



The NGSMIPS Herald

The Official news letter of the Nitte Gulabi Shetty Memorial
Institute of Pharmaceutical Sciences, Mangalore



Volume - 6

Issue - 3

July-September 2015



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VISION

To build a humane society through excellence in education and health care.

MISSION

To develop Nitte University as a centre of excellence, imparting quality education, generating competent, skilled manpower to face the scientific and social challenges with a high degree of credibility, integrity, ethical standards and social concern.

'For Private Circulation Only'



From the Editor's desk

In recent years, e-commerce has taken the world by storm, completely changing the way people shop these days, from groceries to jewellery and electronic goods. It was therefore inevitable that online sale of drugs would try and steal a share of the very lucrative proverbial (e-commerce) pie. Although the sale of drugs online is in itself not new, if one considers vitamins, nutrients, nutraceuticals as 'drugs' which were sold earlier by many e-retailers. However these products always tended to be of dubious quality. Soon several online pharmacies mushroomed all over the country selling over the counter medicines, notable among them are healthkartplus.com, merapharmacy.com, dialmedico.com and netmeds.com. Such sales are not illegal albeit they are from registered sources and is the norm in developed countries which already have guidelines for the online sale of drugs. Hence this was largely ignored in India by the regulatory authorities and the Chemists and Druggists. However, alarm bells started ringing when many of the online pharmacies ventured into selling prescription drugs where the modus operandi was that the customer would be required to upload a scanned copy of the doctor's prescription on their web sites before the transaction is complete. Therefore, there is a real danger that prescriptions can be randomly reused and that scheduled drugs can be re-ordered and misused by the consumer. Moreover the interest of small retailers and supply chains would be adversely impacted by these e-pharmacies which are offering huge discounts to the consumers.

There are no provisions in the Drugs and Cosmetics Act 1940 with respect to the e-commerce of drugs and in light of the recent complaints filed against online pharmacies, the Drugs Controller General of India (DCGI), Dr. G.N. Singh pointed out that "the role, responsibilities, and liabilities of e-commerce marketplace and the product sellers need to be clearly defined so that the safety and health of the consumer is protected" and therefore it is essential to create guidelines for e-pharmacy. The DCGI has appointed the Industry body FICCI as the nodal agency to consolidate the guidelines in consultation with representative bodies such as AIOCD, IMA, Organisation of Pharmaceutical Producers of India (OPPI) and others.

Marina Koland
Executive Editor

World Pharmacist's day at NGSMIPS



Vanamahotsava



CAMPUS BUZZ

Orientation Program for B.Pharm and Pharm D freshers

An orientation program jointly hosted by the NGSM institute of Pharmaceutical Sciences and the Nitte Usha institute of Nursing sciences for new admissions to B.Pharm and Pharm.D courses for the year 2015-16 was held at the KSHEMA Auditorium on 3rd August 2015. The event was formally inaugurated by Shri. N. Vinaya Hegde, Chancellor of Nitte University. Other guests present were

Dr. Shantharam Shetty, Pro Chancellor, Dr. M.S. Moodithaya, Registrar, Dr. Alka Kulkarni, Controller of Examinations, Professor M. Rajshekar,



Shri. N.Vinaya Hegde speaks at the Orientation Program

Director of Curriculum Development and Dr. Indrani Karunasagar, Director (R&D). In his presidential address, Shri. N. Vinaya Hegde assured the parents that their wards would be provided with excellent research oriented academic ambience and a learning experience that is safe, secure and rewarding. He also mentioned that with the commissioning of NUCSER - 'Nitte University Centre for Science Education and Research' – a research initiative of the university adjacent to the pharmacy college the pharmacy students will have opportunity to seek research guidance by way of regular interaction with the research staff and thus have an edge over their counterparts in other colleges.

