JSS ACADEMY OF HIGHER EDUCATION & RESEARCH
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CLINICAL PHARMACY NEWSLETTER

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INSIDE THIS ISSUE

IPATASERTIB – AN AKT INHIBITOR FOR THE MANAGEMENT OF PROSTATE CANCER

The investigational kinase inhibitor Ipatasertib (Roche), which targets a key cancer metabolic pathway, has shown promise when used in combination with Abiraterone in the treatment of patients with untreated asymptomatic or mildly symptomatic metastatic castration-resistant prostate cancer (mCRPC). New results with the combination were presented online during the European Society of Medical Oncology (ESMO) Virtual Congress 2020. The new results come from the phase 3 IPATential 150 trial, which met only one of its two primary endpoints, as mentioned by the investigators.

The combination of Ipatasertib and Abiraterone improved radiographic progression-free survival (rPFS) for patients with mCRPC with PTEN loss, as assessed with immunohistochemistry (IHC), in comparison with Abiraterone alone. But the trial failed to meet its other primary endpoint of rPFS in the intention-to-treat (ITT) population, which included patients without IHC evidence of PTEN loss.In this primary analysis, the combination of Ipatasertib plus Abiraterone as a first-line treatment for mCRPC resulted in significantly superior radiologic progression-free survival and antitumor activity compared with placebo plus Abiraterone in patients with PTEN loss, first-line mCRPC.

PTEN loss occurs in about 40% to 50% of mCRPC cases. Loss of the gene leads to activation of the PI3K/AKT pathway and is associated with worse prognosis and reduced benefit from androgen receptor (AR) blockade.

Interestingly, among patients with PTEN loss, assessment of rPFS using next-generation sequencing (NGS) rather than by IHC showed a wider separation of survival curves in favor of the combination.

AKT Inhibitor a New Approach:

Ipatasertib is an oral small molecule that binds to the adenosine triphosphate (ATP)-binding pocket of all three isoforms of AKT. The drug inhibits AKT serine-threonine kinase activity and has been shown to improve the antitumor effects of AR blockade in prostate cancer models. Reciprocal cross-talk has been demonstrated between AR signalling and PI3K/AKT signalling, enabling prostate cancer cell survival, while dual blockade has superior antitumor activity.

Study Details:

For the IPATential 150 trial, the investigators enrolled 1101 patients with asymptomatic or only mildly symptomatic mCRPC who had not been treated for advanced disease. The patients included 521 with PTEN loss and 580 who had no evidence of PTEN loss.

Patients were stratified by PTEN loss by IHC, prior taxane therapy, progression by prostate-specific antigen (PSA) only, presence of liver and/or lung metastases, and geographic region. They were randomly assigned to receive Abiraterone 1000 mg daily plus either Ipatasertib 400 mg daily (547 patients) or placebo (554 patients).

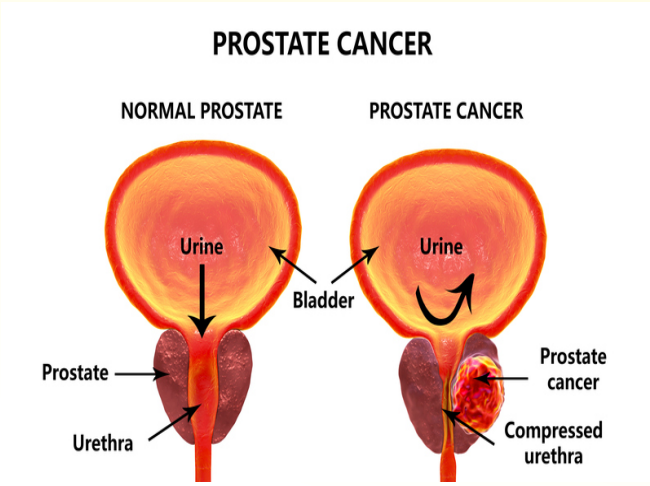
After a median follow-up of 19 months, the median rPFS for patients with PTEN loss by IHC who underwent treatment with the combination was 18.5 months, compared with 16.5 months for patients treated with Abiraterone alone. The 1-year event-free rate was 64.4% with the combination, compared with 63.3% with Abiraterone alone, translating into a stratified hazard ratio (HR) for progression with Ipatasertib plus Abiraterone of 0.77 (P = .0335).

In the ITT population, median rPFS was 19.2 months with Ipatasertib/Abiraterone, vs 16.6

months with Abiraterone/placebo. The respective 1-year event-free rates were 65.3% and 63.0%, translating into an HR of 0.84 for the combination. However, the P value (.0431) for this analysis did not reach the prespecified P value for statistical significance, which was .01, meaning that this coprimary endpoint was not met. As noted, rPFS in the PTEN-loss population, as defined by NGS, was a secondary endpoint. It was 19.1 months with the combination, vs 14.2 months with Abiraterone/placebo, translating into an HR favoring the combination of 0.65 (P = .0206).

