

The Golden Threshold

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*Yogena cittasya padena vacam
malam sarirasya ca vaidyakena l
yopakarottam pravaram muninam
patanjalin pranajaliranatosmi ll*



Let us bow before the noblest of sages Patanjali, who gave yoga for serenity and sanctity of mind, grammar for clarity and purity of speech and medicine for perfection of health.

Invocation



This is my prayer to thee, my lord-
Strike, strike at the root of penury in my heart
Give me the strength lightly to bear my joys and sorrows,
Give me the strength to make my love fruitful in service,
Give me the strength never to disown the poor or bend my
knees before insolent might,
Give me the strength to raise my mind high above daily
trifles,
And give me the strength to surrender my strength
to thy will with love.

- 'Gitanjali'

Inside...

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Courses Offered By Our College

- ⇒ D. Pharmacy - 2 Years
- ⇒ B. Pharmacy - 4 Years
- ⇒ M. Pharmacy - 2 Years

Pharmaceutics
Pharmaceutical -
Chemistry
Pharmacology
Pharmaceutical Analysis
Pharmaceutical
Management
& Regulatory Affairs

- ⇒ Pharm. D - 6 Years
- ⇒ Pharm. D (PB) - 3 Years



"Fill the brain with high thoughts
and highest ideals and place them
day and night before you, and out of
that will come Great Work".

- Swami Vivekananda



HINDU COLLEGE OF PHARMACY

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Approved by AICTE, PCI & SBTET, A affiliated to ANU-An ISO 9001:2008 Certified Institution

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For Internal Circulation Only

EDITORIAL



It gives us immense pleasure in placing the second edition of "The Golden Threshold" in your hands. The fact that the first edition of the same has been received well gives us great fillip and confidence in presenting a variety of readable and useful material in this edition.

Hindu College of Pharmacy has truly been an 'orageny' all through, a huge mountain that came out piercing the earth's crust, amidst the lush greens and lawns of a six-acre prime land in the heart of the city, and stands out as a new and refreshing gateway to the new AP capital, Amaravathi. It is known for its serenity and sanctity of ambience and atmosphere. Our institute has also been a research hub for various branches of study, and is indeed in the process of unveiling many a young scientist in the near future.

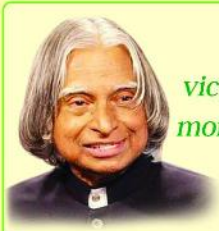
We proudly embark on this momentous journey with a single-minded devotion, so that our founding fathers will bless us soulfully, from here and above, for what all we are!

This newsletter is the product of a potential and untiring effort by all our colleagues and our students, all of whom deserve our hearty appreciation and thanks.

Learning is a lifetime phenomenon. We learn and disseminate something new every day. Here at HCOP, we learn values of life too!

Wish you all

The very best in life all along!



"Don't take rest at your first victory because if you fail in second, more lips are waiting to say that your first victory was just luck."

- A.P.J. Abdul Kalam

Welcome to

Dr. R. Rama Krishna, M.D
as our **Governing Body Member.**



Dr. R. Rama Krishna, M.D., a renowned Chest Physician in Guntur has been unanimously elected as a Member of the Governing Body of Hindu College of Pharmacy. He has vast experience as Physician, Professor and Pulmonologist, and as an able administrator in Katuri Medical College. This will certainly come handy in the all-round progress of our college, especially in the academics and clinical training of Pharm.D students. Warm greetings and best wishes to Dr. Rama Krishna!

Approval for Research Facility in 3 Departments

On 2nd March, 2016, three of our P.G. Departments, i.e. Pharmaceutics, Pharmaceutical Analysis and Pharmaceutical Chemistry got recognized by Acharya Nagarjuna University as full-fledged Research Centres.

The college has established a centralized Research and Incubation Centre coordinating all the three departments, to be formally inaugurated by Sri Bandaru Dattatreya, Hon'ble Union Minister for Labour and Employment, on 8th April, 2016 in the august presence of Prof. Dr. B.H. Briz-Kishore, F.I.E, PMO Former Advisor and Policy Maker, Govt. of India, who has been our Master, Mentor and guiding light all through.

HCOP SPORTS MEET- 2K16
With a unique motto, 'Soar Higher!'

