

INDIAN PHARMACEUTICAL ASSOCIATION STUDENTS' FORUM



PANACHE LIVE

An official Students' Pharma Magazine

Theme

“Workforce For Future Needs”

The World Health Organization (WHO) estimates that there is a global healthcare workforce shortage of 7.2 million, which is predicted to grow to 12.9 million by 2035.

Globally, people are living longer with multiple co-morbidities and require increased access and use of medicines. Pharmacists are a key component of the healthcare workforce, and in many countries, pharmacists are the most accessible healthcare profession. This paper identifies key issues and current trends affecting the global pharmacy workforce, in particular workforce distribution, country economic status, capacity, and workforce gender balance.

• **www.
ipastf.org**

IPA-SF is a national forum for pharmacy students under the Indian Pharmaceutical Association. All facets of the Pharmaceutical world: academia, industry, community hospital pharmacy, regulatory affairs are highlighted by IPA. IPA-SF was formed on August 16, 2008 in Mumbai in the presence of Former president of India, late Dr. A. P. J. Abdul Kalam.

***This body has brought
Pharmacy students under one
umbrella, where their energies
have been synergized towards
activities pertaining to the
Pharmaceutical world.***

It enables students to become better future pharmacists while abiding to the highest ethical and professional standards and thus contribute to the overall development of their personality.

Letter from President, IPA



Greetings!

It gives me immense pleasure to know that IPA-SF is releasing its magazine “PANACHE” during the 11th National IPA Students' Congress-2020 to be held at Vignan Institute Of Pharmaceutical Technology, Vishakhapatnam, Andhra Pradesh during 28th-29th February, 2020.

I congratulate the Editorial board of PANACHE and all the office bearers of the IPA-SF and wish them to play a key role with significant achievements and endeavors in future.

The theme of the 11th IPA-SC “ WorkForce for Future Needs” beckons leaders from pharma industry, regulatory, academics , research, hospital and community practice to be deliberate and present their vision and views about the major role a pharmacy student can play in the improvement of pharmacy profession in India in years to come.

Dr.T.V.NARAYANA

President

Indian Pharmaceutical Association

Letter from President Education Division, IPA



Greetings!

I take great pleasure to ink a short message for PANACHE, the news-letter of IPASF. IPASF is striving the best to serve the pharma students across the country.

I feel honoured to be a mentor of IPASF and to be able to contribute my knowledge in guiding the team to the right direction. In an attempt to enhance interest about pharmacy in students, the IPASF team initiated this publication-PANACHE.

PANACHE consists of new, interesting and up to date information about the latest issues and development of pharmacy. This provides a platform for the exchange of information and creative ideas for the students across the country.

I really appreciate the collective effort of publication team and the strong support of team IPASF for bringing out a productive magazine, beneficial for students.

Dr.S.Vidhyadhara
President
Education Division
Indian Pharmaceutical Association

Letter from Former Chairperson, IPASF



Greetings,

Few memorable experiences working with IPA & IPASF and their major role in supporting you reach your goals/destiny I believe that with my past experiences in international student government bodies like IPSF, IPA-SF, and IPA, leading events and committees involving Alumni engagement, and a strong passion for serving the students and developing their bond amongst each other and with Alumni led me to embody and represent the qualities of leadership, integrity, and innovation that eventually inspired other students to utilize their maximum potential. I started my journey at IPA-SF as a member of the editorial committee for Panache and I guess I never looked back from there. My most memorable experience was representing India at the IPSF Student Congress held in Netherlands and Portugal, and eventually becoming the Chairperson of the International Pharmaceutical Students' Federation World Congress in 2015 which was held in Hyderabad, India. It represented student leaders from 60+ countries. It was my privilege, a learning curve as well as some of the best days of my life which allowed me to make so many friends all over the world. I am still in touch with them and hopefully will be for life!

Motivation/message to the pharma fraternity (mainly students): Never stop exploring! Engage yourselves in extracurricular activities and professional organizations like IPA and IPA-SF while studying to strengthen your relationship and connection with as many peers as possible. These relationships you build will benefit you in the long run. My message to every student who is still trying to identify their path is to be more, do more and dream more!

Neha Dembla

Former Chairperson

Indian Pharmaceutical Association Students' Forum

Letter from Chairperson, IPASF



Dear Readers,

Life is always challenging when you have to pave the path for the budding Pharmacists who enter the field of Pharmacy with all the zeal and all of our team constantly work to open up new avenues. Despite of the hurdles we face the only work force that keeps us alive is the students who always support us and always become the pillars of commitments.

At IPASF, since I have become a chairperson, learning for me has got a different meaning, I admire the potential and determination of the students who have proved their excellence in every phase of life be it academics, co-curricular activities and many others.

I believe that we need to put-forth our trust in our students as they are the bright future of our great nation. For that reason we at IPASF believe in providing platforms for our students so that they can showcase their talents, caliber and stand ahead of all others in the form of Panache.

Pragna Ella

Chairperson

Indian Pharmaceutical Association Students' Forum

Letter from Editor, IPASF



Dear Readers,

It gives me an immense pleasure to present the first issue of Panache of my tenure 2019-2020. Being the Editor of one of the students' best organisation IPA-SF is itself an achievement. I'm happy that IPA-SF has given me a platform to showcase my creativity in the field of words. I'm overwhelmed with my journey from being an editor of Times Of India to editor of IPA-SF. Panache is the best Platform for all the budding pharmacist to show and share their knowledge and creativity. I strongly believe " Gaining knowledge is the first step to wisdom and Sharing is the first step of learning."

This edition contains the creativity in the form of Young Pharmacist Mind. It covers the aspect of pharmacy in terms of future workforce. This work wouldn't be possible without the support of IPA-SF team. I hope and I wish Panache is received well and loved to be read.

Swathi P

Editor

Indian Pharmaceutical Association Students' Forum

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An Internal Portfolio (2019-2021)



Renny Rozario : Vice Chairperson (South)

"Risk more than what others think is safe and dream more than what others think is practical". Being a Vice Chairperson I always care about the well-being of the group and I tackle with all the challenges they face and deal them with utmost care and try to resolve them at earliest hour. I feel it's my privilege to be in Students Forum where we work together to foster up the new avenues for the budding pharmacists.

Abhishek.A.Datta : Vice Chairperson (West)

My journey in IPA as a whole was a big learning curve. I started as a member of the finance committee of IPAMSB-SF which led to me leading the whole finance committee as a head. After a successful Rx 2019 under my leadership, I got enough confidence to apply for IPASF. Also, IPASF recognised my skills and gave me the opportunity to be the Vice Chairperson. This journey has just been approximately a year but the amount of sheer knowledge and experience I gained is huge. I got a chance to address students across India at IPC 2019 in Chennai. I hope IPASF will promote my social as well as professional growth. Also, I will strive hard to uphold the high standards of IPASF.



Iqra Ather : Vice Chairperson (North)

Keeping this quote in mind, I, as a vice chairperson try to integrate the different realms and bring out the best of every member in team. Being a part of a prestigious organization like IPA-SF has taught me to keep my feet on the ground while aiming for the stars. IPA SF is an unbiased platform for any enthusiastic student who wants to work towards the betterment of pharmacy as a healthcare profession. I'm honored to be the vice chair person of north zone in IPASF and amazed to be a part of such a united team. I look forward to work in the direction which maintains the name of our organization, IPASF.



Sumit Das : Vice Chairperson (East)

As being a part of IPASF, I am honored to take the responsibility and provide the best opportunities for all pharmacy professionals and raise their voices for their rights and unite students together globally to show their potential.





Aditya Srinivas Kambala : Hon. Secretary

Being Positive in a Negative Situation is not a Naïve; it's a Leadership". It gives me pride and honor to be the secretary of such a prestigious association. I feel highly responsible of holding up a position like this. I bridge the gap between members of our team and get them working as a team. I strive for the progress of our pharma students and our profession along with our council. My journey with IPA-SF has sculpted me into a better person and has prepared me to face the world that poses me with new challenge each day, which is my promise to the future pharmacists. We promise to mould and sculpt you through IPA-SF. #TogetherWeStand

Likhitha Tadituri : Joint Secretary

Success is sweet, but the secret is sweat. These are the words we need to remember always for the upliftment of ourselves. My journey in IPASF has been very memorable and I'm looking forward for many as such. Being a Joint secretary I take the responsibility of maintaining all the records of our activities and handling all the information carefully. I feel responsible for checking the coordination in between our team. I'll make sure that all the mails and queries put by students and other pharmacy professionals will be answered on time. I'll ensure that I'll work hard for the upliftment of our team and I'm glad to be a member of IPASF.



Isha Aggarwal : Associate Editor

Put your heart, mind and soul into even your smallest acts. This is the secret of success. I am honored to take this responsibility and obliged to be the part IPA-SF. I have been a part of IPA student forum from past 2 years working as the active member in IPA-DSB. With thorough enthusiasm and perseverance planning to broaden awareness through IPA to help pharmacy students to attain a level of exorbitant enthusiasm, insight and apprehension.

Ravi Chandra C V : Contact Person

"Coming together is a beginning, keeping is progress and working together is a success". As a executive council member of IPA-SF, I contribute for the effective management and smooth running of the council in a efficient way. I strongly believe in building and promoting professionalism and social contact amongst the pharmacists fostering competence and professional development. I mainly involve in maintaining and expanding the network of pharmacy students worldwide and work for their betterment.



Rahamthulla Shaik: Treasurer

I feel it as an honor for being a part of IPASF. As a treasurer I am responsible for Financial oversight, annual budget management, Ensuring the completion of financial reporting forms and acting as financial liaison among board members. I believe in " A good association is a half success ". I feel delighted to be associated with such a passionate team IPASF.



