PHARMANEXUS

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Dear Reader /Health Care Professional,
Send your Drug queries to:

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NEP- FEATURES OF ACADEMIC BANK OF CREDITS (ABC)

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In addition to science and mathematics, the curriculum must also cover the fundamentals of the humanities, games, sports, and fitness, languages, literature, culture, and values to help students grow in all facets of their learning and to broaden their understanding of the world. Education must help students develop their moral character and help them to become ethical, logical, empathetic, and caring people while also preparing them for rewarding careers.

Some of the significant efforts that have been supported in the past year by UGC and GoI include the Academic Bank of Credit (ABC), which will serve as a central repository for the academic credits earned by all students, and the new laws focused on online education.

A virtual/digital repository known as the Academic Bank of Credits (ABC) holds information on the credits, that specific students have racked up over their academic careers. Students will have a number of options for entering and leaving institutions or universities, as well as the ability to create an account. There will be "many exits" and "many entrances" throughout the duration of higher education, and credits will be easily transferable via the ABC. Any student's credit history can be checked at any time using ABC, a dependable resource.

PURPOSE:

- The Academic Bank will be in charge of creating, closing, and verifying student academic accounts.
- It will perform tasks including credit verification, credit accumulation, and student credit transfer/redemption.
- Both the government and organizations provide online and distance learning program.
- Academic credits that students have earned may be redeemed. These credits have a maximum seven-year validity duration.
- After using their credits, students can apply immediately for admission to any university's second year.
- Since the validity is only good for seven years, students must reapply within that time frame.

ABC's anticipated effects on the educational system:

The UGC believes that the ABC's use in the upcoming years will be beneficial. Due to the efficient handling of credits, Higher Education Institutions (HEIs) who take part in the program will greatly profit. An interdisciplinary and multidisciplinary approach is essential right now. Thanks to the Academic Credit Bank, HEIs will be able to help students to take the courses they want to take and graduate with "skill-oriented" jobs.

SOURCE:

https://www.safalta.com/blog/what-does-the-abc-academic-bank-of-credits-stand-for-in-higher-education-institutions#:~:text=The%20%22Academic%20Bank%20of%20Credits,in%20all%20Indian%20educational%20institutions.

PHARMACOGENOMICS AND PERSONALIZED MEDICINE

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First, I would like to remind one common rule “one size does not fit all”. Where the same applies to the treatment with xenobiotics termed drugs. One dose does not fit all patients. Either the person does not respond to the drug or responds well or over responds. If the person does not respond to the drug, it leads to therapeutic failure. If the person over-responds to the drug, it leads to toxicity or adverse drug reactions. The overall aim of drug treatment is the optimal therapy for individual patients.

All xenobiotics undergo the process called biotransformation through pharmacokinetics (ADME) & pharmacodynamics. The major biotransformation is processed in the liver by phase I (CYP450) and Phase II drug-metabolizing enzymes. Also, the drugs are carried to the target sites by drug transporters. Further, the drug binds to its receptor for the pharmacodynamic effect. Throughout the process of drug movement from absorption to end pharmacological action several enzymes, transporters and receptors are involved. The basic concept is all these components are proteins made up of several amino acids. All amino acids are encoded by a specific genetic code.

The genetic variation in the nucleotide sequence (A, T, G, C) leads to defective codon and formation of mismatching amino acid and it leads further to the synthesis of a defective protein, hence the drugs are unable to bind to their specific protein leads to several consequences. Such as the drug failing to carry to a specific site by defective drug transporter, the drug either under metabolized or completely metabolized by the enzymes, or the drug or its metabolite can't exert its pharmacological action through binding with receptors.

The genetic variation is unique and specific to an individual or to a specific population. Over the past several decades, more evidence has emerged to establish a substantial portion of the variability in drug response determined genetically, with age, nutrition, health status, environmental factors, and ethnicity. To achieve individual drug therapy with an optimal predictive outcome, many considered different patterns of drug response among geographically and ethnically distinct populations. All leads to the emergence of new scientific disciplines arising from the confluence of genetics, biochemistry, and pharmacology known as pharmacogenetics and pharmacogenomics. The commercialization of this research application is now known as personalized medicine (PM). PM may be considered a patient's gene variations guided the selection of drugs or treatment protocols that minimize adverse effects or ensure more successful therapeutic outcomes.