HCOP has conducted a spectacular Sports Meet on 11th and 12th February 2016 at our college, for all the Pharmacy Colleges under the purview of Acharya Nagarjuna University, wherein nearly 600 students have participated and made their exhilarating presence.

Sri Modugula Venu gopal Reddy, Hon'ble MLA, Guntur West inaugurated the gala event.

Competitions were conducted in various sports like volley ball, throw ball, shuttle, badminton, caroms, shot-put, table tennis etc. Winners and runners-up were presented with cash prizes and certificates.

The valedictory function was graced by Sri Rama Krishna, DSDO, Guntur as chief guest. The prizes were given away by our Chairman, Dr. M. Radhakrishna Murthy, Vice-Chairman, Dr. S. Madhusudana Rao, Secretary & Correspondent, Sri Jupudi Rangaraju, Principal Dr. R. Govindarajan and others. Mr. Ch Ajith Babu, Physical Director made all the arrangements to make the event a grand success.

Article

Prescription Oriented Drug Analysis of Multiple Sclerosis by HPLC-UV in Whole Human Blood



Dr. A. Suneetha, M.Pharm, Ph.D.,
Professor and H.O.D,
Dept. of Pharmaceutical Analysis

As a polytherapy treatment, multiple sclerosis disease demands prescriptions with more than one drug. Polytherapy is sometimes rational for drug combinations chosen to minimize adverse effects. Estimation of drugs that are concomitantly administered in polytherapy is acceptable as it shortens the analytical timepoints and also the usage of biological matrices. In clinical phase trials, the withdrawal of biofluids is a critical issue for each analysis. Estimating all the co-administered drugs in a single shot will be more effective and economical for pharmaceuticals. A single, simple, rapid and sensitive high-performance liquid chromatography assay method has been developed with UV detection and fully validated for the quantification of 14 drugs (at random combinations) used in the treatment of multiple sclerosis. The set of combinations was based on prescriptions to patients. Separations were achieved on an X-Terra MS C18 (100 × 3.9 mm, 5 μm) column. The analytes were extracted from 50 μL aliquots of whole human blood with protein precipitation using acetonitrile.

All the drugs were sufficiently stable during storage for 24h at room temperature and for 23 days at 2-8°C. The percentage recoveries of all drugs were between 90 and 115%, with RSD values <10.6%. This method has been shown to be reproducible and sensitive and can be applied to clinical samples from pharmacokinetic studies and also a useful tool in studying the drug interactions.

Article

Drug Price Regulator Finds 4,700 Medicines Illegally Over Priced



Dr. M. Ramaiah, M.Pharm, Ph.D.,
Professor & H.O.D,
Dept. of Pharmacognosy.

The national drug price regulator NPPA has warned of action against companies violating its pricing norms, as it found prices of medicines had increased beyond permissible limits, although over 95 per cent of stock keeping units of medicines were found to be complying with its order during an internal study.

According to NPPA, of the 1,01,418 pharma stock keeping units observed, prices of 4,724 SKUs were found to have changed beyond permissible limit as per Drug Prices Control Order (DPCO) 2013. It further said prices of 17,226 SKUs rose within the permissible limit as per DPCO 2013. While prices of 18,104 SKUs declined, there was no change in those of 60,998 SKUs as per the study conducted by NPPA in August last year. It found that 95.4 per cent of SKUs complied with the DPCO, 2013 from pricing perspective. The drug price regulator said out of the 4,724 SKUs, the prices of which have gone up in violation of the DPCO, 2013, 829 were scheduled SKUs while 3,895 were unscheduled SKUs. Out of the total SKUs studied, 12,213 were scheduled SKUs while 88,811 were in the non-scheduled category, NPPA said.

NPPA's mandate is to fix/ revise the prices of controlled bulk drugs and formulations and to enforce prices and availability of the medicines in the country. It also monitors the prices of decontrolled drugs in order to keep them at reasonable levels.

Source: The Economic Times Health World, Noida.