Better Objective, PSA Responses

Response rates with the combination were much higher than with Abiraterone alone. In the PTEN loss analysis, objective response rates, determined in accordance with Response Evaluation Criteria in Solid Tumours (RECIST) version 1.1, were 61% for patients who received Ipatasertib plus Abiraterone, vs 39% for those who received Abiraterone alone. The respective rates in the ITT population were 61% and 44%. Biochemical PSA response rates in the PTEN loss by IHC group were 84% vs 72%. In the ITT group, they were 81% vs 76%. Time to PSA progression was also significantly better in the combination arm in both analyses. The HR was 0.69 (P = .0013) in the PTEN-loss population and 0.73 (P < .0001) in the ITT population. There were no significant differences by treatment arm or population in time to initiation of cytotoxic chemotherapy, however. Overall survival data were not mature at the time of data cut-off. In the current analysis, there was no difference in overall survival between treatment arms.



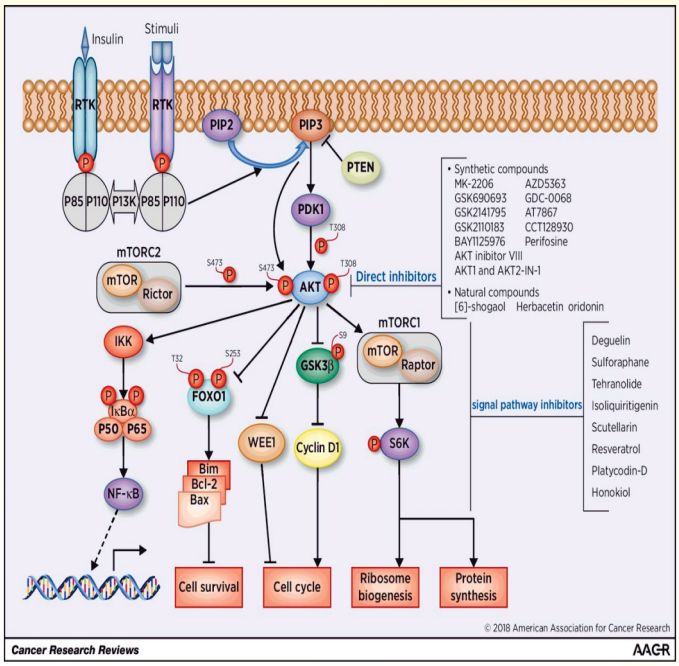
Toxicities Higher With Ipatasertib

Grade 3 or 4 adverse events were reported in 70.1% of patients treated with Ipatasertib/Abiraterone, vs 39% for those treated with Abiraterone and placebo. Twenty-four patients (4.4%) who were treated with the combination died during the study, as did 20 patients (3.7%) who received Abiraterone alone. Adverse events leading to discontinuation of study treatment occurred in 21.1% of patients in the combination arm and 5.1% of patients in the placebo arm. Adverse events leading to dose reductions occurred in 39.9% and 6.2%, respectively. Adverse events with a 2% or greater difference between treatment arms — all of which occurred at higher rates among patients treated with the combination — included rash/maculopapular rash, diarrhoea, hyperglycaemia, elevated liver transaminase levels, and dehydration. Further investigators noted that drug discontinuations may be avoided by use of prophylactic Loperamide for diarrhoea and antihistamine for preventing or ameliorating cutaneous adverse events.

Do Taxanes Affect AKT Inhibition?

It is pointed out that only about 18% of patients in each arm had received prior therapy with taxanes, a lower percentage than typically seen in practice. An interesting observation from the study was prior to taxane-based therapy, or in those exposed to taxanes before, there was no effect on PFS compared to those who were not exposed to taxane-based therapy.This finding raises the possibility that prior taxane therapy can make patients less sensitive to AKT inhibitors, which should be explored further.

Ref: https://www.medscape.com/viewarticle/937965



AKT as a Therapeutic Target for Cancer

NOVEL LIPID THERAPIES: 5 THINGS TO KNOW & CONSIDER FOR EFFECTIVE MANAGEMENT!

The development of novel pharmacotherapies targeting low-density lipoprotein (LDL), lipoprotein a, and triglycerides (TG) to help prevent patients' risk of atherosclerotic cardiovascular disease (ASCVD) has accelerated during the past decade. Some of these therapies have been approved as an adjunct to primary dyslipidaemia therapies. Major societal guidelines, including those from the American College of Cardiology/American Heart Association (ACC/AHA) and the European Society of Cardiology/European Atherosclerosis Society (ESC/EAS), continue to recommend the highest tolerated statin as first-line therapy to lower LDL levels, as well as the addition of Ezetimibe for patients considered to be at very high risk for ASCVD. In addition to these recommendations, the ACC/AHA and ESC/EAS guidelines now support the use of proprotein convertase subtilisin/kexin type 9 (PCSK9) inhibitors to reduce patients' LDL levels and risk for ASCVD.

There are multiple additional therapies to discuss the additional benefits. Clinical outcomes data now support the use of a high-dose, highly purified form of Omega-3 fatty acid, Eicosapentaenoic acid (EPA), for patients with elevated TG levels. Furthermore, several novel therapies with innovative mechanisms to target hepatocytes and minimize off-site adverse effects have shown promising results in phase 3 trials, with clinical outcomes data on the horizon.

Here are five things physicians should consider /to know about novel lipid therapies:

1. PCSK9 inhibitor as an add-on therapy to statin plus Ezetimibe regimens in patients whose LDL levels remain above the targeted goal.