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THE INFLUENCE OF GENETICS ON ADVERSE DRUG REACTION OF ANTIPSYCHOTIC DRUGS

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Adverse Drug Reaction is noxious and unintended, and which occurs at doses normally used in man for the prophylaxis, diagnosis, or therapy of disease, or for the modification of physiological function[(1)]

Lithium and other antipsychotic drugs have been administered for more than five decades.[(2)] However, long-term antipsychotic drugs treatment is associated with many adverse reactions, such as weight gain, sexual dysfunction, akathisia, extrapyramidal disorder, orthostatic hypotension, hyperprolactinemia, etc., [(3)]

Drug metabolizing enzymes (DMEs) have been a key focus of pharmacogenetics since its inception in the 1950s.[(4,5)] A significant amount of information gathered over the preceding decades by numerous independent groups shows significant functional changes in DMEs have a direct effect on the pharmacokinetic features of drugs metabolised by these enzymes.[(6)] This has been especially valid for psychiatric drugs.[(7)] Numerous research has shown that the prevalence, symptom manifestation, diagnostic techniques, patient recognition, and therapies of psychotic diseases vary between Asian and Western nations. The prescription of various antipsychotic drugs must take into account ethnic

disparities in pharmacological profiles because these variations may affect treatment outcomes and side effects.[8]

Smaller than typical doses of these drugs are advised for Asian patients due to higher plasma benzodiazepine concentrations and lower drug clearance seen in Asians compared to Caucasians. These findings are consistent with clinical observations of lower dosage requirements for Asian patients.[9]

Multiple investigations have demonstrated that the plasma concentrations of antipsychotics metabolised by certain cytochrome P450 enzymes are higher in East Asian people than in Western populations. When administering various antipsychotics, Psychiatrists in the East Asian region must be aware that lower doses are required than those recommended on the prescription labels.

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ADVERSE DRUG REACTION OF LAMIVUDINE

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Lamivudine is approved by CDSCO and marketed in the country in various dosage form. Lamivudine is used along with other medications to treat human immunodeficiency virus (HIV) infection in adults and children 3 months of age and older. Lamivudine is used to treat hepatitis B infection.

Lamivudine is in a class of medications called nucleoside reverse transcriptase inhibitors (NRTIs). It works by decreasing the amount of HIV and hepatitis B in the blood. Although lamivudine

HIV, it may decrease your chance of developing acquired immunodeficiency syndrome (AIDS) and HIV-related illnesses such as serious infections or cancer. Taking these medications along with practicing safer sex and making other lifestyle changes may decrease the risk of transmitting (spreading) the HIV or hepatitis B virus to other people.

Lamivudine comes as a tablet and oral solution (liquid) to take by mouth. Lamivudine (Epivir) is usually taken once or twice a day with or without food. Lamivudine (Epivir-HBV) is usually taken once a day. Follow the directions on the prescription label carefully, and ask the doctor or pharmacist to explain any part that is not understood. Take lamivudine exactly as directed.

Lamivudine on individual case study report found that hearing loss as adverse drug reaction. On this regard it was noticed by CDSCO, and concluded that prescribing information leaflet should be incorporated with this information. Subsequently the PvPi deliberated to the subject expert committee. After taking into consideration the recommendation of the the deliberation's committee, the PvPi suggested to include and insert the hearing loss information in the Lamivudine drug literature.

SOURCE:

Central Drugs Standard Control Organization, Directorate General of Health Services, Ministry of Health & Family Welfare, India.

Government of India

CHLOROQUINE PHOSPHATE – ADR CDSCO NOTIFICATION

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Malaria is treated with and prevented using chloroquine phosphate. Amoebiasis can also be treated with it. Antimalarials and amoebicides are the class of medications that includes chloroquine phosphate. It functions by eradicating the parasites that cause amebiasis and malaria. To be swallowed whole, chloroquine phosphate is available as a tablet. Adults typically take one dose once each week on the same day of the week to avoid malaria. How many tablets need to be taken for each dosage should be specified by your doctor.

One dose is required starting two weeks prior to travel to a region where malaria is widespread, for the duration of the stay, and then for eight weeks following return from the region. The doctor might advise to immediately take twice the recommended dose of chloroquine if we are unable to begin taking it for two weeks before going (for the first dose). Adults who experience rapid, severe bouts of malaria often receive one dose right away, followed by one-half of the dose six to eight hours later, and one-half of the dose once daily for the following two days.

