

## **Department of Pharmacology, CHRI**

### **Online CME on “Water, Waterborne diseases (WBDs) and Pharmacotherapy of WBDs”**

**31.10.2020; 9am to 7pm**

#### **Consolidated Report of the Event**

The CME was conducted on 31.10.2020 through virtual Zoom platform. 470 participants from 70 + institutions across India had registered for the CME.

The objectives of the CME were to foster discussion and strengthen the awareness among the participants of current status of water sources in India, the importance of safe water use and to know about the various waterborne diseases and the drug treatment of the waterborne diseases.

The program was started with Inaugural function. The chairperson of the organizing committee, Dr. A. Ruckmani, HOD, Pharmacology introduced the theme of the CME. The organizing secretary of the CME, Dr. K.R Ilamathi conducted the proceedings of the CME.

The Vice Principal Dr.R.Arunkumar welcomed the dignitaries and participants. The Registrar of CARE, Mrs. Jeyendra Saraswathi delivered the special address and wished success for the CME. The Dean, Dr. Pichai Balashanmugam then addressed the participants. The honorable Vice chancellor of CARE inaugurated the CME and delivered the inaugural address. This was followed by the vote of thanks rendered by Dr. K.R Ilamathi.

The CME program commenced after a short break of 10 minutes. It was held in 3 sessions. Session 1 in the morning included the 3 lectures by the guest speakers each lasting approximately 45 minutes with 15 minutes of question answer session and interaction.

**Lecture 1- Water, Ecology and Environment - How safe are we?** By Professor Dr. Janakarajan, President, South Asia Consortium for interdisciplinary Water Resources Studies (SaciWATERS), Hyderabad and former Professor and Director, MIDS, Chennai and was moderated by Dr. Ruckmani A, Professor and Head, Pharmacology, CHRI

**Lecture 2 – Water borne Diseases – An Overview** by Dr. P.M. Umesh Kumar, Head of Microbiology & Lab TQM, King Salman Hospital, Riyadh, moderated by Dr.Priyadarshini Shanmugam, Professor & Head, Microbiology, CHRI.

**Lecture 3 - Pharmacotherapy of Water Borne Diseases** by Dr. Punngai, Professor and Head, Pharmacology, SRIHER, Porur. It was moderated by Dr.V.R. Mohan Rao, Professor and Head, Department of Internal Medicine, CHRI.

Each lecture was followed by an interesting interactive session with queries being clarified and comments shared. The Morning session was concluded at 1.30 PM


The afternoon session began after a 30 minutes lunch break

The first afternoon session was the **Quiz Program** on the topic **“Water borne diseases and Pharmacotherapy of Waterborne diseases”** Conducted by Dr. Thirunavukkarasu, Prof & Head, Pharmacology, Saveetha Medical College and moderated by Dr.M.Duraivel, Assistant Professor, Pharmacology, CHRI.

The last session of the CME was the **Poster Session**, which was started at 4 PM moderated by Dr. Anu, Assistant professor of Pharmacology and Dr. Abinaya, Tutor, Dept. of Pharmacology, CHRI. Dr. Lakshmi, Dean I/C, College of Pharmacy, CHRI and Dr Vignesh, Professor of Internal medicine were the judges for the poster session. 14 Participants from different medical colleges including CHRI presented their posters through Zoom portal. The judges critically assessed the posters and gave valuable suggestions for improvement for some.

Three participants from the faculty and three from postgraduates were selected for 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> prize.

The CME was concluded at 7 PM with the concluding remarks and vote of thanks delivered by the organizing secretary.



**Fixed drug eruptions (FDE) are a type of cutaneous adverse drug reactions**

During the COVID times there is a significant increase in self-medication among general public


Here is an interesting case report of Sattranidazole induced FDE which was ignored initially as bug bite

This CERTAIN type of adverse reaction improved after cessation of the drug and treatment

### Sattranidazole induced fixed drug eruption – mistaken for bug bite

#### A case report

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**Fixed drug eruption**

- Cutaneous drug reactions are the most frequently occurring adverse drug reactions<sup>1</sup>.
- Fixed drug eruptions (FDE) are drug eruptions that appear as pruritic, well-circumscribed, round / oval-shaped, erythematous macules / edematous plaques
- Characteristically recur at the same sites up on re-exposure to the offending drug.
- On repeated exposure the number and severity of lesions may increase
- Usually resolve spontaneously with residual hyper pigmentation
- Causality of adverse drug reactions can be assessed using Naranjo scale or WHO scale