The PCSK9 protein promotes the degradation of the LDL receptor, resulting in diminished clearance of LDL from the bloodstream. The PCSK9 inhibitors Alirocumab and Evolocumab are monoclonal antibodies that target the PCSK9 protein and increase LDL receptor activity, and they have been shown to decrease circulating LDL levels by an average of 60%.

The ODYSSEY OUTCOMES and the FOURIER trials were two large randomized controlled trials of patients with clinical ASCVD who, despite statin therapy, had baseline LDL levels ≥ 70 mg/dL. The ODYSSEY OUTCOMES trial demonstrated a 15% relative reduction (absolute risk reduction [ARR], 1.6%) of cardiovascular (CV) events in patients receiving Alirocumab during a median follow-up of 2.8 years. Similarly, in the FOURIER trial, Evolocumab significantly reduced the risk primary composite outcome by 15% (hazard ratio, 0.85; 95% CI, 0.79-0.92; P < .001; ARR, 1.59%) during a median follow-up of 2.2 years.
Although the ESC/EAS and AHA/ACC support the use of PCSK9 inhibitors, the class of recommendation/strength of recommendation differs between the two guidelines. Although the ESC/EAS guidelines outline a more aggressive strategy regarding the use of PCSK9 inhibitors in patients with ASCVD, the strength of recommendation for use of PCSK9 inhibitors in the AHA/ACC guidelines is based on concerns over the cost-benefit ratio (which continues to be an issue despite a 60% reduction in the cost of these drugs). The current AHA/ACC guidelines recommend considering PCSK9 inhibitors in patients striving to have optimal LDL control (LDL level ≥ 70 mg/dL for very high-risk secondary prevention or LDL level ≥ 100 mg/dL for high-risk primary prevention).

2. Randomized clinical trial data have demonstrated that the investigational agent Inclisiran effectively reduces LDL levels in patients with ASCVD or heterozygous familial hypercholesterolemia (HeFH).

Inclisiran is a small interfering RNA molecule that targets the PCSK9 messenger RNA, thus decreasing the hepatic synthesis of PCSK9. A triantennary N-acetylgalactosamine (GalNAc) modification of the Inclisiran molecule permits rapid hepatic uptake through the asialoglycoprotein receptors, which are expressed exclusively on hepatocytes, such that Inclisiran is no longer detectable in blood plasma after 24-48 hours.

Recently published results from three phase 3 trials (ORION-9, ORION-10, and ORION-11) have demonstrated the effectiveness of Inclisiran in reducing LDL levels.

In the ORION-9 trial, 482 patients with HeFH were randomized to receive 300 mg of inclisiran or placebo on days 1, 90, 270, and 450 of the study. Results from this trial showed a reduction of LDL level of 39.7% in patients who received Inclisiran compared with an increase in LDL level of 8.2% in patients who received the placebo.

The ORION-10 trial enrolled 1561 patients with ASCVD and a mean LDL level of 104 mg/dL, and the ORION-11 trial enrolled 1617 patients (203 of whom were risk-equivalent patients) with a mean LDL level of 105 mg/dL. Patients in both ORION-10 and ORION-11 were randomized to receive four injections of Inclisiran or placebo on days 1, 90, 270, and 450. The difference in change in LDL levels from baseline to day 510 between the Inclisiran and placebo groups was −52.3% (95% CI, −55.7 to −48.8; P < .001; ARR, −54.1 mg/dL) in ORION-10. Similar findings were demonstrated in ORION-11. Adverse event profiles in ORION-10 and ORION-11 were similar between the Inclisiran and placebo groups. Although injection-site reactions were more common in the Inclisiran group, they occurred in < 5% of participants. There werefewer occurrences of

exploratory CV endpoints in the Inclisiran group in both trials, but the total number of events was low.

Results of the pivotal ORION-4 trial, a clinical outcomes study of the effects of Inclisiran among people with cardiovascular disease, are expected to be published in 2025.

3.Prescribing high-dose Icosapent ethyl (IPE) to high-risk individuals who have elevated TG levels despite statin therapy.

IPE is a high-dose, highly purified synthetic derivative of EPA, which was initially approved for patients with severe hypertriglyceridemia; however, studies on IPE have demonstrated other benefits to its use. The REDUCE-IT trial randomized 8179 high-risk patients with elevated TG levels receiving statin therapy to also receive a total of 4 g IPE (2 g twice daily) or placebo for a mean of 4.9 years. This study demonstrated that the relative risk for major adverse CV events was 25% lower (absolute reduction, 4.8%) among patients who received 4 g IPE than patients who received a placebo. The reduction in CV events seen in REDUCE-IT was greater than that predicted by the reduction in TG levels alone, suggesting benefits of IPE beyond that of lowering TG (eg, anti-inflammatory, anti-oxidative, plaque-stabilizing, membrane-stabilizing properties). Based on these findings, the US Food and Drug Administration (FDA) approved IPE as an adjunct therapy to reduce the risk of CV events in adult patients with elevated TG levels. The European Medicines Association (EMA) is expected to complete its review of EPI for this secondary indication by the end of 2020.