Campus Recruitment at NGSMIPS

Campus interviews for placement as Pharmacist and Assistant Pharmacists were conducted by HLL Lifecare Ltd (A Government of India Enterprise) India's leading manufacturer and marketer of Contraceptives, Health Care and Pharma Products at NGSM Institute of Pharmaceutical Sciences on 12th July 2015. Applicants from pharmacy colleges of Mangalore, Udupi and Coastal Karnataka appeared at the interviews hopeful of being recruited in one of the 250 vacant positions. About half of the interviewees were granted offer letters.



Campus interviews by HLL Lifecare

Vanamahotsava

The NGSM Institute of Pharmaceutical Sciences has been annually organizing 'Vanamahotsava' in doing its

bit towards a greener planet by planting trees around the college premises. This year the NSS unit of the institution coordinated the event on 27th July, 2015. Dr. Murali Mohan Choontharu, Professor, Dept. of Oral and Maxillo-Facial Surgery, A.B. Shetty Memorial Institute of Dental Sciences and NSS Coordinator of Nitte University was invited to be the Chief Guest. In his address, Dr. Murali Mohan spoke about the significance of 'Vanamahotsava' and was later invited by Dr. C. S. Shastri, Principal to plant saplings. along with Mr. Santanu Saha, NSS Programme officer, other NSS Unit members and Volunteers.

Student Council Inauguration and Freshers Day Celebrations

The Student Council 2015-2016 was formally inaugurated at a program organized by the institution on 12th September, 2015. Fresher's day celebrations were also held on the same day. Mr. Manoj Kumar, Head, Global Injectable Scientific Affairs, Mylan Labs Ltd, Bangalore

and an alumnus of NGSMIPS was invited to be the Chief Guest. In his speech, Mr. Manoj Kumar reminisced about his student days and gratefully acknowledged his teachers. He



Mr. Manoj Kumar lights the inaugural lamp

advised the students about the importance of sound fundamental knowledge and along with hard work are essential in developing a successful career. In his presidential address, Dr. C. S. Shastri, Principal informed the students about the wealth of career opportunities available today for the Pharmacy graduate in areas such as CROs, CRM, Clinical Trials, Pre-Clinical Trials, R&D, F&D, Regulatory Affairs, QC, QA etc. Mr. Jestin Joseph, the outgoing student council president and his team mates handed over charge to the newly appointed student council president Mr. Balasubramanya and his new team.

Later, after an entertainment program by the students, competitions were conducted for the freshers of B.Pharm and Pharm.D. in which Mr. Ujwal and Ms. Soundarya were adjudged Mr. Fresher and Ms. Fresher 2015 respectively.

Onam Celebrations at NGSMIPS

Onam was celebrated on campus on 3rd September 2015 with the students taking great efforts to make the occasion memorable. There were series of competitions with prizes awarded for the best flower carpet or 'Pookalam', for traditional costumes and beauty contests and also comprised of a few sport events. The occasion

was also graced by the presence of several officials from the Nitte University who visited the institution to convey their wishes and included Dr. S. Ramanand Shetty, Vice Chancellor who was the chief guest. Dr. Satheesh Kumar Bhandary, Dean KSHEMA, Dr. Jayaprakash Shetty, Registrar KSHEMA, Dr. U.S. Krishna Nayak, Dean ABSMIDS, Dr. Indrani Karunasagar, Director - NUCSER, Dr. Alka Kulkarni, Controller of Examinations and Dr. Rajshekar, Director Curriculum Development. The guests were greeted by the students with a traditional dance, the 'Onam Nrityam'. The festivities culminated with a sumptuous lunch, 'Onam Sadya' served in the traditional Kerala style.

World Pharmacist's day celebrated

NGSMIPS celebrated World Pharmacist Day on September 25, 2015 by organizing a rally with the purpose of creating public awareness of the contribution of the Pharmacist to the health of the nation. The rally was flagged off by Smt. Geetha Kumari Das, Assistant Drugs Controller, Madikeri. The theme for this year's World Pharmacist Day was, "Pharmacist: Your partner in health". During the formal function that followed the rally, Smt. Geetha Kumari Das spoke about her experiences in the drug administration services and assured the students of the large number of opportunities available to the pharmacy graduate today and that the World Pharmacists Day was an opportunity for pharmacists to rededicate their services to the public. In his presidential address, Dr. S. Ramanand Shetty, the Hon'ble Vice Chancellor, Nitte University, applauded the efforts of the Pharmacy Council of India in creating an environment conducive for the training of Pharmacists in health care so that they are on par with pharmacists in the rest of the world. Mr. Pramod Hegde, Managing Director, Medorganics India Pvt. Ltd, and Mr. Sadanand V. Shetty, Proprietor, Ganesh Medicals, Mangalore were also invited as the guests of honour.