Bharat Tyagi : Student Exchange Officer

I am very much thrilled and obliged to be part of such esteemed organization which not only caters to the needs of the pharma industry but also keeps in mind the need for empowering students so that they can excel in life and do good to the pharmacy profession as a whole. IPASF provides best platform for pharma students to indulge in activities and showcase their talents on a National level. I am obliged to do my duty to my best potential. #TogetherWeStand

Anna Thomas : Public Relations Officer

It's my privilege to be a part of IPA-SF and to work as a team for the upliftment of the young pharma people. Being the PRO, I have to form a strong relations with the public especially in handling all the aspect of public campaigns. The ability to build a professional network is the crucial skill that should be maintained. IPA-SF is a great platform for the students to express themselves and to enhance their professional status.



Harish Kumar Singh : Public Health Officer

The field of pharmacy is constantly expanding and being a member of IPASF, I take the privilege and opportunity to look forward to learn new techniques and explore new development. I have been a part of IPA student forum from past 6 years working as the active member in IPA-BIT. I believe it's our solemn responsibility to together build pharmacy as a healthy profession.



Yogendra Kanchapu : Pharmacy Education Officer

"You reap what you sow". Education is the one which makes you sufficient and skills are the one which make you efficient. Being Pharmacy Education Officer, I concentrate on events for advocacy of traditional education, whilst promoting the development of supportive skills in the pharmacy student community. We constantly thrive to be in pace across the global horizon. We understand the need for equality for education and throughout our lives and most importantly we believe in giving every pharmacist a opportunity to earn the living.



Want to join us



IPASF



IPASFofficial



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IPASF



IPA_SF

7 Reasons to join IPA-SF:

1. **Friendship:** IPASF is composed of 24 states which includes more than 3 lakh pharmacy students who gather up at any Pharma event.
2. **Exposure:** By participating in various IPA-SF General and regional events.
3. **Leadership and professional development:** By becoming a part of the IPASF team or through leaders in training and Patient Counseling, Clinical Skills, and Compounding events and competition.
4. **Personal growth:** Through publishing in our regularly released IPASF Newsletter PANACHE, our scientific publication Pharma Times.
5. **Public engagement:** By improving public health with opportunities for campaign organization and implementation on a local level and engagement in international affairs and issues impacting pharmacy students.
6. **Recognition:** By receiving national level awards for high involvement in IPASF Activities that improve public health and pharmacy advocacy on national scale.
7. **Cultural competency:** Through joining Student Exchange Programme. By communicating with people of different background one can have a sound knowledge about the profession.

Media and Publication Gratitude.....

Thanks to social media!

Social media is a part of our daily life; we cannot imagine our life without it. We the millennial live on social media; it has accomplished a lot of amazing things.

Okay...to start with, do you use Facebook, Twitter or any other social media platform? Hold on if you are reading this you have probably known this by clicking into one of our IPASFs' social media. Social media impacted our society and our generation like no other ever before.

Let's have a peep into the past...shall we? If I would say somebody from the past that we can sit under the same roof and work flawlessly and effortlessly together on various projects with different nationalities. Well, he would just say it is impossible keeping in the distance, language and political issues as obstacles. In the past, the interaction was restricted. The strangers were considered as a threat. Our communication was restricted to family, friends and neighbors.

How can a student from Madhya Pradesh will know the work of students in Kerala? How students from different states work together with the same goal "together we stand."

We are in the era where learning is made easy and interesting. Thanks to social media which helped IPASF to grow... to be known! We reached to the students across the country through social media platforms and acknowledged that we share the same passion and commitment towards the pharmacy world. The world is for young students like us let's work together and pave our future together.

How IPASF can bring change in the pharmacy world.....

IPA-SF promote the science and arts of Pharmacy in all aspects and work for its welfare on a broader picture. It impart suitable education and training to the members preparing for the profession of pharmacy or to those already engaged in the profession and to undertake, carry on or promote scientific and technical research, experiments and tests of all kinds in pharmaceutical and allied sciences. It provides a medium to edit and publish, journals, books, magazines, documents and other publications for promoting the causes of the profession of Pharmacy and finally to hold seminars, symposia, conferences and exhibitions for promoting the causes of profession of Pharmacy.

The major challenge faced by the pharmacists in India is reorganization. The service provided by pharmacists at various capacities goes unnoticed. There are many burning issues like cadre formation, promotional channel, grade pay and recruitment under government establishment, job security, pay and working environment etc, in private establishment. At present, IPA is the largest association of pharmacists in India. Soon, we will have our presence across the country. IPA-SF will enable them to become the better future pharmacists, while abiding with the highest ethical and professional standards. This will be catalyzing overall development, honing their academic,

leadership and professional skills for their benefit in turn the profession and thus the health of INDIA.

IPA-SF ever since its inception has been trying to bring all pharmacists and pharmacy associations together, under its umbrella, as IPA-SF believe that a unified voice is required to cater to all the major issues being faced by pharmacist fraternity today. The association is working on the grade pay, cadre formation and promotional avenues. There has been very little scope for pharmacy graduates. We have been representing the government at various levels to accommodate this vast pool of professionals for their ambitious projects like rural health/ community health programmes. Taking serious note on our demands, the government in its national health policy has incorporated the pharmacists as one of the professionals to be trained for handling patients at the primary levels. IPA is currently looking for the permanent recruitment of various posts of pharmacists lying vacant or are filled on contract basis.

IPA-SF made a huge impact; firstly they won the 'Best Student Forum in the World' award, indicating the recognition by global community of students. Through their association with IPASF and participating in the world congress, the Indian pharmacy students will gain skill sets such as strong networking,

understanding global scenarios, opportunities for career enhancement, leadership training and development of organizational skills. They will also understand the importance of having a constitution, value of strong internal democracy and planned way in which organizations can run. All these would help our students build a very strong IPA-SF.

Participation in the world congress would help students learn how to voice their opinion to the right people to get the much-required exposure. Through this world congress our country and our culture would get better exposure leading to a stronger relationship between IPSF and IPA-SF, which would open doors for our students to WHO and UN through IPSF.

IPA has a very broad agenda, of which industry is an integral part. IPA would like to make all efforts to bring about a cultural change in the industry that would promote quality awareness in every aspect and develop a patient-centric focus. IPA would like to work towards developing the future pharmacists fully equipped with knowledge about current and future requirements through constant interactions with all stakeholders. IPA envisages its role in the development of community and hospital pharmacists, which would play a major role in creating a better health care system in our country.

Highlights of 2018-2019

Expert session on “Challenges and opportunities for pharmacy practice in India and abroad” at Maliba Pharmacy College. Maliba Pharmacy College organized one day expert session on “Challenges and opportunities for pharmacy practice in India” and “Pharmacy education at universities in USA” on 18th January 2019. The guest speaker was Dr. M. Chandra Sekar, Professor, Department of Pharmaceutical Science, University of Findlay, USA.



Activities of IPA - SF

ASN Pharmacy College Chapter

1. World Leprosy Day:

On the occasion of World Leprosy eradication Day, ASN Pharmacy college in association with Gretnaltes Referral Center, Morampudi, AP conducted awareness programme with the patients in the hospital. Students donated blankets and medicines to the patients in this event. WHO Good Will Brand Ambassador of Leprosy Eradication “Yohei Sasakawa” and his team attended this event.



2. World Cancer Day:

ASN Pharmacy College, organised an awareness programme for school students at Nehru Niketan School at Tenali. Students of ASN PC along with IPA-SF National Council members, Pragna Ella and Manideep had conducted an awareness lecture on “Types of Cancers and it Preventive Measures” to 9th standard students and conducted Quiz and Drawing Competition.



3. World Kidney Day:

On the occasion of World Kidney Health day, we have invited DR. K. V. Narendra M.S, M.Ch., to conduct guest lecture for the kidney health to the students and other college management. We conducted Essay Writing for the students on “Kidney Health for Everyone” to encourage the awareness about Kidney health.



Awareness rally at Parul University, Vadodara (Gujarat) in association with IPASF on the occasion of AIDS day



Free medical camp on diabetes at IPASF Patna Chapter



Activity at VIGNAN College Duvvada.

A healthy village project promotes local actions by the community members, mobilizing human and financial resources to build healthy environments and promote healthy behaviours. This guide is intended to provide community leaders with information to assist them in implementing and sustaining a healthy villages project. It covers topics such as water and sanitation drainage, domestic and community hygiene and provision of health services providing extensive source materials.



Activities at CHIPS Chapter

CHIPSOIREE 2019:

CHIPSOIREE is an inter-pharmacy college competition. Apart from academics we want to bring the best in cultural events. We conducted several events. Awarded the winners.

Current Aspects on Quality & Industrial Orientation Training by PTI (17-19 June 2019):

MEDICAL AFFAIRS WORKSHOP:

A One Day- "MEDICAL AFFAIRS WORKSHOP" was organised by CHIPS in association with Accreditation Council for Medical Affairs (ACMA), IPA, Education Division and IPA, Andhra Pradesh State Branch. Dr. Sakaram Garale, Head-South East Asia, ACMA conducted the workshop on the topics - Insights on current medical affairs, Evolution of medical affairs in pharma and MSL: A key stakeholder in new age medical affairs.

Students Chapters.....Our little steps.

