



UPM
UNIVERSITI PUTRA MALAYSIA

FAKULTI PERUBATAN & SAINS KESIHATAN
FACULTY OF MEDICINE AND HEALTH SCIENCES

CiRNeT
Centre for Industrial Relation and Network
Pusat Hubungan dan Jaringan Industri



Beacon
PRECISION
Diagnostics
Advancing Tomorrow's Cures

2023



MR. HOE CHEAH HOW
CEO OF BEACON HOSPITAL
'LEADING THE WAY IN CANCER CARE'

MR. LIM JACK SHEN
VICE PRESIDENT, FEDERATION OF ASIAN
PHARMACEUTICAL ASSOCIATIONS
'REGIONAL COLLABORATION TO
INNOVATE HEALTHCARE'

DR. REBECCA TAY SOOK HUI
CEO OF BEACON PRECISION DIAGNOSTICS

THURSDAY
21 DECEMBER, 2023
08:00 AM - 12:00 PM
DEWAN KULIAH UTAMA
FACULTY OF MEDICINE AND HEALTH SCIENCES

CEO TALK

'LEADERSHIP IN HEALTHCARE'

CEO @ PTJ FAKULTI PERUBATAN DAN SAINS KESIHATAN

DISEDIAKAN OLEH : HARITH MUHAMMAD HAZIM SHAIK MOHD SHERIFF
URUSETIA JINM, FAKULTI PERUBATAN DAN SAINS KESIHATAN



CEO TALK: LEADERSHIP IN HEALTHCARE

Program CEO@PTJ adalah merupakan program yang menghimpunkan CEO (Ketua Pegawai Eksekutif) dan peneraju industri tempatan dan antarabangsa ke universiti di Malaysia bagi berkongsi pengetahuan dan pengalaman mereka dengan pelajar dan komuniti universiti. Bertepatan dengan objektif program CEO@PTJ UPM, satu program ceramah di bawah program CEO@PTJ telah diadakan bertempat di Dewan Kuliah Utama, Fakulti Perubatan dan Sains Kesihatan pada 21 December 2023. Program satu hari ini diadakan bermula dari pukul 9 sehingga 1 petang mendapat sambutan yang sangat memberangsangkan bukan sahaja dari kalangan staf UPM, tetapi turut mendapat sambutan yang sangat baik dikalangan pelajar dengan kehadiran seramai 97 orang staf dan 248 pelajar.

OBJEKTIF & PENGISIAN PROGRAM

03

Objektif utama program ini adalah untuk memberi motivasi dan pendedahan industri kepada pelajar khususnya pelajar tahun akhir dan staf Fakulti Perubatan dan Sains Kesihatan selain turut bertujuan untuk membincangkan potensi kolaborasi diantara Industri Beacon Precision Diagnostics dan Fakulti Perubatan dan Sains Kesihatan. Intipati ceramah adalah seperti dilampiran.

Program dimulakan dengan ucapan aluan daripada Timbalan Dekan, Profesor Ts. Dr. Cheah Yoke Kqueen, FASc diikuti ucapan pembentangan daripada CEO Beacon Hospital, VP Federation of Asian Pharmaceutical Associations dan CEO Beacon Precision Diagnostics . Program diakhiri dengan penyampaian cenderahati dan sesi bergambar.

Berdasarkan maklumbalas dari peserta program, rata-rata peserta memberi maklumbalas yang positif dan berpendapat program ini sangat memberi impak kepada mereka khususnya pelajar tahun akhir. Ceramah yang disampaikan secara versatil dan bersahaja dengan memasukkan elemen komunikasi dua hala dengan audien menjadikan program ini sangat berimpak dan berinformatif dengan libatsama aktif peserta terutama yang bertanya soalan kepada penceramah.



04



potential consequences of changes in drug metabolism due to mutations in drug-metabolizing enzymes

Genetic mutations in drug-metabolizing enzymes can either slow down or speed up drug processing, affecting how drugs work in the body. This can impact the effectiveness and safety of medications. Genetic variations are crucial in predicting how individuals respond to drugs, helping identify who may benefit, who may not, and who might experience adverse reactions. For example, variations in the CYP2C19 gene can influence how the drug clopidogrel is metabolized, affecting patient outcomes. The document also notes the increasing use of genetic information in drug labels but acknowledges challenges in ensuring its clinical validity. In summary, understanding these genetic variations is vital for personalized prescribing, making medications safer and more effective.