Seminar on "Career opportunities in Pharmacy Practice"

A seminar and interactive session for the Post Graduates and Pharm.D students was organized by the Department of Pharmacy Practice on "Career opportunities in Pharmacy Practice" on 15th July 2015 at the NIBF auditorium, Paneer, Derlakatte, Mangalore. The resource persons for the sessions were Dr. M. Chandrasekar, Professor, University of Findlay, USA and Dr. Anantha Nagappa Naik, Professor, Department of Pharmacy Management, MCOPS, Manipal University.

In his lecture, Dr. M. Chandrasekar spoke about the scope of pharmacy practice and its opportunities in India. Dr. Anantha Nagappa Naik spoke on the pharmacoeconomic perspectives in the field of pharmacy practice. The

lectures were followed by interactive sessions in which students participated.

Guest Lectures:

The Department of Pharmaceutics, NGSMIPS organized guest lectures for the students of final year B. Pharm on 'Career Opportunities in Quality Assurance and Regulatory Affairs' and 'Mind Mapping - A tool for effective learning' on 26th August 2015. The resource person invited to speak was



Dr. T.M. Pramod Kumar, Professor and Head, Dept. of Pharmaceutics, JSS College of Pharmacy, Mysore. In his lecture, Dr. Pramod Kumar emphasized on the importance of pharmacy students being familiar with areas such as CGMP, ANDA, Data Integrity issues so as to improve their job opportunities in the pharmaceutical industry. He also spoke on Mind Mapping techniques, wherein students were given mini challenges and exercises to bring in active participation.



The Department of Pharmacology had organized Guest lectures by Dr. Prakash V. Diwan, Ph.D, FRSC (London), FIPS, FIPA and founder director of NIPER, Hyderabad on 22nd August 2015 at the Nitte Institute of Communications Auditorium.

Addressing students and staff, Dr. Diwan, spoke about the importance of soft skills and the benefits of a positive mind in building a career. In his second lecture, Dr. Diwan discussed the history, importance of 'Good Laboratory Practices', scope and guidelines of Standard Operating Procedures and their compliance.

Ph.D awards

Mr Amit B. Patil, Asst. Professor, Department of Pharmaceutics, NGSM Institute of Pharmaceutical Sciences, Mangalore, Karnataka, has been awarded Doctor of Philosophy (Ph. D) in Pharmaceutical Sciences for his thesis entitled "Embodiment of fast dissolving orodispersible films of selective antihypertensive drugs and their characterization" by the Nitte University, Mangalore. He has worked under the guidance of Dr. R. Narayana Charyulu, Vice-Principal & Head, Department of Pharmaceutics, NGSMIPS, Mangalore.



Mr. Atanu Bhattacharjee, Asst. Professor, Department of Pharmacognosy, NGSM Institute of Pharmaceutical Sciences, Mangalore, Karnataka, has been awarded Doctor of Philosophy (Ph. D) in Pharmaceutical Sciences by the Nitte University, Mangalore for his thesis entitled "Phytochemical and neuro pharmacological evaluation of some traditional Indian medicinal plants from Western Ghat region of South Karnataka". He has worked under the guidance of Dr. C.S. Shastry, Principal & Head, Department of Pharmacology, NGSMIPS, Mangalore.