1. ASN Pharmacy College, Tenali, AP
2. Chebrolu Hanumaiah Institute of Pharmaceutical Sciences, Chowdavaram, Guntur, AP.
3. Vignan Pharmacy College, Vadlamudi, Guntur, AP
4. VVIPS, Gudlavaluru, Krishna district, AP
5. Annamacharya College of Pharmacy, Rajampet, AP
6. Vigan Institute Of Pharmaceutical Technology, Duvvada, AP.
7. Vikas College of Pharmaceutical Sciences, Suryapeta, Hyderabad, Telangana.
8. Vijaya Institute of Pharmaceutical Sciences For Women, Vijaywada, AP.
9. VIPER, Narasapur, Hyderabad, Telangana.

An Interview with **Dr. Krishna Ella** Chairman and Managing Director of Bharat Biotech.

Well have you all heard about ZIKA virus and how it created a panic among people ...thanks to the efforts of Indian Entrepreneur who has developed World's first ZIKA Vaccine.

We were privileged to take the interview of such an inspirational personality.



Q. What is your birth place?

My birth place is Chennai. Tiruttani is my native place. Nemili about 60kms from Chennai that's my birth place.

Q. Is there anything that you are passionate since your childhood?

In my childhood I was passionate about science. I was always inspired by science. Since I'm from farming family, I always looked up to farmers problem. How much the farmers struggle and that too my mother she was working so hard to make the family keep going and I've seen the hardship.

Q. Who motivated you to start the Bharat Biotech?

Both my mother and my wife. My wife wanted to come back to India. She felt that we did well enough in US let's do something for our society (India) either job or whatever it is. And my mother told me one simple thing "son you have 9 inches stomach how much ever you make in US you cannot eat more than 9inches stomach...come back to India. I have my agriculture I'll feed your 9 inches stomach..I won't let you starve even for a single day. I'll feed you till I'm alive. You do whatever you like."

Q. Why the risk of innovative company?

Innovative is always a risk. The chance of success is only few that's why innovation creates more risk than any other generic business.

Q. Why did you chose to establish your business venture in Hyderabad ?

It happened by chance. Initially I had planned on setting up my venture in Bangalore but due to certain turn in events I chose the Hyderabad city. And now when I think of it I feel it was the right decision and it might've also been a reason for the success of Bharat Biotech.

Q. What are you passionate about in life?

I am passionate about science and technology. These two fields have always drawn my interest. I wanted to use these interests in serving the people.

Q. Can you tell us the accomplishments that changed your career?

I'm basically an agriculture graduate nowhere connected to the vaccine field and I never understood what a vaccine is but what connected me is the skill set in US. The skill set was I was a molecular biologist. Gene knock out and Gene expression. I can take out the gene and put the gene back..and I've done my PhD in Analytical Thinking process. These two things helped me to shape up to sought of understand the business angle.

Q. What changes would you like to suggest for pharmacy education?

Pharma is an amazing science it really connects the chemistry and biology.

What I'm surprised is why there are not many start ups in pharmacy alone. We have many engineering starts ups...so what is missing? I really want to understand the reason behind this and I want to talk about this with the students....what is gap? Is it the skill that is missing or the conceptual thinking that is missing. We can do a lot of businesses in pharmacy. People think business is about the money in crores... start from a small set up and build on. Think simple. The steps are small but the journey will be long. Use your skill and build things you'll get the confidence.

Q. As a leader what all the qualities a student should posses?

Whatever you are doing..you do the best. That's called a leadership. You use your skill set and imagination to solve problems of the society, For me that is the leadership. One should have a passion to solve problems. It is an acquired thing to help the community.

Q. Hard work or luck which one supported you sir?

Only hard work. I don't believe in luck. Luck is for people who believe in astrology. For me work is worship.

Q. Hard work or Smart work?

There is no smart work if you don't work hard. When you work hard you'll become smart in working as simple as that.

Q. Do you think the fresher who is graduating from the college should get some work experience and then start a

business or all the academic skills are enough to directly start the business?

If the kids have ideas from the beginning then there is no need for work experience and just try it out. Some kids they get the idea after getting into work space...so it all depends. Experience will be helpful any day. Can I think of becoming an entrepreneur after my university? No. I had this idea after my teaching experience when I worked as a faculty.

Q. What do you want to say about the budding pharmacist coming out the college who are interested in research?

Pharma has become too centric from pharma. Your degree maybe pharmacy but you study a lot of things like microbiology, organic chemistry so on and so forth. One can get into various fields like food companies, vaccine companies or diary sciences. A pharmacy student can contribute better in this field. Drug making is not the only thing should think about the alternative paths. Explore the new areas of sciences. Research thinking is missing in pharmacy that means the skill set is not good. Should have the core knowledge. Get the industry exposure. Do the PhDs get into companies. Work on the analytical skills.

Q. Do you think degree matters more than work experience?

Both matters. It's like whether good driving is enough or need the license. Only good driving will not help you need both.

Q. If you are given with a chance would you change the profession?

I change my profession in every 2 years...I changed from human science to veterinary science....now veterinary to food science. I don't like doing the same thing...change is the only constant for me.

Q. What message do you want to give?

Focus and skill set is all you need to get into the new generation economy. We need more pharmacist with research thinking.

Pharmacy World A Students' Perspective event on the occasion of Decennial Celebrations of IPA-SF Formation Day

The student forum members of The Indian Pharmaceutical Association received the responses from students from all the four zones throughout the nation - North, East, West and South.

Pharmacy World - A Student's Perspective (PW -ASP) was a video challenge event for students for B. Pharm, M. Pharm and Pharm. D. The students created a video with a duration of 3 minutes expressing their views on the theme along with answering two questions in particular. The questions were "What was the proudest moment for you being a pharmacist?" and "What makes pharmacy a unique and noble profession?"

50 participants in total from all over the country:-

- 1) 8 participants from NORTH ZONE
- 2) 40 participants from SOUTH ZONE
- 3) 2 participants from WEST ZONE.

The winners of this event are :-

- 1) Dhirajmehta, B. N University, Udaipur (North)
- 2) Geetha Mallika, Shri Vishnu College of Pharmacy West Godavari district (South)
- 3) Anjana V. Dinesh, SRIPMS, Tamil Nadu (South)
- 4) Reshna Nair, Parul University, Gujarat (West)

These winners have been rewarded with a memento and a certificate of appreciation and also complimentary registration for PHARMARIA-2019 at Delhi.




IPA-SF collaboration for NPW.....

IPA in collaboration with IPA-SF had organized a “Comic Poster Making Competition”, “Patient counseling Video Making Competition” and “Leaflet Making Competition” on the Occasion of 58th

National Pharmacy Week.

Winners got an E-Certificate, Cash Reward, and a copy of IPA Publications.



National Pharmacy Week

NPW COMIC POSTER MAKING COMPETITION RESULTS

Theme: Pharmacist :Your Medication Counsellor

IPA Had Organized A “NPW Comic Poster Making Competition” On The Occasion of 58th National Pharmacy Week and It Got An Excellent Response.

Each Entry Showed The Excellent Artistic Skills of Pharmacy Students and Their Caring Approach Towards The Patients

Congratulations To Each and Everyone Who Participated In This Competition

WINNERS

- ◆ G. Thejaswi, Bharat School of Pharmacy - Telangana
- ◆ Priyanka kasala, Marri laxmanreddy Institute of Pharmacy - Telangana
- ◆ Diya Desai, Narsee Monjee Institute of Management Studies Shirpur – MH
- ◆ Madhumitha, S. SRIPMS Coimbatore - Tamilnadu

We Profusely Thank The Judges For Spending Their Valuable Time.

- Dr Madhusudan Joshi, Goa College of Pharmacy, Goa
- Mrs Smita, Bharati Vidyapeeth's College of Pharmacy, Pune, Maharashtra
- Dr Gaurav Jain, SPER, Jamia Hamdard University, Delhi

Winners Will Get E-certificate, Cash Reward And A Copy Of IPA Publication .
All Participants Will Soon Receive Participation E- Certificate

Organized By
Indian Pharmaceutical Association Community Pharmacy Division (IPA-CPD)

In Collaboration With
Indian Pharmaceutical Association Students Forum (IPASF)





National Pharmacy Week

NPW PATIENT COUNSELLING VIDEO MAKING COMPETITION RESULTS

Theme: Pharmacist Your Medication Counsellor

IPA Had Organized A “NPW Patient Counselling Video Making Competition” On The Occasion of 58th National Pharmacy Week and It Got An Excellent Response.

Each Entry Showed The Excellent Response From The Pharmacy Students & Practicing Pharmacists and Their Caring Approach Towards The Patients

Congratulations To Each and Everyone Who Participated In This Competition

WINNERS

- ◆ Satish Sare, ROPER, Andhra Pradesh.
- ◆ Showeta Patil, Community Pharmacist, P Medicals, Sangli, Maharashtra.
- ◆ Hemanth Reddy, Santhiram College of Pharmacy, Andhra Pradesh.

We Sincerely Thank The Judges For Spending Their Valuable Time.

- Dr Dipati Srivastav, Amity University, Lucknow, Uttar Pradesh.
- Mr Santosh Ghodinde, Community Pharmacist ,Puneel, Maharashtra.

Winners Will Get E-certificate, Cash Reward And A Copy Of IPA Publication.
All Participants Will Soon Receive Participation E- Certificate.

Organized By
Indian Pharmaceutical Association Community Pharmacy Division (IPA-CPD)

In Collaboration With
Indian Pharmaceutical Association Students Forum (IPASF)





National Pharmacy Week

NPW LEAFLET MAKING COMPETITION RESULTS

Theme: Pharmacist Your Medication Counsellor

IPA Had Organized A “NPW Leaflet Making Competition” On The Occasion of 58th National Pharmacy Week and It Got An Excellent Response.