Training in Language and Communication Skills

The Language and Soft Skills training programme, introduced by our Management on February 24, 2016 for all the students of B. Pharmacy and Pharm.D, has proved to be most useful and highly elevating, especially in view of personality and career development. The first phase of the training from February 24, 2016 to March 31, 2016 was conducted by Mr. Pavan Konduru, a professional trainer and motivational speaker. The Management has made the training mandatory for all the students, so that all of them will be well- equipped, self-confident, conversant, knowledgeable and career- ready after the training.

TRIBUTE

SRI GODAVARTHI SATYANARAYANA

(1929-2014)

Secretary & Correspondent, HCOP (2006-2012)

Born in 1929 in a humble middle class business family in Nambur village of Guntur district, A.P., late Sri Godvarthi Satyanarayana rose to exceptional heights by sheer hard work, honesty, integrity, commitment and immense business acumen, mere Telugu medium school education notwithstanding. This endeared him to the famous Majety family of Guntur, especially late Sri Majety Guravaiah Garu, who got his daughter married to Sri Godavarthi. Ever since, he was instrumental in the developments of both the families, more so Majety, for the reason that Sri Guravaiah Garu was by then a known philanthropist, promoting education and literacy, donating a huge site in Brodipet, Guntur for a school which grew into a big Sri Majety Guravaiah High School, for which Sri Satyanarayana acted as Secretary & Correspondent for a record 22 years!

Interest in and service to Education elevated him further to become the President of Sri Majety Guravaiah Junior & Degree Colleges and later, more importantly, the **Secretary and Correspondent of Hindu College of Pharmacy** for 6 years From 2006 to 2012. All the infrastructure, buildings and facilities in HCOP and the Academic developments are ample testimony to his vision and involvement during his tenure.

In his demise, we miss a great human being, a great organizer and even more so, a great host with an obsessive hospitality. Who ever knows him, owes him a lot for his transparent affection and love.

Only a few people leave their footprints on the sands of Time. He is one of them.

(Courtesy : Sri GYN Babu, Secretary, HC & HS Council,
Sri Majety V S R Prasad, Member, Governing Body, HCOP &
Secretary & Correspondent, Sri Majety Guravaiah High School.)

International Women's Day (March 8) Special

KIRAN MAZUMDAR-SHAW

CMD, BIOCON LTD.



Kiran Mazumdar-Shaw (born 23 March 1953, Bangalore, India) is an Indian entrepreneur. She is the Chairman and Managing Director of Biocon Limited, a biotechnology company based in Bangalore (Bengaluru), India and the current Chairperson of IIM-Bangalore. In 2014, she was awarded the Othmer Gold Medal for outstanding contributions to the progress of science and chemistry. She is on the Financial Times' **Top 50 women in business** list. As of 2015, she was listed as the 85th most powerful woman in the world by Forbes.

Kiran Mazumdar was born to Gujarati parents in Bangalore, India. She studied biology and zoology, graduating from Bangalore University with a B.Sc. in Zoology in 1973. Mazumdar went to Federation University (Formerly known as University of Ballarat) in Australia to study Malting and Brewing. In 1974 she was the only woman enrolled in the brewing course, and the topper of her class. She earned the Degree of Master Brewer in 1975.

She started Biocon India in 1978 in the garage of her rented house in Bangalore with a seed capital of Rs. 10,000. Although it was a joint venture, Indian laws restricted foreign ownership to 30% of the company. The remaining 70% belonged to Kiran Mazumdar. Now Biocon is a Rs. 10,000 Cr. enterprise!

In 2004, Kiran Mazumdar-Shaw started a corporate social responsibility wing at Biocon, the Biocon Foundation. The Foundation focuses on the areas of health, education and infrastructure, especially in rural areas of Karnataka which lack healthcare facilities. With Dr. Devi Shetty of Narayana Hrudayalaya Hospital, Mazumdar-Shaw has supported the development of Arogya Raksha Yojana (Disease Protection Program/Health Help). Mazumdar Shaw Medical Foundation is a non-profit organization and has two arms to support its cause, The Mazumdar Shaw Center for Translational Research and Mazumdar Shaw Cancer Outreach Program. Mazumdar-Shaw is the recipient of several prestigious international awards including the Othmer Gold Medal (2014), the Nikkei Asia Prize (2009), the 'Veuve Clicquot Initiative For Economic Development For Asia' Award (2007), Ernst & Young Entrepreneur of the Year Award for Life Sciences & Healthcare (2002), and 'Technology Pioneer' recognition by World Economic Forum (2002). Her pioneering work in the biotechnology sector has earned her numerous national awards, including the prestigious Padma Shri (1989) and Padma Bhushan (2005) from the Government of India.