unlocking personalized medicine: the impact of pharmacogenomics on drug response and safety

Pharmacogenomics (PGx) plays a crucial role in identifying how individuals respond to medications by examining genetic variations that affect drug metabolism and effectiveness. These variations can alter how drugs are processed in the body, impacting how they work and potentially causing adverse reactions. As PGx information becomes more common in drug labels, it helps healthcare providers understand how genetic differences can influence drug response. By tailoring medication regimens to individual genetic profiles, PGx aims to enhance medication safety and effectiveness. This personalized approach also helps healthcare providers determine appropriate dosages and alternative treatments, ultimately improving patient outcomes and reducing the risk of adverse reactions.

INTIPATI PEMBENTANGAN

05



Business & Policy Precision Oncology Diagnostics Disease Areas Precision Medicine

FDA Updates Xeloda Labeling to Make DPYD Variant Risks More Explicit

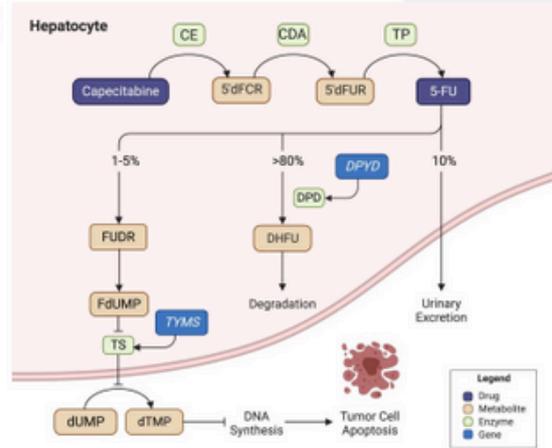
Dec 19, 2022 | staff reporter

NEW YORK – The US Food and Drug Administration has updated labeling for Xeloda, a commonly prescribed chemotherapy for gastrointestinal, breast, and head and neck cancer, to further clarify that patients with certain pharmacogenetic variants are at increased risk for life-threatening adverse reactions.

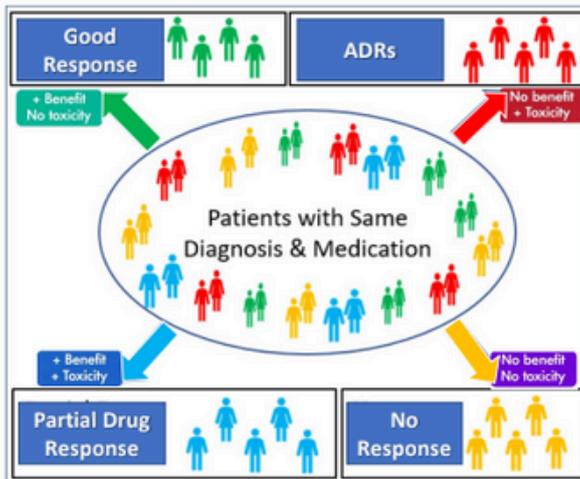
In response to a citizen petition, the FDA in 2016 strengthened the toxicity warnings in labeling for fluoropyrimidine-based chemotherapies, Xeloda and 5-FU, and told doctors to avoid these drugs in patients completely lacking dihydropyrimidine dehydrogenase. But the agency also stated at the time that “there is insufficient data to recommend a specific dose in patients with partial DPD activity as measured by any specific test.”

The latest labeling update for Xeloda is spurred by another citizen petition filed in 2020 asking the FDA to add a new boxed warning more prominently highlighting the risk of severe toxicity when patients with DPD deficiency receive treatment with fluorouracil or Xeloda, and asking the agency to recommend that doctors screen patients for DPD deficiency before starting these treatments.

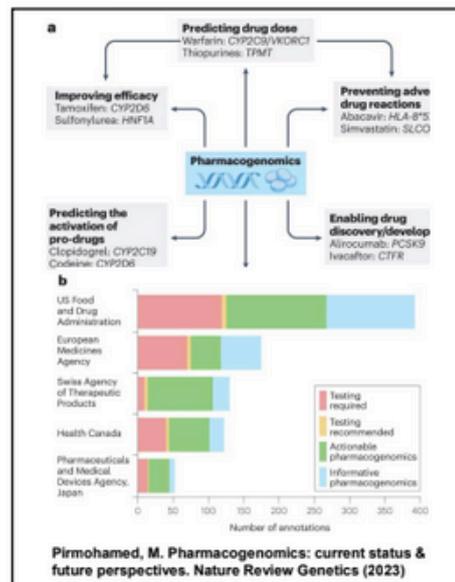
The FDA last week responded to the citizen petition and partly granted the request. To the existing language about the risk of DPD deficiency, the agency has added two new paragraphs telling doctors to “consider testing [patients] for genetic variants of DPYD prior to initiating Xeloda to reduce the risk of serious adverse reactions if the patient’s clinical status permits and based on clinical judgement.”