Each Entry Showed The Excellent Clinical Skills of Pharmacy Students and Their Caring Approach Towards The Patients

Congratulations To Each and Everyone Who Participated In This Competition

WINNERS

- ◆ M. Uday kumar Arya College of Pharmacy - Andhra Pradesh,
- ◆ K.Navya Jyothi, Vignan Institute of Pharmaceutical Technology - Andhra Pradesh,
- ◆ Ahwarya Vaswan, Echuthachan College of Pharmaceutical Sciences - Kerala,
- ◆ Deepthi Enumuk, Research scholar, Manipal College of Pharmaceutical sciences - Karnataka,
- ◆ V. Chaitra, Vijaya Institute of Pharmaceutical Sciences for Women- Andhra Pradesh
- ◆ Yoshitha sree, Mami Lasman Reddy Institute of Pharmacy - Telangana.

We Profusely Thank The Judges, For Spending Their Valuable Time

- Dr. Moitreyee Mandal, J.C.Ghosh Polytechnic, Kolkata, West Bengal
- Dr Deepak Bhagwat, Maharaja Agrasen School of Pharmacy, Solan, HP
- Dr. Uday Venkat Maneti, NGSM Institute of Pharmaceutical Sciences, Mangaluru, KA
- Dr. Karthik Rakam, Pharmasoin Society for Pharmacy Practice, Hyderabad
- Mr Anand Katta, Founder <http://www.asksonpharmacist.in>, Bangalore

Winners Will Get E-certificate, Cash Reward And A Copy Of IPA Publication.
All Participants Will Soon Receive Participation E- Certificate

Organized By
Indian Pharmaceutical Association Community Pharmacy Division (IPACPD)

In Collaboration With
Indian Pharmaceutical Association Students Forum (IPASF)




My Experience at 9th AASP, Suwon, South Korea... Chairperson IPA-SF

The Indian Pharmaceutical Association and I go a long way back we first met in 2015 as a delegate at IPA-SF World Congress at Marriott, Hyderabad.

During my progressive years at IPA-SF I had got the opportunity to work as volunteer for food committee at 68th IPC Vishakapatnam with the help and guidance of excellent mentors like Dr. T. V. Narayana Sir, Dr. Rao V. S. V Vadlamudi. I got the opportunity to apply for the position in IPA-SF. Finally now I am the Chairperson to IPA-SF 2019-2021. I am going to share my experience in 9th AASP at Ajou University, Suwon, South Korea. I



remember the day when I first received an email notifying that my application got selected for AASP – 2019 Travel grant.

I am so thankful to T. V Narayana Sir, President of IPA for giving me the golden opportunity to attend the conference. Asian Association of Schools of Pharmacy is a platform to connect and integrate the diversity in the world of Pharmacy and create the opportunity for generation of new ideas blend of cultures and exchange of knowledge. It was definitely moment of crowing glory for India at the 9th AASP Suwon, South Korea.

The AASP 2019 on July 3rd-5th turned to be an event that I will cherish and hold instant for the rest of my life. I was simply amazed to experience the scale of this event. IPA has sponsored me 25000 rupees check to

participate in this conference as an IPA-SF representative.

While in the conference, the first day (July 3rd) is a pre-conference where all the speakers explained about the regulations in their countries all over Asia where as the 2nd and 3rd day were blended with a informative lectures by the international speakers and eminent personalities like Dr. V. S. V Vadlamudi and Dr. T. V Narayana Sir. gave an excellent lectures on education perspectives in India on the 2nd day poster entitled evolution of Hepato-protective activity of Emo Oil. As a part of travel grant, they offered free registration, food-75000 KRW cash and a nice accommodation. I enjoyed the diversity that such a congress had offer in terms of cultures and collaboration between students and provided a rich learning experience.

Finally, I want to thank two important persons behind my journey, A. Siva Kumar Correspondent ASN Group of Institutions and DR. K. Venkata Ramana, ASN PC, Tenali, CEC Member IPA as without those people support and suggestions wouldn't be able to make this trip. They are my inspiration and allowed me look at our pharmacy career in a different light.

All in all, it was an unforgettable conference and I suggest every Indian student to try and attend at least one International Conference in their student life to experience our Pharmacy as a global celebration. Platforms like IPA and IPA-SF supports to reach newer heights in our profession. Viva la Pharmacie !!"



Proud Contribution Overseas.....

We are the first Pharm. D interns from India being selected for the International Visiting Research Scholars program at University of Florida in the Department of Pharmacotherapy and Translational Research for a short-term research training program in Pharmacogenomic Research.

Our Research focuses on CRISPR Library screening for Identification of novel Drug Targets and Drug Discovery in AML; Pharmacogenomics and Toxicities of Anti-cancer Drugs in AML.

Other activities involved: Weekly Journal Club Presentations, Lab Meetings, Topic discussions, Conferences. This type of internships are ideal for students who intend to pursue higher studies and establish themselves in the field of translational Research.



Satyavardhan Rao Nittu

Pharm. D Intern

Arya College of Pharmacy, Telangana.



Akhila Dadwai

Pharm. D Intern

Arya College of Pharmacy, Telangana.

Young Pharmacist Minds

POLYPILL IN CARDIOVASCULAR DISEASE

Contributed by: Niharika Toom; St. Peter's Institute of Pharmaceutical Sciences, Warangal, Telangana.

The concept of polypill in CAD patients which was proposed in a cited paper of Wald and Law in year 2003. It is to reduce the burden of polypharmacy and improve the adherence of cardiovascular disease patients.

They introduced the polypill comprising of six drugs (aspirin, statin, beta blocker, angiotensin converting enzyme inhibitor, diuretic, folic acid) by this 80% of patient burden can be reduced.

The research was done over decades for the outcomes of maintaining the blood pressure, cholesterol, clot busters to reduce the mortality and morbidity of CVD patient.

This review concludes about prospective role of polypharmacy burden and adherence of polypill in CAD patients.

SUMMARY OF ARTICLE:

The last year development of polypill have been witnessed in clinical trials for the prevention of CVD with minimum of one anti hypertensive drug along with antiplatelet and statin. Most of the polypills were in current research which is compared with placebo trials were done

to calculate the adherence, prevention, burden of medication, risk assessments and adverse effects of drugs in CAD patients.

STRENGTHS OF POLYPILL

ADHERENCE: Management of CAD is alarming challenge for the adherence to medication in long-term usage patients, unknowledgeable patients, patients who were asymptomatic, overconfidence and negligent on health.

The polypill is introduced to reduce the burden of polypharmacy and increase the adherence of the patients and confirmed by the long-term research studies. In period of 12 weeks, two short term studies compared the polypill and placebo showed the high adherence and other three intermediate to long-term studies proved the high adherence to polypill which is equivalent to placebo.

The space study suggest that individual participants were with low adherence at base line. Meanwhile the individuals without clinical CVD had a better risk ratio of adherence on polypill than usual care. Thus on available data the polypill shows more adherence rate than the other medication pattern.

Manufacturer	Brand names	Active pharmaceutical ingredients
Dr. Reddy's Laboratories ,India	RED HEART PILL 1	Aspirin[75mg],atenolol[50mg],lisinopril[10mg],simvastatin[40mg].
Dr. Reddy's Laboratories, India	RED HEART PILL 2	Aspirin[75mg],hydrochlorthiazide[12.5mg],Lisinopril[10mg],simvastatin[40mg].
Ferror International,Spain	TRINOMIA/SINCRONIUM	Aspirin[100mg],ramipril [2.5,5 or 10mg],atorvastatin[20mg].
Ferror International,Spain	TRINOMIA	Aspirin[100mg],ramipril[2.5,5 or 10mg],simvastatin[40mg].
Cadila Pharmaceuticals Ltd,India	POLYCAP	Atenolol[50mg],hydrochlorthiazide[12.5mg]ramipril[5mg],simvastatin[20mg],optional aspirin[100mg]
Cipla,India	STARPILL	Aspirin[75mg],losartan potassium[50mg],atenolol[50mg],atorvastatin[10mg].
Cipla,India	POLYPILL	Amlodipine[2.5mg],losartan[25mg],hydrochlorthiazide[12.5mg],simvastatin[40mg]
Alborz Darou Pharmaceutical company,Iron	POLYIRAN	Aspirin[81 mg],enalapril[5mg];or valsartan[40mg],hydrochlorthiazide[12.5mg],atorvastatin[20mg]
Zydus Cadila,India	RAMITORVA	Aspirin[75mg],ramipril[5mg],atorvastatin[10mg].

QUALITY OF LIFE ;

The UMPIRE study concludes that there is significantly higher rate in the polypill group compared to usual care group it shows better patient adherence with good outcomes on polypill It shows better quality of life and decreases the mortality and morbidity in CAD patients.

CARDIOVASCULAR RISK FACTOR CONTROL ;

Polypill with the combination of multiple drug in a capsule or tablet it shows right therapeutic agents for the prevention of CVD, ensuring of the physiochemical compatibility of the agents with in a polypill

It is very important that every agent in the pill contains specific biopharmaceutical pharmacokinetic with the desired pharmacodynamic effect for the targeted risk factor .

In this method they have been conducted clinical trials to assess the effect of 5 drug polypill and designed the name of TIPS ONE STUDY which was phase 2 clinical trials The 5 drug polypill contains [aspirin,100mg, simvastatin 20mg Ramipril 5mg hydrochlorthiazide 12.5mg and Atenolol 50mg] against 8 groups which shows the similar effects with combination pill.

