is known to cause serious adverse events due to excessive level of calcium channel blockers in the blood. Calcium channel blockers such as amlodipine, diltiazem, felodipine, isradipine, nifedipine, nisoldipine and verapamil are used to treat hypertension. These calcium channel blockers are metabolized by the liver enzyme cytochrome P450 3A4 (CYP3A4).

Macrolide antibiotics like erythromycin, clarithromycin, and telithromycin are potent inhibitor of CYP3A4 and inhibit the metabolism of drugs which are metabolized by CYP3A4. The use of two groups of medicines together have serious drug – drug interaction with macrolides

inhibiting the metabolism of calcium channel blockers. This results in increased antihypertensive effects of calcium channel blockers putting the patients in the risks of acute kidney injury, low blood pressure and deaths. The common symptoms of toxic levels of calcium channel blockers are: dizziness, swelling, flushing, and heart palpitation. The studies reported in the Canadian Medical Association Journal (February 2011) and Journal of American Medical Association (December 2013) confirm the risks of this dangerous combination. However, azithromycin, another macrolide antibiotic, is not an inhibitor of CYP3A4 and thus safe to use along with calcium channel blockers.

While on calcium channel blockers for hypertension: Avoid erythromycin, clarithromycin and telithromycin. Use azithromycin if a macrolide is the option for treating infection

Websites of Interest

The Center for Disease Dynamics, Economics & Policy (CDDEP): The CDDEP with its office at Washington and New Delhi works in the area of antibiotic resistance, disease control priorities, environmental health, malaria, alcohol and tobacco, and health and development. It publishes a Weekly Digest with a roundup of news on drug resistance and global wealth. The more details can be seen at: <http://cddep.org/>

ReAct - Action on Antibiotic Resistance: ReAct - Action on Antibiotic Resistance is Sweden based independent global network for concerted action on antibiotic resistance. It acts as a forum for ideas, debate and collaboration between diverse stakeholders. It aims for profound change in awareness and action to manage the interacting social, political, ecological and technical forces that drive the rising rate of resistant human and animal infection and the rapid spread of resistance within and between communities and countries. Further details are available at: <http://www.reactgroup.org/>

Medicines to Avoid [Rev Prescriber February 2015]

These medicines are more harmful than beneficial and alternatives are available. In this issue we have included antibacterial medicines.

- Moxifloxacin – It is not more effective than other fluoroquinolone antibacterials but can cause Lyell's syndrome (toxic epidermal necrolysis) and fulminant hepatitis (severe impairment of hepatic function) and has been linked to an increased risk of cardiovascular disorders. It is far more prudent to use another fluoroquinolone such as ciprofloxacin or ofloxacin.
- Telithromycin – Telithromycin has no advantages over other macrolide antibiotics but carries an increased risk of QT prolongation, hepatitis, visual disturbance, and syncope (temporary loss of consciousness caused by fall in blood pressure). Another macrolide such as spiramycin is far more prudent.

FOCUS ON FLUOROQUINOLONE ANTIBACTERIAL DRUGS

Drug	Indication
Ciprofloxacin	Abdominal infections, acute sinusitis, bone and joint infections, gonorrhoea, infectious diarrhea, plague, pneumonia, chronic prostatitis, skin infections, typhoid fever, urinary tract infections
Norfloxacin	Urinary tract infection, urethral and cervical gonorrhoea, prostatitis
Ofloxacin	Acute pelvic inflammatory disease, community-acquired pneumonia, gonorrhoea, prostatitis, skin infections, sudden worsening of chronic bronchitis due to a bacterial infection, urinary tract infections
Levofloxacin	Acute sinusitis, hospital- and community-acquired pneumonia, plague, chronic prostatitis, skin infections, sudden worsening of chronic bronchitis due to a bacterial infection, urinary tract infections
Gemifloxacin	Community-acquired (as opposed to hospital-acquired) pneumonia, sudden worsening of chronic bronchitis due to a bacterial infection
Moxifloxacin	Abdominal infections, acute sinusitis, community-acquired pneumonia, plague, skin infections, sudden worsening of chronic bronchitis due to a bacterial infection

Gemifloxacin and Moxifloxacin have higher risks of adverse events compared to others of the group. Gemifloxacin is associated with higher rate of rash and QT prolongation. Moxifloxacin is not more effective than others but can cause QT prolongation.

This group of antibacterial drugs is usually not of first choice drugs as they have strong association with serious adverse events: tendon injury, diarrhea caused by *Clostridium difficile*, worsening muscle weakness especially in patients with myasthenia gravis, peripheral neuropathy, QT prolongation and fetal damage.

The fluoroquinolone group of antibacterials should be avoided in patients who already have some degree of QT prolongation, have hypokalemia or are taking other drugs that cause QT prolongation.

USING ANTIBIOTICS RATIONALLY

Antibiotics are important resources and let's preserve them for future.

- Use antibiotics only when prescribed. Do not self medicate. Either it may not be useful or may harm you.
- Complete the full course of antibiotics, even you start feeling better. Follow the regimen as advised.
- Remember antibiotics have no effectiveness against viral infections like common cold.
- Do not share antibiotics with others or use leftover medicines.
- Keep them away from reach of children.
- Never take them after expiry date

DISCLAIMER

The Newsletter intends to provide updated and reliable information on medicines and other related issues in an attempt to equip healthcare professionals to take informed decision in recommending medicines to the patients. However, they are encouraged to validate the contents. None of the people associated with the publication of the Newsletter nor the University shall be responsible for any liability for any damage incurred as a result of use of contents of this publication. The brand names of medicines, if mentioned, are for illustration only and the Newsletter does not endorse them.