The dosage of chloroquine phosphate is determined by the child's weight for the prevention and treatment of malaria in new-borns and young children.

The dosage of chloroquine phosphate the child should take will be determined by the doctor based on this calculation. One dose is often used for two days to treat amoebiasis, followed by half the dose in the consecutive days for two to three days

Usually, it is administered along with other amebicides. The drug chloroquine phosphate may upset your stomach so, take chloroquine phosphate is preferred to take along with food. Chloroquine phosphate is infrequently used to treat sarcoidosis, discoid lupus erythematosus, systemic lupus erythematosus, and porphyria cutanea tarda. Discuss the potential dangers of using this medication for the illness with the doctor.

Take antacids 4 hours before or after taking chloroquine. Ampicillin should be taken at least two hours before or after chloroquine.

Inform the physician if we have or have ever had liver disease, heart disease, a prolonged QT interval (a rare heart condition that can cause irregular heartbeat, fainting, or sudden death), an irregular heartbeat, low levels of magnesium or potassium in the blood, G-6-PD deficiency (an inherited blood disorder), hearing issues, porphyria or other blood disorders, psoriasis, seizures, weakness in your knees and ankles, diabetes, or if we consume large amounts.

However, recent reports of CDSCO notice that chloroquine causes Stevens Johnson syndrome and toxic epidermal necrosis have been made through several case studies. This was promptly forwarded to the Subject Expert Committee, which made the decision that the leaflet for chloroquine pills must include this information. Then, it was decided communicated to the prescriber.

SOURCE:

Central Drugs Standard Control Organization, Directorate General of Health Services, Ministry of Health & Family Welfare, India.

Manufacture of chloroquine formulation under jurisdiction to mention Stevens Johnson syndrome as an adverse drug reaction in the package.

RANITIDINE – SAFE OR NOT ???

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Drug safety is a myth. There is nothing as safe drug. Every drug has some kind of adverse effect which needs to be monitored.

We all have come across the latest news in which the government has removed 26 drugs from the essential drug list. The reason was mentioned as these drugs contain substance which is carcinogenic in nature.

Union health ministry on 13 September 2022, dropped 26 drugs in the new revised list released by National List of Essential Medicines (NLEM) including ranitidine and other stomach-related ailments.

Ranitidine is a H2 blocker which is available both as an over-the-counter (OTC) and a prescription drug in India. Recently, The Government of India had constituted a Core Committee under the Chairmanship of Dr. V.M. Katoch the then Secretary, Department of health Research and Director General, ICMR, Ministry of Health & Family Welfare for reviewing and revising the National List of Essential Medicines (NLEM), 2011 in the context of contemporary knowledge of use of therapeutic products. The Government of India has accepted the recommendations of the Committee as a whole after examination of the final report submitted by the SNCM on 10.09.2022 and adopted the National List of Essential Medicines (NLEM), 2022.

In the newly adapted Essential Drug List, Ranitidine tablet 150mg, Oral liquid 75mg/5ml and Injection 25mg/ml was deleted.

Earlier in June 2020, the United States' Food and Drug Administration (FDA) had recalled all ranitidine products -- injectable and oral -- following the revelation of low-level N-nitrosodimethylamine (NDMA) presence. A study published by the Indian Journal of Pharmacology found out N-Nitrosamines is associated with stomach, esophagus, nasopharynx, and bladder cancers.

To help ensure that safe and effective drugs are sold in the U.S., they tested selected drugs in state-of-the-art FDA laboratories and through research contracts and grants. This testing program included APIs and finished drug products. They tested using the same standards that were part of the drug approval process for identity, strength, and purity.

In April, FDA requested that manufacturers withdraw all prescription and over-the-counter (OTC) ranitidine drugs from the market immediately. This was the latest step in an ongoing investigation of a contaminant known as N-Nitrosodimethylamine (NDMA) in ranitidine medications (one commonly known brand name is Zantac). FDA began an investigation into potential NDMA contamination in drug products containing ranitidine when it first obtained information that there was a possibility of impurities in those products. NDMA is a probable human carcinogen (a substance that could cause cancer).

Last summer, the Agency became aware of independent laboratory testing that found NDMA in ranitidine. Low levels of NDMA are commonly ingested in the diet; for example, NDMA is present in foods and in water. These low levels would not be expected to lead to an increase in the risk of cancer. However, sustained higher levels of exposure may increase the risk of cancer in humans.