There is no evidence of intolerance in polypill by increasing the active ingredients in one pill. The studies were concluded based on the diagnostic patterns and outcomes of the patient was compared with polypill and individual pill group. Baseline desired effects were obtained by the trials.

Thus polypill trials shows better patient outcomes, reduction and prevention of risk factors without any adverse effects and incompatibilities in the preparation of polypill than usual care.

LIMITATIONS

Titration of dose:

Doctors were trained and taught with titration of doses to prevent and control the risk factors but there is a inconvenience in the adjustment of doses in polypill. The lack of therapeutic approach may show with one or another component in the polypill. And based on the above line, studies were conducted according to guidelines and interpreted with better outcomes compared with individual groups.

Impact of drug intolerance:

The main concern in the polypill has been that a side effect of any one component may lead to discontinuation of whole pill. However, studies concluded that better risk factor control suggesting that this increased discontinuation was offset by other advantages of polypill including better adherence.

Low acceptability and mass medicalization:

The polypill has now been around for several years. The study of polypill and awareness have also noted in some countries like India, and hand able in stores. But not handpicked commercially and the reasons should be explored.

The alarming fallout of this approach is the poor compliance and non adherence to daily activities in polypill users.

FUTURE DIRECTIONS:

The main drawback of the concept is customization of polypill in most needed country like India, in individual patients. By this easy prescribing of drugs by practitioners may leads to customization of pill in categorizes like stroke, CHD and high risk of prevention in CVD patients. For the secondary prevention in stroke patients the polypill has a one of the beta blocker along with aspirin, statin, diuretic or ACE inhibitor or both depending on the blood pressure lowering level. The polypill also to be tested in multiple components like life style [physical activity, healthy diet, optimum body weight] to interpret their respective roles in prevention. The polypill for CAD including aspirin should be available to guide therapy based on individual risk of patients and choice of 4 to 6 polypills instead of 1 for different patients may increase the polypill prescriptions among physicians. World health organization has introduced 9 targets for the reduction of premature mortality from non communicable diseases by 25% by 2025. In that 2 may directly relate to pharmacotherapy which ensures 50% of patients receiving drug therapy for the prevention of heart diseases and 80% of availability of essential medicines along with generics to treat diseases in both public and private facilities. There is a poor rate of therapy for unavailability and unaffordability of medicines in middle class, upper class, lower class countries. The affordability and availability of the medicines should be improved by providing public and private health care programmes

List of currently available polypills for research and clinical use:

Some of the common side effects of polypill include; cough, muscle aches and stomach irritation.

PRODUCING COUNTRIES:

Polypill, drug to lower blood pressure, is produced in Iran by the support of Execution of Imam Khomeini's Order was designed 14 years ago and called "PolyIran". According to the study conducted by doctors from Tehran University, the University of Birmingham in Britain and other institutions published by The Lancet, it worked quite well in a new study, slashing the rate of heart attacks by more than half among those who regularly took the pills. The pill in the study, which involved the participation of 6,800 rural villagers aged 50 to 75 in Iran, contained a cholesterol-lowering statin, 2 blood-pressure drugs and a low-dose aspirin.

Certain "cardiovascular polypills" are currently available in India and have been extensively studied there. Also, cardiologists in Spain are developing a polypill for secondary cardiovascular prevention.

TREATMENT OF POPULATION RISK:

Some preventive-use advocates propose that everyone over a given age should take such medications for preventive health, irrespective of individual risk factor levels. The idea is that most people in western countries are at high overall risk, thus lowering risk factor levels will provide broad benefit. This approach emphasizes the perspective that risk factors are continuous, and the rigid dichotomies such as "hypertension" and "no hypertension" may

be over-simplified and can be viewed instead as continuums of inter-connected factors.

In this paradigm, doctors would be treating population risk rather than individual risk factor thresholds as is current mainstream practice. So, if everyone was given a relevant kind of polypill, the average blood pressure and cholesterol levels in the population would fall, thus reducing overall population risk. Perhaps ironically, this is in a sense going in the opposite direction from personalized medicine, since mass-produced or fixed-dose-combination polypills are in some tension with the goals of personalized medicine, due to "fixed" nature of the "dose combinations." Proponents of this population-focused approach contend that the advantages of drug consolidation can outweigh any reduction in the personalization of drug and/or the dose selection. Also, depending on the demographic distribution and market size, there may be room for some different alternative versions or certain general FDCs to be manufactured with differences in their respective dosages and/or drugs. A widely distributed polypill could contain three blood pressure medications at low dose: a diuretic, such as Hydrochlorothiazide, a beta blocker such as Atenolol, and an ACE inhibitor such as Lisinopril; and these could be combined with a statin such as Simvastatin, Aspirin at a dose of 75 mg, and folic acid, which has been shown to reduce the level of homocysteine in the blood, which is another risk factor for heart disease.

CONCLUSION:

In this whole journey, the polypill has wandered and attains acceptability in the pharmacotherapeutic world.

From the studies there is a high favour of the polypill in terms of increasing adherence and decreasing the polypharmacy burden with high blood pressure and dislipidemia in cardiovascular risk patients. According to the trials there is an extent of impact on major CVD events would become evident in the future with a outcomes. It probably leads to increase in acceptability among physicians and healthcare system. Meanwhile strategies were buildup to prevent CVD through judicial use of drugs must be effectively implemented through the healthcare system. The polypill cannot be substitute in system but, can be easily fit into the system. The pros and cons of the above concept can show the higher adherence with reduction in burden of polypharmacy and slight adverse effects can be easily minimized with polypills in coming era .

TREATMENT OF NEUROPATHIC PAIN

N.Sherly Shulamite; SIMS college of Pharmacy, Guntur, Andhra Pradesh.

Introduction

Neuropathic pain comprises a wide range of heterogeneous conditions caused by lesions or diseases of the somatosensory system, either at the peripheral or at the central level. Neuropathic pain is often severe and difficult to manage, resulting in a chronic condition that negatively affects the overall functioning and quality of life in patients. The use of effective therapies to control pain and its consequences are, therefore, of primary importance.

Based on the fact that averaging across all neuropathic pain conditions, approximately 60% of patients had Localized Neuropathic Pain (LNP), definition for LNP based on the International Association for the Study of Pain (IASP): LNP is a type of neuropathic pain characterized by a circumscribed and consistent area of maximum pain .

Clinical Presentations

The blockade of nerve conduction in neuropathic conditions causes nerve dysfunction, which can result in numbness, weakness and loss of the deep tendon reflexes in the affected nerve area. Neuropathic conditions also cause aberrant symptoms of spontaneous, (continuous or intermittent which is commonly described as burning, shooting or shock-like) stimulus-evoked pain (includes allodynia-pain evoked by a non-painful touch) and hyperalgesia (increased pain evoked by a painful stimulus). Allodynia can be caused by the lightest stimulation, such as skin contact with clothing or a light breeze. These sensory abnormalities may extend beyond nerve distributions, which may lead to the inappropriate diagnosis of a functional or

psychosomatic disorder. The diagnosis of neuropathic pain is based primarily on history and findings on physical examination.

Screening and Assessment tools to differentiate neuropathic pain from non-neuropathic pain

i) Leeds Assessment of Neurophic Symptoms and Signs (LANSS)- Patient symptoms are self assessed; Physical exam signs are measured by healthcare professional. S-LANSS (self report-LANSS test is the modified version that allows the patient to perform physical examination.

ii) Neuropathic Pain Questionnaire – Self reported assessment is only tool to incorporate symptoms related to weather changes.

iii) ID Pain- Short and easy to use for patient self assessment.

iv) Standardized Evaluation of Pain- For symptoms and physical assessment, have highest accuracy in diagnosing low back pain and scanning can be completed in 10-15 minutes.

First-Line Drugs for Neuropathic Pain Antidepressants

Antidepressants are among the oldest drugs used for the treatment of neuropathic pain, originally came to be used in the treatment of chronic pain, and in particular neuropathic pain, because some of the patients suffering from chronic pain are also depressed, and these drugs relieve pain as well as depression. Pain relief has since been described in depressed and non-depressed patients with chronic pain. The relief can be more rapid in some patients and appears to occur at a lower dose than the

antidepressant effect. An early concept of the mechanism of antidepressant analgesia was that these drugs are capable of potentiating the activity of the descending inhibitory pathways extending from the brain stem to the dorsal horn of the spinal cord, mainly by inhibiting the re-uptake of serotonin and noradrenaline that descending fibers release into the spinal synapses between nociceptors (or first-order neurons) and the spino-thalamic neurons (or second-order neurons). Alternatively, they can activate interneurons that in turn release inhibitory substances such as endogenous opioids or gamma-aminobutyric acid (GABA), as in the case of serotonin at its metabotropic receptors or noradrenaline at alpha-1 adrenergic receptors. The most effective antidepressants for neuropathic pain appear to be TCAs, in particular desipramine, amitriptyline and its metabolite, nortriptyline, and imipramine, it has been shown that amitriptyline can act as a local anesthetic by blocking voltage-gated sodium channels. TCAs may directly interfere with central sensitization by blocking NMDA receptors in the spinal cord. TCAs have been proven to be efficacious in several neuropathic conditions, including painful polyneuropathy, post-herpetic neuralgia, peripheral nerve injury, and painful diabetic neuropathy.

Duloxetine has shown consistent efficacy in painful diabetic neuropathy and low back pain. Dosing of duloxetine is simple with 60 mg once or twice daily appearing to be equally effective. Nausea is the most common adverse effect of duloxetine, which appears to be reduced by lowering the dosage to 30 mg once daily for 1 week before increasing to 60 mg once daily.