The results of REDUCE-IT emphasize the role of TGs in the development of ASCVD and may have considerable practice-changing implications for cholesterol management. Although further trials are underway, the revised 2019 ESC/EAS guidelines have been updated to advise consideration of IPE in high-risk patients who have TG levels between 135 and 499 mg/dL despite statin treatment.

4. Bempedoic acid may prove a viable oral option in patients intolerant to statin therapy or as an adjunct to statin therapy.

Approved by the FDA and EMA in February 2020, Bempedoic acid is another non-statin agent shown to lower LDL. An inhibitor of adenosine triphosphate citrate lyase, Bempedoic acid reduces cholesterol synthesis and up regulates LDL receptors in the liver, promoting cholesterol clearance from the blood.

Two phase 3 studies, CLEAR Harmony and CLEAR Wisdom, evaluated the safety and efficacy of Bempedoic acid as an adjunct to maximally tolerated statin therapy in patients with ASCVD and/or HeFH versus placebo. The CLEAR Harmony trial assessed patients for 1 year, and the CLEAR Wisdom trial assessed participants for 12 weeks. Both studies showed significant reductions in LDL levels in patients receiving add-on Bempedoic acid compared with those given placebo. A notable safety finding in the Clear Harmony trial was an increased risk of gout flare in the treatment arm.

The enzyme required to activate Bempedoic acid is liver specific and not present in muscle tissue, so Bempedoic acid is a potential option for patients intolerant to statin therapy due to muscle-related side effects. A 12-week study, CLEAR Tranquility, assessed the safety and efficacy of Bempedoic acid plus Ezetimibe versus Ezetimibe plus placebo in patients with a history of statin intolerance and elevated LDL levels. Results from the trial showed that Bempedoic acid plus Ezetimibe reduced LDL levels 28% more than placebo plus Ezetimibe. Pending cost considerations, this oral combination therapy may represent an effective alternative for patients intolerant to statin therapy.

The on-going CLEAR Outcomes trial, comprising an estimated 12,600 patients at high CV risk with elevated LDL levels who are intolerant to statin therapy, is assessing the effectiveness of Bempedoic acid as monotherapy versus placebo. This trial is expected to conclude in 2022.

5. Gene-silencing therapies that target lipoprotein A and TG levels are showing promise as lipid-lowering therapies.

Several novel antisense oligonucleotide agents capable of silencing key regulatory proteins in the lipoprotein a and apolipoprotein CIII (apo CIII) pathways are currently under investigation, most notably TQJ230 (AKCEA-APO(a)-LRx) and ISIS 678354 (AKCEA-APOCIII-LRx). In a similar manner as Inclisiran, these agents are hepatocyte-specific due to the presence of a GalNAc modification.

A randomized, placebo-controlled dose-ranging trial of 286 participants with ASCVD and elevated lipoprotein a levels demonstrated an 80% reduction in lipoprotein a among patients who received the highest dosing schedule of TQJ230 (AKCEA-APO(a)-LRx) (20 mg weekly) compared with a 6% reduction among patients who received placebo. There were no significant adverse effects, the most common of which was injection-site reaction. Moreover, there were no significant differences in platelet count or liver and renal function between the TQJ230 (AKCEA-APO(a)-LRx) and placebo groups. Similar dramatic reductions were seen in apo CIII and TG levels in another randomized controlled trial that evaluated ISIS 678354 (AKCEA-APOCIII-LRx). These promising early data have led to much anticipation of the findings from ongoing phase 3 clinical trials for both therapies.

Ref: https://www.medscape.com/viewarticle/932573

DRUG PROFILE

NIFURTIMOX

Class:

Nirurtimox is a nitrofuran antiprotozoal agent.

Indication:

Nifurtimox is usedin pediatric patients (birth to lessthan 18 years of age and weighing at least 2.5 kg) for the treatment of Chagasdisease (American Trypanosomiasis), caused by Trypanosoma cruzi.

Mechanism of Action:

Mechanism of action of Nifurtimox is not fully understood. Studies suggest that nifurtimox is metabolized/activated,by Type I (oxygen insensitive) and Type II (oxygen sensitive) nitoreductases (NTR) leading to production of toxicintermediate metabolites and/or reactive oxygen species that induce DNA damage and cell death of both intracellular andextracellular forms of Trypanosoma cruzi.

Dosage form and Administration:

Nifurtimox is available in the form of tablets with strength of 30 mg and 120 mg tablets. Tablets can be split into one-half (15mg and 60 mg respectively) at the scored lines by hand. Both 30 mg and 120 mg Nifurtimox tablets are yellow, round, biconvex tablets, functionally scored on one side for the division of tablet into equal doses and marked with '30' and '120' on the other side respectively.
Nifurtimox has to be taken along with food orally and tablets can be made into a slurry as an alternative method of administration for patientswho cannot swallow whole tablet. Alcohol should not be consumed by patients taking Nifurtimox.
Nifurtimox is usually administered three times a day along with food. Dosing of Nifurtimox is based on body weight of the individual. Recommended duration of treatment is 60 days.

Age	Body weight group	Total daily dose of Nifurtimox (mg/kg)
Birth to less than 18 years	40 kg or greater	8 to 10
	Less than 40 kg	10 to 20

Dosing in Hepatic & Renal Impairment:

The effect of renal impairment on the pharmacokinetics of nifurtimox is unknown,studies suggests that blood concentrations of nifurtimox were increased in patients with End Stage Renal Disease (ESRD) requiring hemodialysis. Nifurtimox should be administered under close medical supervision.
The effect of hepatic impairment on the pharmacokinetics of nifurtimox is unknown. Nifurtimox should be administered under close medical supervision.