Fig 2: Day 3 - After stopping the drug




Fig 3: Follow up after a month

**DISCUSSION**

- Sattranidazole has good oral bioavailability and t1/2 =14 hrs
- Similar in potency with that of Metronidazole
- But devoid of producing metallic taste, neurological adverse effects and disulfiram like reaction
- The patient's relative, an alcoholic could have been prescribed this tablet for these advantages but for him the treatment was uneventful
- Many reports of FDE had been reported for other nitroimidazoles except Sattranidazole
- The causality assessment using WHO scale shows it is CERTAIN

Temporal association	+
Dechallenge	+
Rechallenge	+
Concomitant diseases	-

**Nitroimidazoles**

- Low molecular weight antimicrobial compounds
- Excellent activity against anaerobic microorganisms and protozoa
- The first line drugs for hepatic and intestinal amoebiasis
- Metronidazole, tinidazole, ornidazole, secnidazole & sattranidazole have a similar nitroimidazole ring but different side chains (Fig 1)
- Only metronidazole and tinidazole have been reported to cause FDEs with cross sensitivity to each other<sup>2</sup>.

**Case history**

A 30 year old woman who had diarrhoea episodes self-medicated herself with a tablet from her relative

Few hours later she had mild itching and redness over her lower lip, applied coconut oil and ignored it as a bug bite

She discontinued treatment after just one tablet as her diarrhoea improved but the lesion on lip persisted which faded after a month

5 months later again as she had loose stools she took the tablet from the left over strip

Within few hours she developed intense itching, redness and blistering exactly at the same site of previous reaction

This time she sought medical attention and her FDE was confirmed and the offending drug was withdrawn immediately.

Systemic antihistamines & topical vaseline gel improved her symptoms (Fig 2). Follow up after one month showed residual hyperpigmentation (Fig 3)

**Message to the public**

Awareness to all

- about adverse drug reactions
- prompt reporting
- the cost to be incurred in managing ADRs & the problem of antimicrobial resistance

should be created through public forums and other media

This would minimise the emergence of Drug resistance and the burden of expenditure to treat ADRs.

**CONTACT**

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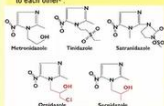


Fig 1: Structure of Nitroimidazoles

**REFERENCES**

- Chugh N, Samson, Edward M, Crow, and Anthony A. (2015). *Pharmacology: Principles and Practice*. 2015; 15(1): 327-379.
- Kumar AJ, Sharma R, Rajagopal M, Kaur S. Fixed Drug Eruptions in Nitroimidazole class: sensitivity to metronidazole. *Dermatology* 199; 102: 229.

# COVID 19 – Yes, I care

- *I count every day and watch TV for the latest update...*
- *I am safe at home, washing my hands and wearing the mask whenever I am compelled to go out*
- *But, How about those who are forced to go out to earn their livelihoods?*
- *How about those who cannot afford a mask and who do not have access to adequate water*

## PLUS THERE IS

Increasing Non-Covid Deaths for the very reason of inadequate and unsafe water supply, poor ecological and environmental conditions.

# NON-COVID, Who Cares?

## Burden of problem – Africa & Asia

Global Enteric Multi-Drug Resistant (GEM) in multiple sites in Sub-Saharan Africa and South Asia

- *Cryptosporidium* spp. was second leading cause (after rotavirus) as the leading cause for moderate to severe diarrhea in children under five.
- The annual burden of cryptosporidial diarrhea in children under two was estimated as
  - 2.9 million cases in Sub-Saharan Africa
  - 4.7 million cases in South Asia
- *Cryptosporidium* attributable **deaths** in children under two were estimated as **202,000** in both Sub-Saharan Africa and South Asia.
- In an estimate based on results from community-based studies in **India, *Cryptosporidium* alone contributed to 3.9–7.1 million diarrheal episodes and 58,000–146,000 deaths each year in children under two**