Anticonvulsants Acting at Voltage-Gated

Calcium Channels

Pregabalin and gabapentin are both derived from GABA, but they have no effect on the GABAergic system. Their mechanism of action includes binding to the alpha-2/delta-1 subunit of the voltage-gated calcium channels in several areas of the central nervous system (CNS) and spinal cord. Voltage-gated calcium channels are localized on pre-synaptic terminals, where they control neurotransmitter release. Being voltage-sensitive, they open in response to action potentials arising from the periphery and allow the influx of calcium ions, which is essential for the fusion of synaptic vesicles and release of neurotransmitters into the synaptic cleft. This is the general mechanism by which these channels are involved in neurotransmitter release in the spinal cord and in various areas of the CNS. Voltage-gated calcium channels are comprised of different subunits: the alpha subunit is responsible for the formation of the pore through which calcium ions enter into the cell, whereas the alpha-2/delta-1, beta, and gamma are accessory subunits. The alpha-2/delta-1 subunit is responsible for the trafficking, localization, and stabilization of the channel in the plasma membrane.

In general, pregabalin and gabapentin are well tolerated. The most commonly reported adverse effect of pregabalin is dizziness, followed by somnolence, dry mouth, edema, and blurred vision. For gabapentin, dizziness, somnolence and confusion and peripheral edema. For both drugs, adverse effects are dose-dependent and reversible.

Second-Line and Third-Line Drugs for Neuropathic Pain

Topical Lidocaine

Lidocaine, in the form of 5% patches, was efficacious and had an excellent tolerability profile in patients with post-herpetic

neuralgia and allodynia, as well as in patients with allodynia due to neuropathic pain. Lidocaine blocks voltage-gated sodium channels, because topical lidocaine can penetrate no deeper than 8–10 mm, it is therefore indicated in well-localized neuropathic pain. Its efficacy has been documented in different types of localized neuropathic pain, including post-herpetic neuralgia, painful diabetic neuropathy, post-surgical and post-traumatic pain related to incision of the skin. The most common adverse effects of lidocaine are mild local reactions due to its topical application. Lidocaine's lack of systemic absorption and drug interactions can be particularly beneficial in older patients.

Opioids

Strong opioids, such as morphine, oxycodone, and hydromorphone, and weak opioids, such as tramadol, are efficacious when compared with other drugs used for neuropathic pain. Nevertheless, they have always been considered second-line drugs, and more recently third-line drugs, due to adverse drug reactions and concerns about abuse, diversion, and addiction.

The analgesic effect of opioids is due to their action in the brain, brainstem, spinal cord, and, under certain circumstances, on peripheral terminals of primary afferent neurons. All endogenous opioid peptides, including endorphin, enkephalins, and dynorphins, bind to seven transmembrane G protein-coupled receptors, which are divided into three classes: mu, delta, and kappa receptors. Opioid receptors are coupled to inhibitor G proteins, with receptor activation inhibiting the adenylate cyclase as well as the intracellular production of cAMP. However, the coupling of opioid receptors to calcium and potassium channels is thought

to be a central mechanism of analgesia production by both endogenous and exogenous opioids.

Other Drugs

A number of additional drugs have shown efficacy in the treatment of neuropathic pain, these drugs represent the third or even fourth line of treatment options for neuropathic pain and include specific antidepressants (bupropion) and antiepileptic drugs (carbamazepine, lamotrigine), and topical low-concentration capsaicin. In general, these drugs should be reserved for patients who are unable to tolerate or who fail to respond second-line medications to first-line.

Conclusion

The pharmacotherapy of neuropathic pain is challenging and for many patients effective treatment is lacking. There are several reasons for this, including insufficient knowledge on efficacious drugs and their appropriate use in clinical practice. Neuropathic pain is also associated with interference with sleep, depression, and anxiety that, if not properly treated, will negatively influence the responses to analgesic drugs. Therefore, evidence-based recommendations for the pharmacotherapy of neuropathic pain are essential. On the other hand, comorbidities are also a practical problem, because patients taking drug reactions or therapeutic failure.

Although new innovative molecules are needed for the successful cure of neuropathic pain, a deeper understanding of the mechanism of action of currently available drugs is an essential step towards an effective clinical approach that tailors therapies both to the specific neuropathic disease and to the needs of an individual patient.

PHARMA VISION 2030 : THE INDIAN INDUSTRY – A GLOBAL LEADER

Renny Rozario; Sri Ramakrishna Institute of Paramedical Sciences, Coimbatore, Tamil Nadu.

India's life sciences industry has traversed a successful journey in the past 50 years. From an era of import dependency in the pre-1970s, high-quality local players moved the country toward self-sufficiency in life sciences by the 1990s. Since then, world class capabilities have helped the Indian industry build a strong global presence. In this journey, the industry has achieved several successes and has contributed significantly to the Indian economy and healthcare outcomes, in both India and abroad.

- Significant contributions to the Indian economy: The life sciences industry is now the third-largest contributor in reducing India's merchandise trade deficit. The industry generates around USD 10 billion of trade surplus every year, allowing it to neutralise around 4 to 5 per cent of total energy imports for India. In addition, it also generates a significant number of jobs for India. Our estimates indicate that around 2.5 million people are currently employed by the industry (including some of the industries such as chemists, stockists, etc.).

- Strong position in the global life sciences industry: India has also been able to build a strong position across various segments of the market. In pharmaceuticals, India is now the eighth largest country by value globally with one of the highest growth rates. It has also been able to build a strong position in key markets such as the US. In clinical trials, India continues to be one of the top 15 destinations globally based on the number of trials conducted between 2003 and 2013.

- Contributions in driving access and affordability: Indian industry has been a driver for access and affordability in life sciences. Indian drugs are available at an affordable price as compared to markets globally. Further, India is the primary supplier of essential medicines for numerous diseases, helping save millions of lives globally. India's contribution extends to developed markets such as the US as well, where through its position in the generics market, the industry is significantly reducing healthcare spend.

- World-class capabilities across the value chain: The life sciences industry has also built strong capabilities across all parts of the value chain. In manufacturing, India continues to have the highest number of FDA-approved formulation plants outside the US. In R&D and regulatory, Indian industry has accounted for 32 per cent of the ANDA filings last year, second only to the US at 44 per cent.

The industry is now also making some initial movement in the innovation space. The journey so far has been a source of celebration, but the road ahead for the industry is challenging. There are some positive aspects that brighten the horizon (e.g., strengths that the industry can continue to leverage, and opportunities, if tapped, that could help the industry grow), but new challenges and discontinuities in the market continue to emerge. Three prominent challenges that the industry faces:

- Changing market dynamics: Changes in the market landscape are throwing up new challenges for the industry.

For instance, sources of growth in the market continue to shift to areas where the industry does not have a strong presence today (e.g., emerging markets, complex generics). Prices and margins continue to be under pressure, driven by customer consolidation in developed markets and evolving regulations in few emerging markets. The dynamics of doing business are also undergoing a shift with the recent spate of mergers and acquisitions, increase in importance of scale, and changes in regulatory guidelines, requiring players to build new capabilities to succeed.

- Dilution of some core drivers of success: Much of the credit for India's success historically goes to the advantages that India offered in terms of affordable costs, reliability of supply, and its ability to release products rapidly in market. However, the reality is shifting. Cost position is under threat with players in developed markets becoming more competitive and players in developing markets moving up the value chain. Indian players are facing an increasing number of quality issues, especially for the US, which is affecting its supply reliability. Finally, recent changes in the regulatory landscape are also affecting the ability of Indian players to release products rapidly.

- Gaps in the industry's competitive ability: Changes in market dynamics are also accentuating gaps in the industry's competitiveness, which can have a considerable impact on the industry's ability to sustain its growth in the future. First, growing dependence on imports for KSM/intermediates is a cause of concern. It could lead to issues related to the availability

of essential medicines in the country, impact the cost position and first-to-file capability of Indian players. Second, India's position in the innovation space continues to be nascent driven by gaps across the innovation ecosystem. Given that innovation could represent the next wave of growth for the industry, a weak position in innovation would significantly impact growth outlook for the industry.

These challenges can drag down an industry with immense potential. Our estimates indicate that failing to address these issues could pull the growth rate down to 8 to 10 per cent over the coming years, also impacting the industry's ability to serve the local market and maintain its hard-earned global position. It is, therefore, important at this juncture for the industry and the government to come together and align on a common vision that would help the industry unlock its full potential. In this context, we believe that the industry can aspire towards a vision of "Expanding India's global leadership and relevance, while driving domestic access". The industry can focus on three goals to realize this vision.

1. Become the world's largest and most reliable drug supplier through leadership in cost, quality and development excellence.
2. Provide access to affordable, quality drugs to every Indian and bring latest drugs to Indian market through initiatives by the industry and the government.
3. Establish globally recognized presence for Indian industry in pharma innovation, through industry enterprise and conducive environment created by the government.

By achieving this vision, the industry will continue making significant contribution to the economy and healthcare outcomes:

Sustained economic contribution: Under this vision, the industry will sustain its growth trajectory of 11 to 12 per cent and grow 7 to 8 times to a size of USD 190 billion to 200 billion by 2030. This growth will allow the industry to drive 5 to 6 times growth in trade balance contribution to around USD 55 billion to 60 billion by 2030. This will help neutralize around 13 to 15 per cent of the estimated energy imports for India by 2030. The industry will also create nearly four million new jobs for the country over the next 15 years.