Mrs. Divya Jyothy, Asst. Professor, Department of Pharmacognosy, NGSM Institute of Pharmaceutical Sciences, Mangalore, Karnataka, has been awarded Doctor of Philosophy (Ph. D) in Pharmaceutical Sciences by the Nitte University, Mangalore for her thesis entitled "Investigation of formulations containing extracts of seeds of trigonella foenum-graecum for oral anti-diabetic therapy and topical anti-inflammatory activity". She has worked under the guidance of Dr. Marina Koland, Professor, Department of Pharmaceutics, NGSMIPS, Mangalore.



Ms. Jainey P. James, Asst. Professor, Department of Pharmaceutical Chemistry, NGSM Institute of

Pharmaceutical Sciences, Mangalore, Karnataka, has been awarded Doctor of Philosophy (Ph. D) in Pharmaceutical Sciences for her thesis entitled "Synthesis and screening of some biologically active five, six, seven membered novel heterocyclic compounds" by the Nitte University, Mangalore. She has worked under the guidance of Dr. K.Ishwar Bhat, Professor, Department of Pharmaceutical Chemistry, NGSMIPS, Mangalore.



NGSMIPS girls bag the championship trophy of the Nitte University Women's Throw Ball Tournament 2015-2016

The womens throw ball team of NGSMIPS won the Nitte University Inter Collegiate Womens Throw Ball tournament 2015-16 against the team from K.S. Hegde Medical Academy. The tournament was hosted by the NGSM Institute of Pharmaceutical Sciences on September 22nd and 23rd, 2015 at Paneer campus. Other participating teams included those from A.B.Shetty Memorial Institute of Dental Sciences (ABSMIDS), Nitte Usha Institute of Nursing Sciences (NUIINS), Nitte Institute of Physiotherapy (NIPT), Nitte Institute of Speech and Hearing (NISH), Nitte Institute of Communication (NICO) and Nitte University Centre for Science Education & Research (NUCSER).

DEPARTMENT ACTIVITIES

DEPARTMENT OF PHARMACEUTICAL CHEMISTRY RESEARCH PUBLICATIONS

DR. RONALD FERNANDES, Professor

Assessment of Membrane Stabilisation, Antioxidant and Thrombolytic Potential of Lutein-an-in-vitro Study. International Journal of Pharmaceutical Sciences and Research Oct. 2015; 6(10): 4478-4483

DEPARTMENT OF PHARMACEUTICS RESEARCH PUBLICATIONS

DR. R. NARAYANA CHARYULU, Professor

1. Formulation and Evaluation of Gastro Retentive Effervescent Floating Tablets of Famotidine: Effect of Formulation Variables and in vitro evaluation. Research Reviews: A Journal of Drug Formulations, Development and Production 2015; 2(3): 13-29
2. Microsponges: A Novel Approach for Transdermal Delivery of Tolnaftate. Trends in Drug Delivery 2015; 2(2): 38-46
3. Development and Characterisation of Mucoadhesive Microspheres Containing a Model Antidiabetic Drug.

Research Reviews: A Journal of Drug Design and Discovery 2015; 2(2): 12-19

MR. JOBIN JOSE, Asst. Professor

Performance Evaluation of Pamam Dendrimer with an antifungal agent. Der Pharmacia Lettre 2015; 7(8): 213-217

DEPARTMENT OF PHARMACOLOGY

DR. PRASANNA SHAMA KHANDIGE, Professor

1. Design and synthesis of some new pyrazolopyrazolines as potential anti-inflammatory, analgesic and antibacterial agents. European Journal of Medicinal Chemistry Aug 2015; 28(101): 442-51
2. Design, Synthesis and pharmacological studies of some new Mannich bases and S-alkylated analogs of Pyrazole integrated 1,3,4-oxadiazole. Research on Chemical Intermediates July 2015; 1-21.
3. Molecular properties prediction and synthesis of new oxadiazole derivatives possessing 3-fluoro-4-methoxyphenyl moiety as potent anti-inflammatory and analgesic agents. Monatshefte für Chemie - Chemical Monthly July 2015; 1-9

MIDAZOLAM SPRAY FOR EMERGENCY SEIZURES AND STATUS EPILEPTICUS

Compiled by: **Anit Tresa Kurian**

I Year M.Pharm

Department of Pharmacology

Status Epilepticus (SE) is defined as more than 30 minutes of continuous seizure activity or two or more sequential seizures without full recovery of consciousness between seizures. It is a neurologic emergency and is associated with substantial morbidity and mortality in the paediatric age group and affects 4-7% of children. The management process is classified into initial stabilization, termination of seizures and assessment followed by treatment of the cause.