(Source: Wikipedia)

Padma Vibhushan

Dr. DURGABAI DESHMUKH

(1909 – 1981)

Saga of a sagacious woman

The year was 1921, when the Swadeshi Movement was at its peak. A young Durgabai (Durga) traveled to Rajamundry to attend her cousin's marriage. A meeting with Mahatma Gandhi lit a fire and determination in the 12 year old Durga's heart. She burned her British frocks, wore hand-spun dress, dropped out of school and joined the independence movement.

Her action was no childish tantrum. It was an inspired act of conviction – of serving her motherland, and one that stayed with her throughout her life. Durgabai began learning Hindi and started wearing only Khadi, the handspun cotton cloth favoured by Mahatma Gandhi.

At age of 12, Durgabai began teaching Hindi, a language that she had but recently mastered, to Congress volunteers involved in organizing the annual session of the Indian National Congress at Kakinada, her hometown. The popularity of her Hindi classes grew to such proportions that it soon became a regular school. She called it the Balika Hindu Pathasala and was its Principal from age 12 to 22. The Balika Hindi Pathasala was the first of the many institutions that she was to later build at Madras (present Chennai) and Hyderabad – known collectively today as the Andhra Mahila Sabha. The foundation stone for the first of these institutions, the Mahila Vidyalaya, was laid by none other than Mahatma Gandhi himself.

From an early life Durgabai was associated with Indian politics. When the Indian National Congress has its conference in her hometown of Rajahmundry in 1923, she was a volunteer and placed in charge of the Khadi exhibition that was running side by side. The responsibility given to her was discharged honestly and she even forbade Jawaharlal Nehru from entering. When the organizers of the exhibition saw what she did and angrily chided her, she replied that she was only following instructions. She allowed Nehru in only after the organizers bought a ticket for him! Nehru praised the girl for the courage with which she did her duty.

Hereafter, Durgabai Deshmukh threw herself wholeheartedly into the freedom movement. In 1930 she helped organize the Salt Satyagraha Movement at Chennai, and was sent to prison for one year. When out of jail, Durgabai renewed her commitment to educate Indian women. Whilst in jail, she did the same, teaching Hindi to fellow prisoners.

Her jail sentence exposed her to the tragic circumstances that dominated the lives of women in prison – it was her experiences there that motivated her to take up the study of law later on. Durgabai went on to become a leading criminal lawyer at Supreme Court.

In 1947, she received a call to be a Member of the Constituent Assembly at Delhi. She also became a Member of the Parliament Steering Committee and the Planning Commission in 1952.

1953, Durgabai became Chairperson of the Central Social Welfare Board (CSWB), a position that helped her translate her vision for the country into reality. She traveled extensively through rural India and granted liberally to women and children's schemes and welfare projects. Her achievements as Chairman of the CSWB make a noteworthy list. They include introduction of condensed education courses with special benefits for women, reform of jails, rehabilitation of criminals and commercial sex workers and special assistance to voluntary organizations, working in the fields of nursing economic development of families and birth control promotion.

Born in Rajahmundry, Andhra Pradesh, British India, Durgabai was married at the age of 8 to a man she later quit to pursue her education. In 1953, she married the then Finance Minister of India, Chintamani Deshmukh. According to her own account, Prime Minister Jawaharlal Nehru was one of the three witnesses. C.D. Deshmukh had a daughter from a previous marriage but the couple remained otherwise childless. Durgabai Deshmukh authored a book called "The Stone That Speaketh". Her autobiography, "Chintamani and I" was published one year before her death in 1981.

The Andhra Mahila Sabha founded by her is now a big 'bunyan tree', spreading its branches into 5 schools, 6 colleges, 4 Hospitals, 3 Vocational Training Institutes, 3 Paramedical Institutes, 2 Homes for senior citizens and 2 Working women's Hostels in Chennai and Hyderabad.

'Faith can move mountains' was her guiding spirit throughout her life, and she lived up to it!