Pharmacokinetics:

The mean (%CV) Nifurtimox AUC estimates ranged between 1676-2670 µg·h/L (19–32%) and C_{max} estimates rangedbetween 425-568 µg/L (26–50%) following administration of single dose 120 mg nifurtimox with food in adult Chagaspatients.T_{max} of Nifurtimox under fed conditions was 4 hours (range: 2 to 8 hours).

Effect of Food:Following administration of a single oral dose of 120 mg Nifurtimox in adult Chagas patients, nifurtimox C_{max} increased68%, AUC increased 71%, and T_{max} increased by 1 hour with a high-fat meal (800–1000 calorie, approximately 60% fat)compared to fasted conditions.

Nifurtimox passes the blood brain barrier as well as the placental barrier. The plasma proteins binding of nifurtimox is42%.The mean (%CV) estimates for elimination half-life of nifurtimox ranged between 2.4–3.6 hours (12–37%).

Metabolism of Nifurtimox is primarily mediated via nitroreductases. Exploratory investigations identified two major pharmacologically inactive metabolites (M-4, M-6) and several other minor metabolites in pooled human plasma. M-4 is a rearranged cysteine conjugate of nifurtimox with a half-life of approximately 28 hours, and M-6 is postulated to be formed by hydrolytic cleavage of the hydrazone moiety with a half-life of approximately 10 hours. Excretion Following administration of Nifurtimox under fed and fasted conditions, approximately 44% and 27% of the dose was recovered in urine mainly as metabolites, respectively.

Adverse Reactions:

>10%: Vomiting (14.6%), Abdominal pain (13.2%), Headache (12.8%), Decreased appetite (10.5%)

1-10%: Nausea (8.2%). Pyrexia (7.3%), Rash (5.5%), Diarrhea (4.6%), Decreased weight (2.7%), Dizziness (2.7%), Anaemia (2.7%), Urticaria (2.3%), Eosinophilia (2.3%),

<1%: Vertigo, Arthralgia, Myalgia, Paraesthesia, Tremor, Irritability, Anxiety, Pruritus, Fatigue, Somnolence, Seizure, Syncope, Neutropenia, Leukopenia

Contraindications:

- Nifurtimox may increase the incidence and severity of undesirable effects similar to othernitrofurans and nitro heterocyclic compounds when concomitantly used with alcohol. It is contraindicated in patients who consume alcohol duringtreatment.
- Nifurtimox is contraindicated in patients with a history of allergy to nifurtimox or any excipients within the tablet.

Precautions:

- Genotoxicity: A study evaluating the cytogenetic effect of nifurtimox in paediatric patients ranging from 7 months to 14 years of age with Chagas disease demonstrated a 13-fold increase in chromosomal aberrations.
- Carcinogenicity has been observed in mice and rats treated chronically with nitrofuran agents which are structurallysimilar to nifurtimox. No data available regarding carcinogenicity of Nifurtimox.
- Embryofoetal Toxicity: Nifurtimox may cause foetal harm. Nifurtimox administered orally to pregnant mice, rats, and rabbits during organogenesis was associated with reduced foetal body weights in mice, reduced maternal and foetal body weights in rats, and abortions, reduced maternal weight gain, and reduced numbers of live foetuses in rabbits. Pregnancy testing is recommended for females of reproductive potential. Advise females of reproductive potential of the potential risk to a foetus and to use effective contraception.
- Worsening Neurological and Psychiatric Conditions: Patients with a history of brain injury, seizures, psychiatric disease, serious behavioural alterations may experience worsening of their conditions when receiving Nifurtimox. Drug has to be administered under close medical supervision in these patients or if neurological disturbances or psychiatric drug reactions occur.

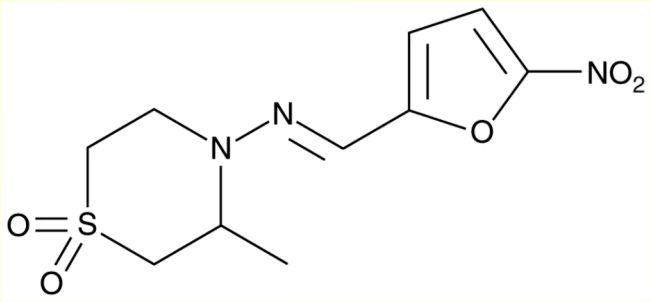
Drug Interactions:

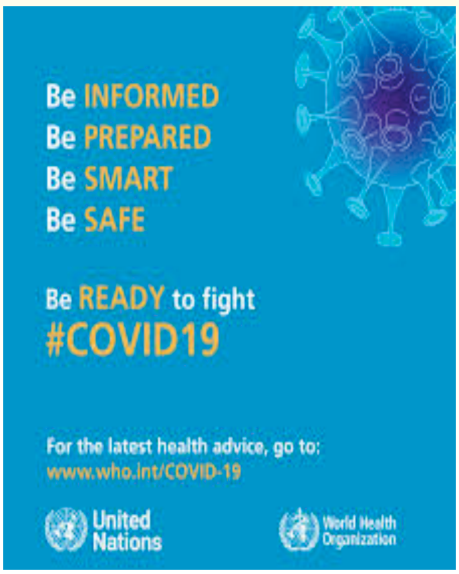
- Concomitant use of Nifutrimox with alcohol may increase the incidence and severity of undesirable effects similar to other nitrofurans and nitroheterocyclic compounds.