Becoming the world's largest and most reliable drug supplier: The Indian life sciences industry can aspire to become the world's largest supplier of drugs globally by volume and third largest by value. This can be enabled by the leadership position that the industry can secure in the US, and in other emerging markets. Beyond value, the industry will also continue its contribution towards saving millions of lives by maintaining the supply of essential medicines and driving significant reduction in healthcare spend across major markets.

Providing every Indian access to high-quality, affordable drugs, and bringing the latest drugs to India: The industry can work towards a goal of further deepening drug penetration in the Indian market. We believe that by adopting innovative models and government support, the industry can aspire to drive a 3–4 times increase in the number of treated patients across disease areas. The industry can also continue to play a crucial role in ensuring the availability of new

upcoming drugs to Indian patients.

Building a globally recognized position for India in the innovation space: India could adopt an enterprise-led approach to drive innovation, given its strong and dynamic local industry. Under this approach, we believe that the industry can aspire to build a strong innovation pipeline (around 1 NME and 10–12 incremental innovation launches per year by 2030), drive significant economic upside (exports of around USD 16 billion to 18 billion by 2030), and deliver better health outcomes for the country.

To achieve this vision, all the stakeholders have to act on their strengths and provide an enabling environment for the industry to grow. In particular, we believe that the industry could focus on six imperatives to enhance its competitiveness, deepen penetration in existing and new markets, and drive a common agenda to sustain growth:

- Drive innovation at scale by making "smart" choices on the portfolio, building new techno-commercial capabilities, and revamping the operating model (e.g., using new approaches such as adaptive trial design to optimize approach for development)
- Expand presence in emerging markets through a focused approach and by building a "global" supply chain and organization (e.g., focus to build 1-2 "home markets" beyond India, re-configure the manufacturing network)
- Adopt innovative business models to enable deeper penetration and access to drugs even in rural India (e.g., using technology to drive access and lower cost, providing integrated care for patients).

- Upgrade quality systems and infrastructure, and enhance capabilities to maintain India's image of a reliable, high-quality pharmaceuticals supplier (e.g., preventative culture, capability building in the front-line).

- Build new-age capabilities to sustain cost and speed-to-market advantage even across the newly emerging market segments (e.g., using automation and new technology to lower costs; embedding Quality by Design (QbD) to ensure "first time right" dossiers).

Collaborate more meaningfully within the industry to support growth of the industry (e.g., capability building of quality teams across players) The government could consider supporting this journey by creating a conducive environment for the industry to undertake the above actions. In particular, the government could look at four initiatives:

- Build an enabling regulatory environment to facilitate the "ease of doing business" by providing clarity on guidelines in a few areas (e.g., clinical trials, approval pathway for different product categories).
- Help improve quality standards by strengthening the capacity/capability of quality inspectors and harmonising the quality framework with global guidelines.
- Ensure India's self-sufficiency by helping enhance competitiveness of the local API industry (e.g., by setting up a dedicated API/intermediate manufacturing cluster with resource sharing and incentives).
- Create a conducive environment for

innovation by strengthening the local talent/research base (e.g., by reviewing the curriculum in the top 10 to 12 academic institutes) and enhancing incentives for investments in R&D.

Vision 2030 builds on the successful trajectory of the Indian life sciences industry. It lays out the path forward to unlock the industry's true potential. This can become a reality if all the stakeholders collaborate and build on the strengths that would help the sector achieve a higher trajectory.

MATERIOVIGILANCE PROGRAMME OF INDIA

Shaik Rahamthulla; Chebrolu Hanumaiah Institute of Pharmaceutical Sciences, Guntur, Andhra Pradesh.

MEDICAL DEVICES: Medical device is defined as any instrument, equipment, material or other article used on its own or jointly, including software required for it to function correctly, which is intended by the manufacturer to be used on humans for the following purposes :

- for diagnostic, prevention, control, treating or diminishing an illness
- for diagnostic, control, treating, for diminishing or compensating an injury or handicap,
- for studying, replacing or modifying part of the anatomy or a physiological process
- for mastering conception and whose principal intended action in or on the human body is not obtained by pharmacological or immunological means or by metabolism but whose function can be assisted in such a way.

MATERIOVIGILANCE:

Materiovigilance means close monitoring of any undesirable performance or characteristic fluctuations of a medical device by means of a system which is capable of identifying, collecting, reporting with estimate of undesirable occurrences and reacting to them with field safety corrective actions or device recall during post -marketing phase of a Medical Device.

Materiovigilance Programme of India (MvPI)

After several horrific cases of

malfunctioning medical devices, like babies being burnt to death due to short circuits in incubators or hip implants causing blood poisoning etc.

The Ministry of Health and family Welfare (MoHFW) has approved the commencement of "Materiovigilance Programme of India (MvPI)" vide approval dated 10/02/2015 in an effort to ensure safety of medical devices.

MvPI has been launched by Drug Control General of India on 6 th July 2015 at Indian Pharmacopoeia Commission (IPC) Ghaziabad.

IPC Ghaziabad functions as National Coordination Centre for MvPI.

Sree Chitra Tirunal Institute of Medical Sciences & Technology (SCTIMST), Thiruvananthapuram, functions as National Collaborating Centre for MvPI.

Technical support will be provided by National Health System Resource Centre (NHSRC) for MvPI.

OBJECTIVES OF MvPI:

- To create a nationwide system for patient safety monitoring
- To analyze the risk-benefit ratio of medical devices uses
- To generate evidence-based data on the safety of medical devices
- To support CDSCO in the decision-making process on the use of medical devices.

- To communicate the safety information on the use of medical devices to various stakeholders to minimize the risk
- To emerge as a national center of excellence for materiovigilance activities
- To collaborate with other healthcare organizations and international agencies for the exchange of information and data management.

The purpose of Materiovigilance is to study and follow incidents that might result from using medical devices.

It enables dangerous devices to be withdrawn from the market and to eliminate faults in medical devices with the intention of constantly improving the quality of devices and providing patients and users with increased safety.

What can be reported :

- Any dysfunction or any change of the characteristics and/or performance of a device, any inadequacy in the labeling or instructions, which might lead to death or serious relapse in the state of health of a patient, a user or a third party.
- Any technical or medical reason related to the characteristics or performance of a device.
- Not only serious incidents but also the cases where there was a risk of a serious incident but that incident was avoided due to the attention and action of the relevant people

Where to Report :

Duly filled Medical Device Adverse Event Reporting Form can be send to Sree Chitra Tirunal Institute of Medical Science and Technology (SCTIMST), National Collaboration Centre-Materiovigilance Programme of India, Biomedical Technology Wing, Poojappura, Thiruvananthapuram 695012, Kerala, India. Or

- Directly email the duly filled form to mvpi@sctimst.ac.in. Or
- Call on Toll free Helpline no. 1800 180 3024 to report Adverse event.
- mvpi.ipcindia@gmail.com
- Medical Device Adverse Event

Monitoring Centres (MDMCs): There are many MDMCs all over the country in different states like Karnataka, Chandigarh, Punjab, Delhi, West Bengal, Uttar Pradesh, Puducherry, Tamilnadu, Rajasthan, Bihar, Kerela, Odisha, Andhra Pradesh, Madhya Pradesh.

Conclusion :

Given that many countries do not have a Post-Market surveillance/vigilance programme; it is desirable that a beginning is made. Although a complex science in itself, requiring support of many domains including clinical medicine as well as clinical engineering/biomedical engineering, capacities exist in countries to promote safe and

ROLE OF PHARMACIST IN PATIENT COUNSELLING

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INTRODUCTION

According to the Joint International Pharmaceutical Federation (FIP)/World Health Organization (WHO) guidelines for good pharmacy practice, the mission of pharmacy practice is to "contribute to health improvement and to help patients with health problems to make the best use of their medicines". Pharmacist-led counselling is an important service that has been associated with improved clinical outcomes, quality of life, drug/disease knowledge, satisfaction, and reduced health service utilization among patients.

There is no accepted definition of counselling. According to Puspitasari et al., researchers either operationally define counselling or refer to specific counselling guidelines in the literature. Pharmacy researchers operationally define counselling as giving advice or providing information on medications, while others focus more on the goal of counselling, i.e. ensuring that patients understand the optimal use of medications to improve their quality of life. In a review focusing on the conceptualization and measurement of pharmacist-patient communication, Shah and Chewing discuss the differences in counselling definitions between the professional counselling literature and other published pharmacy literature. The professional counselling literature, represented by an international interdisciplinary journal, defines

counselling as an "individualized process involving guidance and collaborative problem solving to help the patient better manage their health problems", while other published pharmacy literature uses the term "counselling" to refer to the provision of information regarding how to take the drug product properly. Furthermore, the terms "communication", "counselling", "education", and "information provision" have been used interchangeably in the literature, disregarding subtle differences in their meaning. Patient education, for example, is defined as "a planned learning experience using a combination of methods such as teaching, counselling, and behavior modification techniques that influence patients knowledge and behavior". Thus, according to this definition, counselling is an aspect of patient education.

In addition to dispensing prescription and non-prescription medications, community pharmacists have great potential to be the first contact for patients seeking treatment for minor ailments. Community pharmacists also have an increasing role in public health through the promotion of healthy lifestyles. Pharmacist-patient interactions in the community setting may also address diet, device use, exercise, referrals, or other non-medication issues. The community setting offers many advantages, such as long opening hours, accessibility, and familiarity.

Studies investigating the counselling practices of community pharmacists have indicated that their elicitation of information prior to supplying medicine, detection of drug interactions, and counselling content are of sub-optimal quality. Counselling in a community setting is a complex process, which may explain the poor quality of community counselling practices.