Article

STEM CELL THERAPY

- R. Kasi Rao, V.Pharm.D

Stem Cells are undifferentiated biological cells that can differentiate into specialized cells and can divide into more stem cells through mitosis. They are found in multicellular organisms.

Stem cell are broadly divided into embryonic stem cells, which are isolated from the inner cell mass of blastocysts, and adult stem cells which are found in various tissues. In adult organisms, stem cells and progenitor cells act as repair system for the body, replenishing adult tissues.

In a developing embryo, stem cells can differentiate into specialized cells, i.e. ectoderm, endoderm, mesoderm, blood, skin or intestinal tissues. There are three known accessible sources of autologous stem cells in the human adult, i.e. 1.Bone marrow, 2.Adipose tissue and 3. Blood.

Stem cells can also be taken from the umbilical cord, as is the usual practice nowadays during delivery of the baby, and can be harvested for various procedures and purposes. Such a 'banking' of stem cells is now common practice.

The stem cells are variously classified according to their origin and application, i.e., fetal stem cells, somatic stem cells, pluripotent stem cells, multipotent stem cells from amniotic fluid, which in turn grow into adipogenic, osteogenic, myogenic, endothelial, hepatic, neuronal, etc.

The uses of stem cell therapy are myriad. Diabetes, Rhumatoid Arthritis, Parkinson's, Alzheimer's, OA, Strokes of heart and brain, spinal cord injuries, wound healing, marrow transplantation, even some carcinomas, etc - you name the disease and they are there, undertaking the repair, controlling the damage, replenishing the tissue or even healing the wound!

Much of stem cell research owes to the valuable work of Ernest A.Mc Culloch and James E.Till of the University of Toronto in the 1960's. But the innumerable applications of stem cells in the human body repair came into vogue only in the early 21st century. All the later stem cell research is in wide ranging activities involving cell banks, human genome projects, harvesting, multi organ replacement therapies etc. and has even gone to the extent of patenting problems!

In clinical cardiology practice, the initial research used a patient's own stem cells derived from the bone marrow, mainly because they were readily available and had worked in animal studies. Careful study revealed only a very modest benefit, so researchers have moved on to evaluate more promising approaches, including:

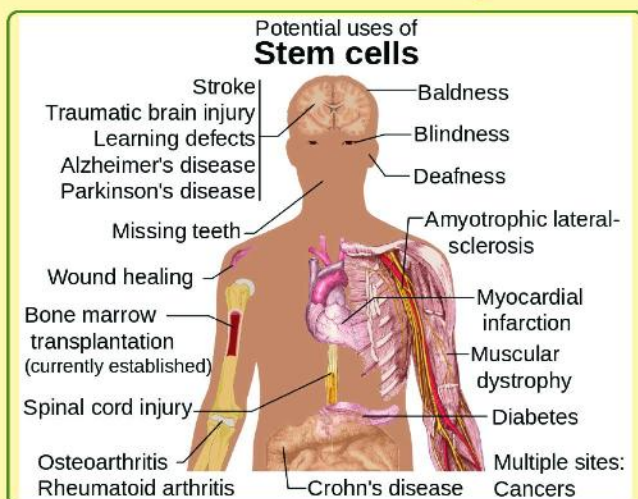
1. giving more highly selected stem cells from a donor around the time of a heart attack.
2. giving a patient's own cardiac stem cells later after a heart attack.
3. giving highly selective, non-cardiac, stem cells from a donor later after a heart attack.

Randomized clinical trials evaluating these different approaches typically allow enrollment of only a few patients from each hospital, and hence what may be available varies from time to time.

However, the future research belongs to stem cells and nano particles!

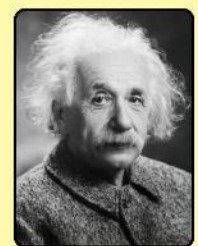


Transmission electron micrograph of an adult stem cell displaying typical ultrastructural characteristics.



