

A Brief Report on Invited Impact Pharmacy Lecture Series 2022 – Lecture 1

(New connections and learning)

Date: 19.12.2022

Name of the presenter:

Dr Vijay Suppiah
Senior Lecturer in Pharmacy
Uni SA Clinical and Health Sciences
University of South Australia



Title of the presentation:

Risks associated with psychotropic polypharmacy in a hospitalized patient cohort

Program Organized by:

Dept. of Pharmacy Practice &
Pharmacy Education Unit
JSS College of Pharmacy, Ooty

New Connections and learning: Pharmacy Practice- “Learning in the flow of work”

Making learning is a part of everyday work – and everyone’s experience at work differs of course and it multiplies at different places. Internship training for Pharm D students is an opportunity to learn new and provide service to the needy patient population. To enhance their learning experience, the institute has created new connections and learning opportunity at various practice settings. Our students are very excited to be at new practice site(s) to learn and demonstrate/shape their competencies.

Dr Vijay Suppiah is a pharmacy academic with research interests in pharmacogenomics in multimorbidity, especially in mental disorders. His research projects are based on patients’ genetic make-up in informing medication choices mainly in cancer and mental health. Additionally, he is also interested in the use of and long-term effects of psychotropic educations across the lifespan.

Dr Vijay ardently started his presentation on Risks associated with psychotropic polypharmacy in hospitalized patients and mentioned about the common side effect associated with typical and traditional use of anti-psychotic drugs; sedation. Dr Vijay then emphasized the fact of increasing prevalence of psychiatric disorders like depression and anxiety among the Australians and the common drugs used to treat the same. Even though the common side effects are effectively managed either by the patients themselves or by the health care providers, Dr Vijay mentioned that QT prolongation in ECG of patients taking such drugs was generally overlooked and it was the need of the hour to diagnose such patients in the early stages. QT prolongation is a heart rhythm disorder that can potentially cause fast, chaotic heartbeats. Long QT syndrome can be inherited or caused by a medication or condition. It often goes undiagnosed or is misdiagnosed. People with this condition may not develop symptoms for a long time. When symptoms do occur, they can be severe and may include sudden fainting, seizures or even sudden death.

Dr Vijay eventually summarized the studies done by his team to identify the patients on anti-psychotics who may be at higher risk for developing QT Prolongation. He also emphasized about various enzymatic predisposing factors that may either way affect the QT prolongation induced by such drugs. The study summaries were really an additional information to the student participants of this webinar and the session was concluded by Dr S Ponnusankar after an interesting Q/A session.

There were nearly 60 above participants who were fruitfully benefited with this lecture.

Zoom Meeting

Background

Lifetime and 12-month mental disorders, 2020-21

University of South Australia Australian Centre for Precision Health

Source: ABS 2022, National Study of Mental Health and Wellbeing; Australian Institute of Health and Welfare 2022, Mental health services in Australia

Vijay Suppiah

Zoom Meeting

Jeyaram Bharat...
Vijay Suppiah
Harshini V S
Sarath Menon

Jeyaram Bharathi J
Logeshi/Guru Ramakris...
Vijay Suppiah
Harshini V S
Sarath Menon
Sanjay Madhavan

EM Extensive Metabolizer

IM Intermediate Metabolizer

PM Poor Metabolizer

UM Ultrarapid metabolizer

MRs: 0.1, 1, 10, 100

Legend: duplicated gene, normal allele, partially defective allele, null allele

	Ultra rapid	Extensive (Normal)	Intermediate	Poor
CYP2C19	40	28	25	7
CYP2D6	1-2	77-92	2-11	5-10
CYP3A4	-	80-94	6.2-19	0.1-1.1
CYP3A5	-	0.2	18.4	81.4

27

Zoom Meeting
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What about PGx implications?

Main Enzyme	Medications and Transmitters Affected (Paired to the Gene)		
	Anti-Depressant	Anti-Psychotics	Mood-Stabilizer
CYP2C19	Imipramine, Amitriptyline, Trimipramine, Clomipramine, Citalopram, Escitalopram	-	-
CYP2D6	Amitriptyline, Fluvoxamine, Paroxetine, Venlafaxine, Fluoxetine, Mirtazapine, Vortioxetine.	Aripiprazole, Risperidone, Bexipiprazole	-
CYP1A2	Amitriptyline, Clomipramine, Trimipramine, Imipramine, Doxepin, Mirtazapine.	Olanzapine, Azenapine, Clozapine	-
CYP3A4	Mirtazapine	Haloperidol, Clozapine, Aripiprazole, Quetiapine, Levomepromazine, Bexipiprazole	Carbamazepine
CYP2C9	-	-	Valproic acid
CYP2C8	-	-	Carbamazepine
CYP2B6	Sertraline	-	-



Source: Alchakee et al., 2022 Int J Mol Sci 5

Dr S Ponnusankar Jeyaram Bharat...

Vijay Suppliah Aman Khandelwal

Rebinno De Alex

Sarath Menon

Sai Jayadeep M S

QT prolongation

- Prolongation of the start of the Q wave and end of the T wave on an ECG.
- QT interval prolongation is associated with torsade de pointes and sudden cardiac death.
- QT interval prolongation has been recognized as a side effect of many commonly used medications including antipsychotics

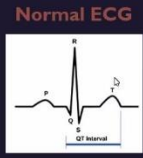


Image adapted from: <https://www.lsbmedica.com/molecular-diagnostics/articles/29478091/several-genes-linked-to-long-qt-syndrome-reappraised.html>






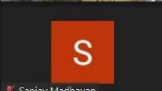
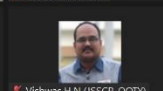
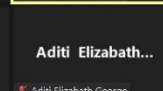

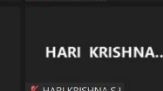
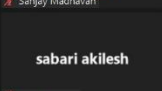
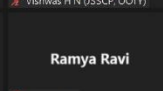
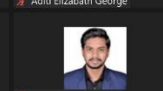

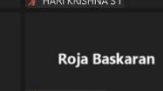
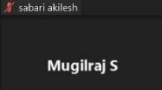


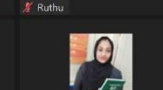

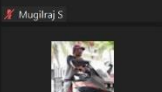

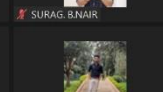
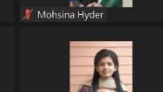
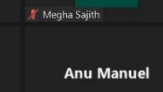
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