Reference

https://www.accessdata.fda.gov/drugsatfda_docs/label/2020/213464s000lbl.pdf

· https://www.lampit.com/hcp





EVENT CORNER

- Dr. M Deepalakshmi, Lecturer, Department of Pharmacy Practice attended the national level faculty development program on 'Effective Use of ICT Tools in Teaching-Learning' Online FDP (MOOC) course jointly organized by P. E. Society's Modern College of Pharmacy, Pune, and Association of Pharmaceutical Teachers of India, on 8th June to 7th July 2020.
- Dr. Khayati Moudgil, Resident, Department of Pharmacy Practice attended the international level online workshop on 'Successful Research Writing & Publication' organized by International Association for Advancement of Science (IAAS) in collaboration with The International Institute of Knowledge Management on 6th July 2020.
- Dr. G K Sadagoban, Lecturer, Department of Pharmacy Practice acted as a resource person and delivered a talk on 'Present Day Drift in Pharmacy Practice' in a national level online conference on 'Present Day Drift inPharmacy Practice' organized by Department of PharmD, CMR College of Pharmacy, Hyderabad, Telangana on 6th & 7th July 2020.
- Dr. Sadagoban, Dr. B Swathi Swaroopa, Dr. MDeepalakshmi, Dr. Keerthana C, Dr Aneena Suresh, Department of Pharmacy Practice attended the national level conference on 'Present Day Drift inPharmacy Practice' organized by Department of PharmD, CMR College of Pharmacy, Hyderabad, Telangana on 6th & 7th July 2020.
- Dr. S Ponnusankar, Professor & Head, Department of Pharmacy Practice attended the national level online conference on 'Drug Repurposing using Reaxys' organized by JSS Academy of Higher Education & Research, Mysuru & Elsevier on 07th July 2020.
- Dr. S Ponnusankar, Dr. M Deepalakshmi, Dr. G K Sadagoban, Dr. Swathi Swaroopa B, Department of Pharmacy Practice attended the national level online conference on 'Cochrane Systematic Reviews: The Ultimate Evidence to Inform Clinical Decision Making' organized by VV Institute of Pharm. Sciences, Gudlavalleru. Andhra Pradesh on 11th July 2020.
- Dr. M Deepalakshmi, Lecturer, Department of Pharmacy Practice presented a paper entitled 'Implementation of High Alert Medication Program (HIM) for the improvements inmedication safety' during the national level e-poster competition organized by CL Baid College of Pharmacy associated with IPA on11th July 2020.
- Dr. Swathi Swaroopa B, Mr. Vishwas H N, Department of Pharmacy Practice attended the online webinar on 'Innovative Strategies for Pharmacist in COVID-19' organized by Karnataka Regd. Pharmacist association and R R College of Pharmacy, Bengaluru on 13th July 2020.
- Staff of Department of Pharmacy Practice attended the national level online event, 'Pharmacy Profession in India: Present status and future challenges'organized by Dept. of Pharm. Sciences, School of Applied Sciences and Technology, Univ. of Kashmir on 14th July 2020.
- Dr. G K Sadagoban, Lecturer, Department of Pharmacy Practice attended the online international event, 'FDA Practitioners' Guide for Improving Oral Anticoagulant Use' organized by Amedco LLC and FDA, USA on 14th July 2020.
- Dr.S Ponnusankar, Professor & Head, Department of Pharmacy Practice attended the national level online conference, 'Microbiome: Listen to your gut' organized by, JSS Academy of Higher Education & Research, Mysuru on 15th July 2020.
- Dr. G K Sadagoban, Dr.Swathi Swaroopa B, Lecturer, Department of Pharmacy Practice attended the webinar on 'Insights on Diabetes and COVID-19' organized by British Medical Journal,Prashant Mishra Managing Director BMJ India & South Asia, Dr. Anoop Misra (Key speaker of the webinar) Chairman, Fortis-C-DOC Centre of Excellence for Diabetes, Metabolic Diseases and Endocrinology on

16th July 2020.