The Proposed Mechanisms of SE:

- I) Constant activation of hippocampus
- II) Loss of GABA- mediated inhibitory synaptic transmission in hippocampus
- III) Glutamatergic excitatory synaptic transmission

Pharmacologic management:

From the past 30 years, benzodiazepines are considered as the first-line treatment option for SE. But, the appropriate drug and route of administration for seizure control outside the hospital setting or without the IV access, still remains a challenge. For the initial treatment of SE, Lorazepam is considered to be a standard treatment option. Even though it is safe to be used by paramedics, Lorazepam has a short shelf-life without refrigeration, limiting its practicality in pre-hospital setting. Diazepam is also more commonly used for treatment of SE, because it can be delivered by either of the routes (IV or rectally).

However, the efficacy of diazepam in terms of termination of seizures is believed to be inferior when compared to other benzodiazepines, ESP. When administered rectally. For the treatment of acute seizures at home and in hospital the use of rectal diazepam has been effective and successful, but its use maybe socially embarrassing and undesirable. An effective treatment that can be easily administered by a more convenient route is therefore needed. Midazolam is considered to be an alternative rescue medication in the management of acute seizures.

Midazolam for the treatment of Status Epilepticus:

Midazolam (a water soluble 1, 4-benzodiazepine) belongs to a group of drugs called Benzodiazepines. It may be used as a sedative or hypnotic. It can be administered via IM, as well as by the rectal or IV routes. In case of SE, Midazolam is used for emergency management of seizures due to its ability to stop the seizures rapidly. Once absorbed into blood, midazolam travels to the brain, attaching to the receptors in the brain that control electrical impulses that are firing at a usual rapid rate. It also works by relaxing the muscles which is particularly of benefit in many types of seizures.

Pharmacokinetics of Midazolam:

- Oral Midazolam – rapidly absorbed from the GIT. Only 40-50% reaches the systemic circulation.

- Rapidly absorbed if given by IV with an absolute bioavailability of more than 90%.
- Vd – 1-2.5 L/kg in healthy individuals.
- Extensively bound to the plasma proteins, primarily albumin.
- Biotransformed by Hepatic microsomal oxidation followed by glucuronide conjugation.
- Has a short elimination half-life of 1.5 to 3 hour compared to >20hr for diazepam.
- Plasma clearance – 5.8 to 9 ml/kg in healthy individuals.

Midazolam- search for non-iv routes of administration:

The requirement of an IV access before benzodiazepine administration may delay the treatment of SE, which might risk the life of the patient. Thus non-IV administration of midazolam is an attractive idea. Intra-nasal midazolam delivers anti-epileptic medication directly to the blood and cerebrospinal fluid via the nasal mucosa. It provides better seizure control than rectal diazepam. Even buccal midazolam was found better than RD.

NASAL MIDAZOLAM: Efficient in the treatment of acute seizures

Jeannet et al Conducted a study to determine the efficacy, tolerance and the applicability of nasal midazolam during acute seizures in children both ath hospital and at home. A total of 26 children were included in the study. The investigators concluded that nasal midazolam was efficient in the treatment of acute seizures. It appeared to be safe and most useful outside the hospital in severe epilepsies, particularly in older children because it is easy for parents use.

Intranasal Midazolam: Easy to use for the treatment of seizures in children with SE:

Holsti et al conducted prospective randomized study to compare IN midazolam using a mucosal administration device (IN-MMAD) with rectal diazepam (RD) for the home treatment of seizures in children with epilepsy. A total of 358 paediatric patients with epilepsy were included in the study. The study results showed no difference or adverse effects between IN-MMAD and RD. But there may be a trend towards faster seizure control in the IN-MMAD group. Adverse effects were also found to be minimal.