"To raise new questions and new possibilities and to regard old problems from a new angle, requires creative imagination and marks real advance in science"

- Albert Einstein



Article

ZIKA VIRUS

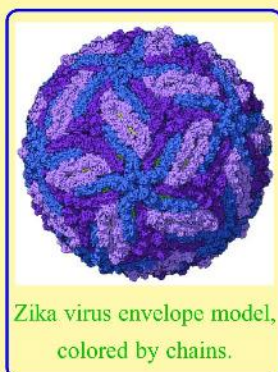
Mr. V.D.C. Sravan Kumar, M.Pharm,
Asst. Professor,
Dept. of Pharmacy Practice



Zika Virus is a member of the virus family Flaviviridae and the genus Flavivirus. It is spread by day-time-active Aedes mosquitoes such as A.aegypti and A.albopictans. Its name comes from the

Zika forest of Uganda where the virus was first isolated in 1947. Zika virus is related to dengue, yellow fever, Japanese encephalitis and West Nile Virus.

Since 1950's, it was known to occur within a narrow equatorial belt from Africa to Asia, but in 2013-2015, it has spread eastward across the pacific, to countries like French Polynesia, Cook Islands, Mexico, Central America, the Caribbean and South America. In January 2016, US CDC (Centre for Disease Control) issued travel guidance and precautions to be taken by all the affected countries.



Zika virus envelope model, colored by chains.

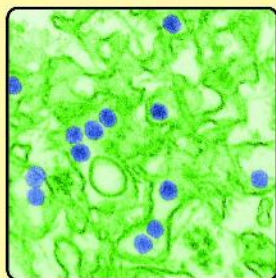
Zika virus is spread to people through mosquito bites. Symptoms last from several days to a week. Zika virus is transmitted to people primarily through the bite of an infected Aedes species mosquito, rarely from mother to child and through infected blood or sexual contact. This may result in microcephaly and other severe brain anomalies in the newborn baby. Zika Infection in adults may result in Guillain-Barre syndrome.

The most common symptoms of Zika are fever, rash, joint pains, conjunctivitis (red eyes), muscle pain and headache.

It is diagnosed by blood tests to look for Zika.

Treatment is based on symptomatic relief such as getting plenty of rest, drinking lots of fluids to prevent dehydration, and taking medicine such as acetaminophen to relieve fever and pain.

We can hope for early invention of vaccine for this deadly disease.



Electron micrograph of the virus. Virus particles are 40 nm in diameter, with an outer envelope and a dense inner core

Practice corner

**THE ART OF PRESCRIBING
4 AIMS, 5 NORMS, 6 PITFALLS**

4 AIMS	Should be
	Safe
	Effective
	Affordable
	Acceptable

5 NORMS OF SELECTION	Should be
	Safe
	Tolerable
	Efficacious
	Simple and
	Uncomplicated

6 PITFALLS OF IRRATIONAL PRESCRIPTION (6 P's)	Poor choice of drugs
	Polypharmacy
	Prescribing for a self-limiting disease
	Prescribing too low a dose
	Prescribing for longer than necessary
	Prescribing, ignoring patients' wishes

(Modified from: 'Remington')

6 TIPS TO TOP THE CLASS

1. Attend Classes 100 percent
2. Take good notes
3. Ask questions and be attentive
4. Manage your time
5. Don't cram your notes
6. Manage stress

Man and Successful man

Man was given 5 senses :
Touch, Taste, Smell, Sight and Hearing.
The successful man has two more :
'Sixth' and 'Common'.

In the next issue

- ▶ Focus on Research
- ▶ Review of Activities of 2015-2016
- ▶ Academic Calendar for 2016-2017

KALEIDOSCOPE



St. Joseph's General Hospital, Guntur
Our Clinical Partner for Training of Pharm.D Students



Historic moments!
Hon'ble Central Ministers Sri JP Nadda,
Sri Venkayya Naidu & Hon'ble Health Minister
of A.P. Sri Dr. Kamineni Srinivas, exchanging
pleasantries with with our Chairman, Secretary and Principal



Swatch Bharat at its peak!
Our Chairman, Vice-chariman, Secretary,
Principal and Staff participating in cleaning of
the campus during National Pharmacy Week



Sri Modugula Venugopala Reddy, MLA, Guntur West
Addressing the Students at the Sports Meet



Sports Meet in Progress



Chairman congratulating the students



Winners at a high !



Sri Pawan Konduru
Master Trainer, on Skill Development Programme



Pharmostsav - 2016