- Dr. Roopa B S, Lecturer, Department of Pharmacy Practice attended the international online event 'ISPOR Educational Webinar: Patient Engagement in Research: An ISPOR Definition' organized by InternationalProfessional Society for Health Economics and outcome research on 17th July 2020.
- Dr. KP Arun, Dr. MDeepalakshmi, Department of Pharmacy Practice attended the online conference on 'Post-Pandemic Scope of Pharmacy Education - Strategies for Post-Pandemic Pharmacy Education (PPE) – Moving Early and Responding Strongly' organized by Indian Pharmaceutical Association and IPA, Education Division, JSS Academy of Higher Education and Research, Chebrolu Hanumaiah Institute of Pharmaceutical Sciences, Guntur and Vikas Institute of Pharmaceutical Sciences, Rajahmundry, Andhra Pradesh on18th July 2020.
- Mr. Vishwas H N, Lecturer, Department of Pharmacy Practice attended the national level online webinar on 'Clinical Pharmacy services and role of Pharm D students' organized by Mybo Group, Visakhapatnam, Andhra Pradesh 19th July 2020.
- Dr. Roopa B S, Lecturer, Department of Pharmacy Practice attended the international online conference on 'Blood clots and COVID-19' organized by Department of Pharmacology, JSS College of Pharmacy, Ooty on 20th July 2020.
- Dr. S Ponnusankar,Dr. Khayati Moudgil, Department of Pharmacy Practice attended the national level online conference 'Regulatory affairs as career path' organized by JSSCollege of Pharmacy, Ooty on 21st July 2020.
- Dr. S Ponnusankar, Dr. KP Arun, Dr. M Deepalakshmi, Dr. Keerthana C,Dr. Khayati Moudgil, Department of Pharmacy Practice attended the national level online conferenceon'Etiquette of research supervision for generational differences' organized by JSSCollege of Pharmacy, Ooty on 25th July 2020.
- Dr. Swathi Swaroopa B, Lecturer, Department of Pharmacy Practice attended online webinar on 'How to develop and communicate a research question' organized by British Medical Journal, Speaker-Dr.Anita Jain on 30th July 2020.
- Dr. M Deepalakshmi, Lecturer, Department of Pharmacy Practice attended the national level event on 'Curriculum Enrichment' organized by SRIHER University on 31st July 2020.
- Mr. Vishwas H N, Lecturer, Department of Pharmacy Practice attended the national level'One-week Virtual International Faculty Development Program on "Advances inPharmaceutical Sciences: Research andPractice' organized by IQAC Cell in association with the Association of PharmaceuticalTeachers of India (APTI), AP State Branch, KVSR Siddhartha College of Pharmaceutical Science, Vijayawada, Andhra Pradesh on 27th July 2020 to 01st August 2020.
- Staff, Department of Pharmacy Practice attended the national level webinar on 'Indian Congress of Pharmacy Practice 2020 and 4th IACP Convention- Webinar' organized by Indian Association of Colleges of Pharmacy, Chennai 1st and 2nd August 2020.
- Dr. MDeepalakshmi, Dr. Swathi Swaroopa B, Dr Keerthana C,Dr. Aneena Suresh,Department of Pharmacy Practice attended the 'National Quiz on PharmacyPractice' organized by Department of Pharmacy, ChaitanyaCollege of Pharmacy Education andResearch on 1st August 2020.
- Dr. S Ponnusankar, Dr. Roopa B S, Dr. G K Sadagoban,Dr. Swathi Swaroopa B, Department of Pharmacy Practice attended the national level online webinar on 'Health Sciences Professional Courses: Differentiating factors in higher education during pandemic crisis' organized by CCLPE, JSSAcademy of Higher Education &Research, Mysuru on7th and 8th August 2020.
- Dr. MDeepalakshmi,Dr. Keerthana C, Dr. Khayati Moudgil,Dr. Aneena Suresh,Department of Pharmacy Practice attended the national level webinar on "COVID -19 &Neurological Complications" organized by Department of Pharmacology, JSSCollege of Pharmacy, Ooty on 8th August 2020.