Based on the ease of administration, overall satisfaction, IN-MMAD may be considered as an alternative to rectal diazepam and also as a rescue medication for the in-home treatment of prolonged seizures in children.

Reference:

www.ncbi.nlm.nih.gov/NCBI/Literature/PubMed/3668946

www.ncbi.nlm.nih.gov/pubmed/15123028

PAPAYA LEAF EXTRACT TO TREAT DENGUE: A NOVEL THERAPEUTIC OPTION?

Compiled by: **Mr. Shanon Ben Mascarenhas**

PhD Scholar

Department of Pharmaceutics

Dengue, a viral disease transmitted by the bite of the *Aedes* mosquito, has reached alarming proportions in the past few years. Today endemic in over 125 countries, it infects nearly 50-270 million people every year, resulting in a sizable number of deaths. In fact, dengue appears to be overtaking malaria in terms of morbidity and economic impact of the disease. Unfortunately, due to lack of adequate surveillance systems in the underdeveloped and developing countries, the exact extent of the problems are not known. Travelers from non-endemic areas to the dengue-affected areas are also exposed to the possibility of infection. This makes it an international public health concern, affecting individuals from countries even where the disease is not prevalent.

A herbal medicine being investigated to control the mammoth problem of dengue is the extract of the leaves of the papaya plant, *Carica papaya*. There have been conflicting reports on the effectiveness of this extract in the treatment of dengue. In this article, we present a brief overview of dengue and a review of available literature regarding the use of the papaya leaf extract for the treatment of this condition.

Possible mechanism of papaya leaf extract in dengue:

The papaya plant possibly brings about its effect by treating the thrombocytopenia associated with the condition. Studies have reported membrane stabilizing properties of *C. papaya* L. leaf extracts in in vitro studies. The study found that *C. papaya* L. leaf extracts inhibited heat-induced and hypotonicity-induced hemolysis of erythrocytes obtained from both healthy individuals and individuals with dengue infection; the effect was observed at the lower concentrations of the extracts. Thus, the extracts are likely to possess membrane-stabilizing properties and protect blood cells against stress-induced destruction. This property may be useful in patients with dengue infection where the leaf extracts could possibly prevent platelet lysis. The authors postulate that this

effect could be due to the presence of flavonoids and other phenolic compounds in the papaya leaves.

Study in humans:

According to study conducted in Malaysia, the juice obtained from the papaya leaves was used to conduct an open-labeled randomized controlled trial on 290 patients between the ages of 18 and 60 years with platelet counts $\leq 100,000/\mu\text{L}$. The patients were confirmed to be suffering from dengue using a rapid dengue bedside test. Patients in the intervention group were administered fresh juice from 50 g of *C. papaya* leaves once a day 15 min after breakfast for 3 consecutive days. In addition, they received the standard treatment for dengue. The controls only received the standard treatment. The final analysis was conducted on 111 patients from the intervention group and 117 controls. The study found that there was a significant increase in the platelet counts in the intervention group at the end of 40 h when compared to the counts 8 h after the intervention began. This significant increase was not observed in the control group. An increase in arachidonate 12-lipoxygenase and the platelet-activating factor receptor gene expression was also observed in the intervention group. These genes are associated with increased platelet production.

Conclusion:

Papaya extract no doubt offers a cheap and possibly effective treatment for dengue. However, currently, it is also necessary not to rely entirely on the leaf extract and ignore standard treatment for dengue until the benefits are established. Large scale randomized clinical trials in dengue-confirmed patients is necessary to establish their usefulness.

Reference:

N Sarala, SS Paknikar. Papaya Extract to Treat Dengue: A Novel Therapeutic Option. *Ann Med Health Sci Res.* 2014 May-Jun; 4(3): 320-324.

NGSMIPS girls win the championship trophy of the Nitte University Women's Throw Ball Tournament 2015-2016



Students Council Inauguration 12th September, 2015.



Onam Celebrations at NGSMIPS, 3rd September 2015