What Is Pharmacogenomics (PGx)?



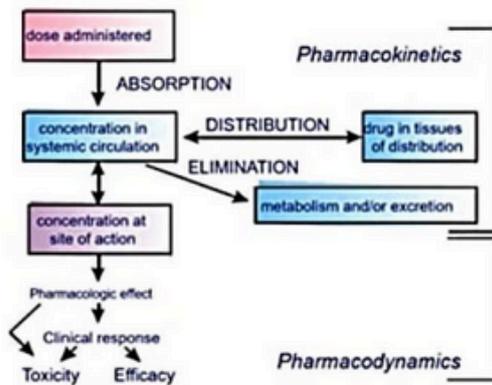
Pharmacogenomics (PGx) plays an important role in identify responders & non-responders or ADRs to medications



Pirmohamed, M. Pharmacogenomics: current status & future perspectives. Nature Review Genetics (2023)



Determinants Of Drug Efficacy & Toxicity



- Pharmacokinetic**
 - Absorption (*ABCG2*)
 - Distribution (*SLCO1B1*)
 - Metabolism (*CYP450 family*)
 - Excretion (*UGT1A1*)
- Pharmacodynamic**
 - Receptors (*SLC6A4*)
 - Ion Channels (*CFTR*)
 - Enzymes (*DPYD*)
 - Immune system (*HLA genes*)

Genetic variations play important roles in drug's ADME Pharmacokinetic and Pharmacodynamic & Regulating the Drug Efficacy and Toxicity

Death Of 13-Day-Old Full-Term Baby (Lancet)

THE LANCET

Submit Article Log in Register Subscribe

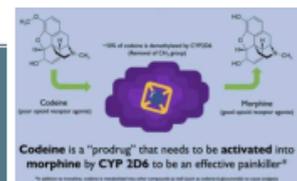
CASE REPORT | VOLUME 368, ISSUE 9536, P704, AUGUST 19, 2006

Purchase Subscribe Save Share

Pharmacogenetics of morphine poisoning in a breastfed neonate of a codeine-prescribed mother

Dr. Prof Gideon Koren, FRCPC • James Cairns, MD • Prof David Chitayat, FRCPC • Andrea Gaele, PhD • Steven J Leeder, PhD

Published: August 19, 2006 • DOI: [https://doi.org/10.1016/S0140-6736\(06\)69255-6](https://doi.org/10.1016/S0140-6736(06)69255-6)



References
Article info

In April, 2005, a full-term healthy male infant, delivered vaginally, showed intermittent periods of difficulty in breastfeeding and lethargy starting on day 7. During a well-baby paediatric visit on day 11, the paediatrician noted that the baby had regained his birthweight. On day 12, however, he had grey skin and his milk intake had fallen. He was found dead on day 13. Postmortem analysis showed no anatomical anomalies. Blood concentration of morphine (the active metabolite of codeine) was 70 ng/mL by gas chromatography-mass spectrometry (GC-MS)—neonates breastfed by mothers receiving codeine typically have morphine serum concentrations of 0–2.2 ng/mL.¹ The mother had been prescribed a combination preparation of codeine 30 mg and paracetamol 500 mg

EXAMPLE Clinical Recommendations based on FDA Black Box Codeine Warning

Metabolizer Type	Genetic Status	Recommendation
Ultra-Rapid Metabolizer	Functional (4 DNA helices)	Switch medication (0-10 min, avoid codeine)
Normal Metabolizer	Functional (2 DNA helices)	Codeine dose is fine
Intermediate Metabolizer	Slow (1 DNA helix)	Codeine dose needs monitoring
Poor Metabolizer	Non-functional (0 DNA helices)	Switch medication

He T, Lardieri AB, Morgan JA. Pharmacist and Pediatrician Knowledge of Codeine Use in Children. *J Pediatr Pharmacol Ther.* 2018;23(4):293-297.

GALERI FOTO

07