- Dr. Keerthana C, Department of Pharmacy Practice attended in the national level webinar entitled 'Drug Development and CMC to Expedite Phase-1 Clinical Trial'organized by KLE College of Pharmacy, Hubballi. On 8th August2020.
- Dr. G K Sadagoban, Dr. Swathi Swaroopa B, Department of Pharmacy Practice attended the national level online faculty development on 'Sustainable e-Learning Trends in Pharmacy-Education and TrainingNational Level Online Faculty Development' organized by RIPSAT, Institute of Pharmacy and Technology and DIT University, on 8th and 9th August 2020.
- Dr. K P Arun, Dr. M Deepalakshmi, Department of Pharmacy Practice attended the national level webinar on 'National Education Policy -2020 for Higher Education'organized by SRIHER University on 10th August 2020.
- Staff of Department of Pharmacy Practice attended the online webinar entitled 'Lexicomp – A Clinical Drug Reference tool for Pharm-D' organized by Infokart India in association with Lexicomp on 17th August 2020.
- Dr. Roopa B S, MrVishwas H N, Department of Pharmacy Practice attended the national level online webinar on 'Systematic Review and Meta-Analysis- Introduction to critical analysis and procedure' organized byDental Education unit (Unit of CCLPE) and JSS Dental College and Hospital, Mysuru on 19th and 20th August 2020.
- Dr. Aneena Suresh, Lecturer, Department of Pharmacy Practice attended the national level online webinar on 'Proteins & Peptides Delivery' organized by PSG College of Pharmacy, Coimbatore on 17th to 21st August 2020.
- Dr. Khayati Moudgil, Clinical Resident, Department of Pharmacy Practice got recognized as' Women in Science' issued byAntiviral research Society, India, Reg-no: 144/2016 (TN Soc. Reg. Act) on 22nd August 2020.
- Dr. K P Arun, Asst. Professor, Department of Pharmacy Practice acted as a resource person and delivered a talk entitled 'Pharmacokinetics and its Applications' during the'6th National Pharma Webinar series-2020' organized by Department of Pharmaceutics, Pannai College of Pharmacy, Dindigul on 23rd August 2020.
- Dr. MDeepalakshmi, Dr. Roopa B S,Dr. Khayati Moudgil, Department of Pharmacy Practice attended the national level onlineworkshop on Systematic Review and Meta-analysis organized by NIPER Guwahati on 28th and 29th August 2020.
- Dr. Keerthana C, Clinical Resident, Department of Pharmacy Practice participated in the national webinar on 'Artificial Intelligence and its applications in Pharmaceutical Science' organized by 360DigiTMG, Roland Institute of Pharmaceutical Sciences, Berhampur, Odisha on 2nd September 2020.
- Dr. MDeepalakshmi, Lecturer, Department of Pharmacy Practice, participated in national level webinar on 'Clinical Pharmacist Care Service in Health Care' organized by Karpagam College of Pharmacy in association with IPA, Coimbatore on 11th September, 2020.
- Mr. HNVishwas, Lecturer, Department of Pharmacy Practice participated in national level webinar 'International PatientSafety Goals (IPSG-6)' organized by Medicuality Healthcare Services in association With Karnataka PharmD Association on 13thSeptember 2020.
- Dr. MDeepalakshmi, Lecturer, Department of Pharmacy Practice, participated in national level webinar on 'UGC HRDC UNOM Webinar on Leadership' organized by
  UGC Human Resource Development Centre University of Madras on 14thand 15th September2020.
  Mr. H.N.Vishwas, Lecturer, Department of Pharmacy Practice participated in online webinar themed 'The World Pharmacist Day Celebration' organized by MNR College of Pharmacy, Hyderabad, Telangana on 25th September 2020.
- Dr. KPArun, Dr. Keerthana C, Department of Pharmacy Practice participated in 'Two-week Online Faculty Development Program on Enhancing Psychological Skills for teaching and practice'organized by Department of Applied PsychologyIn association with Teaching Learning Centre Ramanujan College, University of Delhi15th to 29th September 2020.
- Dr. G K Sadagoban, Lecturer, Department of Pharmacy Practice acted as a resource person and delivered a talk entitled 'Pharmacist the unsung hero of health care' during the National forum of pharmacy students (NFPS) virtual meeton 25th September2020.
- Dr. K P Arun, Dr. Roopa BS acted as 'PPT presentation evaluator' atWorld Pharmacist day celebrations organized by IPA Coimbatore Local Branch on 25th September2020.

PUBLICATIONS FROM THE DEPARTMENT OF PHARMACY PRACTICE (July - September 2020)

- Som S, Antony J, Dhanabal SP, **Ponnusankar S.** A preliminary investigation of anticholinesterase and antioxidant properties of various extracts of Vernonia anthelmintica in relation to the treatment of Alzheimer's disease. 2020. International Journal of Research in Pharmaceutical Sciences, 11(3), 4511-4517.
- **Deepalakshmi M,** Diya C, Samraj PA, Venkatesh J, Kamalrathinam R,**Arun K P**. The role of the clinical pharmacists to improve the clinical outcomes of a kidney disease patient - A case Report. 2020. International Journal of Research in Pharmaceutical Sciences. 11(3): 3942-3945.
- Anusha J, Rai SK,**Moudgil K.** A hypersalivation case with fenvalerate. 2020. Journal of critical reviews; 7(7): 598-599.
- Jose A, Elias A, Adackapara LM, **Moudgil K.** Quinalphos poisoning: a survivor's case. 2020. Journal of Critical Reviews. 7(7):630-631.
- Aishwarya MB, Anusha J, **Moudgil K**. Omadacycline extravasation: a general overview. 2020. International Journal of Pharmaceutical Research. 12(3), 1108-1111.
- Hyder M, Raja D, Mohan J, **Ponnusankar S.** Assessing the knowledge, attitude and practice (KAP) among the newly diagnosed prediabetes screened in selected districts of South India. 2020. International Journal of Research in Pharmaceutical Sciences; 11(3): 4836-4846.
- Rai SK, Kumar K, Deo S, **Moudgil K.** Brexanolone: An informative study. 2020. International Journal of Psychosocial Rehabilitation. 24(08):6658-6662.
- **Deepalakshmi M,** Sai G, John PS, Ninan S, ArunKP, **Ponnusankar S.** Implementation and outcome evaluation of Health screening services in selected community pharmacies – Prospective interventional study. 2020. International Journal of Pharmaceutical Research.12(2):1360-1369.
- Swathi J, Vinitha E, Sudharsana KG, Vijisha R., Baby B, **Keerthana C.** Prescription auditing in Pediatric in-patients at Secondary Care Hospital: A Cross Sectional Survey. 2020. Research Journal of Pharmacy and Technology. 13(8):3797 – 3800.
- Rajpurohit N, Kumar K, **Moudgil K.** Pica and eating disorder: An overview. 2020. Pharmacophore.11(4):11-14.
- **Vishwas HN,** Prithika SI, Betsy SB, PrathipaaRP. Smart phone addiction and its implications: a rising epidemic. 2020. Journal of Critical Reviews. 7(18): 8139-8147.

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