New FDA testing and evaluation confirmed that NDMA levels increase in ranitidine even under normal storage conditions, and NDMA has been found to increase significantly in samples stored at higher temperatures, including temperatures the product may be exposed to during distribution and handling by consumers.

The testing also showed that the older a ranitidine batch is, or the longer the length of time since it was manufactured, the greater the level of NDMA, possibly resulting in ranitidine product being above the acceptable daily intake limit. The longer the exposure of the drug, the higher was the level of contamination. The drug was banned based on risk versus benefit ratio evaluated after postmarketing surveillance and adverse drug reaction (ADR) reporting system.

References:

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DEPARTMENTAL ACTIVITIES

One Day Symposium on Clinical Pharmacy Practice

The department of Pharmacy Practice organized a One Day Symposium on Clinical Pharmacy Practice on 06/07/2022. The speakers were

- Dr. Noohu Abdulla, M.Pharm, Ph.D, Department of Clinical Pharmacy, King Khalid University, Saudi Arabia.
- Dr. D. Krishna Kumar, M.Pharm, PhD, Professor and Head, Department of Pharmacy Practice, The Erode College of Pharmacy, Erode.
- Dr. S. Manokaran, MPharm, Ph.D, Professor, Department of Pharmacognosy, The Erode College of Pharmacy, Erode.

The main topics covered in the symposium were:

- Pharm.D in India – The current scenario by Dr. D Krishna Kumar
- Interactive learning skills for Pharm.D curriculum by Dr. Noohu Abdulla
- Forensic Toxicology by Dr. S. Manokaran
- Pharmacy Job Opportunities in Saudi Arabia by Dr. Noohu Abdulla Khan

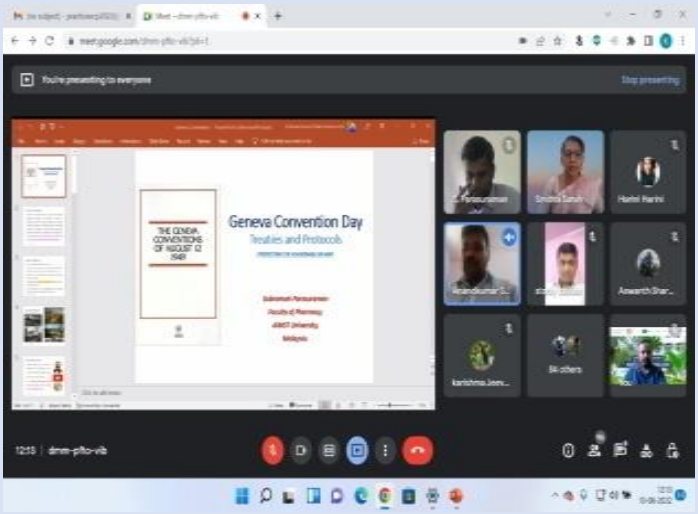
Around 100 Pharm.D students attended the symposium and the certificates were distributed to the participants. It was a very interactive session.

Freshers Day celebration – PharmD 2nd

The 2nd year PharmD students organized a fresher's day for their juniors on 11.08.2022. They had invited all students and staff to the function. It was the grand event with music, dance and lots of fun. The 2nd PharmD students grandly welcomed their juniors.

International Webinar on Geneva Conventions

The Department of Pharmacy Practice conducted one day International Webinar on Geneva Conventions Day – treaties and Protocols on 13.08.2022. Dr. S. Parasuraman was the speaker for the webinar. Dr. S. Parasuraman is renowned speaker who is working as a Faculty of Pharmacy in AIMST University, Malaysia. The topic covered was a unique one which was very refreshing and informative. More than 100 participants joined the webinar through Google meet and certificates were provided to all.



75th Independence Day

We celebrated the 75th Independence Day at our college. The program was organized by 4th PharmD students. We started off with flag hoisting ceremony by our beloved Principal and various Independence Day messages by our students and staffs. The function concluded by the sweet distribution to students by our Principal.

Teachers Day celebration

The Interns celebrated Teachers Day at the Deaf school at Tirupur. We honoured the teachers of the school and distributed gifts to all the teachers and students of the school. The day was celebrated with fun filled games and other cultural programmes. Our students entertained the students and teachers of Tirupur School with their amazing dance performances. It was day filled with fun and joy.