Previous reviews have examined the impact of community pharmacy services, such as counselling, on patient outcomes, quality of counselling, verbal counselling rates, types of information provided during counselling, and the conceptualizations, definitions, and measurements of pharmacist-patient communication in the community setting. Few studies, however, have examined interventions to improve community pharmacy services. Patwardhan et al. reviewed literature published up to 2010 on interventions for enhancing community pharmacists' cognitive services, defined as professional services provided by pharmacists to a patient that are either judgmental or educational in nature. Watkins searched six databases up to 2014 for literature on implementation strategies for clinical guidelines to community pharmacy and their impact on the quality of care provided by community pharmacists, such as adherence to recommended practices or guidelines. In December 2017, Seubert et al. published a review of literature published between 2000 and 2017 on interventions aimed at improving communication between consumers and

pharmacy personnel during consultations for medicines that are provided without a prescription.

These reviews focused on general cognitive services rather than on counselling specifically; on specific interventions, such as guidelines; or on specific groups of medications. To date, however, no systematic reviews have focused on interventions for improving counselling in different situations, including prescription and non-prescription medications, consultations for minor ailments, and health promotion. Given the suboptimal quality of counselling noted earlier, we need to close the gap in knowledge regarding which interventions might lead to optimal counselling in the community setting.

The primary aim of this review was to identify, describe, and determine the effectiveness of interventions for improving the counselling practice of community pharmacists. The secondary aim was to provide recommendations for future studies due to the evidence gap identified in this review. In this review, "counselling" is used as a broad umbrella term that encompasses all definitions outlined in the background section.

OBJECTIVES

1. Patient should recognize the importance of his well being.
2. A working relationship and a foundation for continuous interaction and consultation should be established.
3. Patient understanding of strategies to deal with medication side effects and

- drug interaction should be improved.
4. Should ensure better patient compliance.
 5. Patient becomes an informed, efficient and active participant in disease treatment and self-care management.
 6. Pharmacist should be perceived as a professional who offers the pharmaceutical care.
 7. Drug interactions and adverse drug reactions should be prevented.

IMPORTANCE OF PHARMACIST

Medicines play an important role in medical care and effectiveness of treatment depends on both the efficacy of medication and patient adherence to the therapeutic regimen. Adherence to medications (AMs) is essential to achieve the best possible pharmacotherapy outcomes. Evidence shows that non-AMs result in higher health care costs, longer hospitalization, and increased morbidity and mortality.

On the other hand, hospitalization and subsequent discharge home are high-risk periods for potential medication confusion and errors and often involve discontinuity of care, multiple changes in medication regimens, and inadequate patient education, which can lead to adverse drug events (ADEs) and avoidable health care utilization. Patient's transition from hospital to home, subsequently changes to their previous medication regimens, and also non-adherence to prescribed medication after discharge are common during these transitions of care and increase the risk of post-discharge complications.

It has been reported that one in five hospitalizations is complicated by post-discharge adverse events, and 66% of these events are related to medications.

Numerous factors have been identified to affect AMs, including cognitive impairments, lack of understanding and knowledge about health condition, higher prevalence of chronic diseases, higher number of prescription and nonprescription medications, complexity of the regimen and poor access to medicines, poor provider-patient communication, inadequate knowledge about a drug and its use, not being convinced of the need for treatment, fear of adverse effects of drug, and finally long-term drug regimens. In addition, 33-69% of medication-related hospital admissions in the United States are due to medication non-adherence with a result in cost of approximately \$100 billion per year.

Medication adherence is a complex behavior which can be influenced by patients, providers, and health system factors. A single method cannot improve medication adherence. Instead, a combination of various adherence techniques should be implemented to improve patient's adherence to their prescribed treatment. Several interventions including reminder systems, follow-up programs by health care providers, and information technology tools have been developed to overcome patient and health care provider-related barriers.

Pharmacists are poised to play an important role in improving medication management during transitions of care and reducing readmission rates. Pharmacist's interventions (also known as pharmaceutical care plans) are means of solving the drug therapy problems identified in pharmaceutical care. Pharmaceutical care requires direct relationship between a pharmacist and an individual patient.

Pharmacists responsibility is to optimize patient's medication therapy. In order to that, they have the potential to educate patients about the importance of continued therapy and adherence at home also to resolve any uncertainties that patients may have regarding their medications. Patient's medication discharge counseling provides an opportunity for pharmacists to improve patients' therapeutic outcomes. Pharmacist follow-up after discharge has mixed effects on Emergency Department (ED) visits, hospital readmission, and costs. Our objectives were to identify the effect of patient counseling at discharge and their follow-up by pharmacists on treatment outcomes.

STEPS TO EFFECTIVE PATIENT COUNSELLING

Although every pharmacist implements individualized techniques to counsel patients, various skills are vital to successful pharmacist. Following are 10 features of effective patient counseling:

1. Establish Trust

Pharmacists are among the most accessible and trusted health care

professionals. When initiating a patient counseling session, pharmacists should introduce themselves with a brief, friendly greeting to make patients feel comfortable enough to ask questions about their medication therapies and health conditions.

2. Communicate Verbally

Pharmacists can encourage dialogue by asking questions. They should assess what the patient already knows about his or her chosen therapy and tailor the counseling to meet the needs of each individual patient.

3. Communicate Nonverbally

In addition to verbal communication, it is essential for pharmacists to be aware of nonverbal communication, such as maintaining eye contact with the patient, to demonstrate interest in the information the patient is relaying.

4. Listen

When counseling patients about medication therapy, listening to the concerns, questions, and needs of the patient is essential. Listening skills can be categorized into 4 classes: passive listening, acknowledgment responses, encouragement, and active listening.

5. Ask Questions

When posing questions to the patient, pharmacists also should state the reason for asking certain questions, so as not to offend the patient.^{6,7} Asking open-ended questions enables pharmacists to gather more information that may lead to other questions and/or provide valuable information to the pharmacist to further assess the patient.

6. Remain Clinically Objective

It is important for pharmacists not to allow personal beliefs either ethical or religious to affect their ability to counsel a patient effectively.

7. Show Empathy and Encouragement

When a pharmacist displays empathy and encouragement, a patient may feel more comfortable discussing his or her medical condition and medication use, thus enabling the pharmacist to obtain pertinent information on the patient's needs and concerns.

8. Tailor Counseling to Meet Patient Needs

The ability to tailor patient counseling to meet individual needs is critical. Pharmacists should be aware of patients with disabilities and be prepared to treat them with respect and understanding.

10. Motivate Patients

Effective counseling not only provides patients with the pertinent information they need to use their medication correctly, it also motivates them to adhere to their medication regimens. Pharmacists can motivate patients by discussing the benefits of medication adherence, offering support, and explaining the pros and cons of treatment.

CONCLUSION

It is impossible to counsel every patient. Whereas the use of written counseling information can be beneficial, it does not replace the interaction between the pharmacist and the patient. Pharmacists should seize every opportunity to counsel patients about their treatment regimens and ensure that patients clearly understand the proper use of their medication. Establishing caring relationships encourages patients to seek counsel, thus increasing the likelihood of positive therapeutic outcomes. Every time a pharmacist takes the opportunity to counsel patients, he or she empowers patients with the information necessary to impact the quality of their health. Although every pharmacist has a different perception of what patient counseling should entail, all pharmacists should strive for one goal when counseling patients: to ensure that patients are well informed about the proper use of their medications.

The patient counseling by pharmacists also enables the doctors to spend more time on examination and diagnosis the patients as the counseling part is taken care of by the pharmacist. It also helps in many ways to improve the quality of healthcare system with better patient care and therapeutic outcome.

SPECIAL EDITON ON CORONAVIRUS

Human coronaviruses (HCoV) were first identified in the 1960s in the noses of patients with the common cold. Two human coronaviruses are responsible for a large proportion of common colds OC43 and 229E.

Coronaviruses were given their name based on the crown-like projections on their surfaces. "Corona" in Latin means "halo" or "crown."

Among humans, infection most often occurs during the winter months as well as early spring. It is not uncommon for a person to become ill with a cold that is caused by a coronavirus and then catch it again about four months later.

This is because coronavirus antibodies do not last for a very long time. Also, the antibodies for one strain of coronavirus may be useless against other strains.

Symptoms

Cold- or flu-like symptoms usually set in from two to four days after coronavirus infection, and they are typically mild. However, symptoms vary from person to person, and some forms of the virus can

be fatal. Symptoms include:

- sneezing
- a runny nose
- fatigue
- a cough
- in rare cases, fever
- a sore throat
- exacerbated asthma

Human coronaviruses cannot be cultivated in the laboratory easily, unlike the rhinovirus, another cause of the common cold. This makes it difficult to gauge the coronavirus' impact on national economies and public health.

There is no cure, so treatments include taking care of yourself and over-the-counter (OTC) medication:

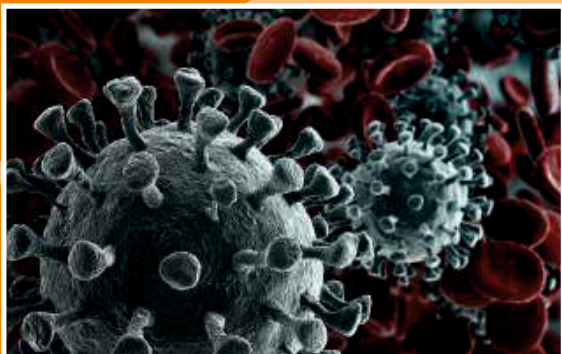
- Rest and avoid overexertion.
- Drink enough water.
- Avoid smoking and smoky areas.
- Take acetaminophen, ibuprofen or naproxen to reduce pain and fever.
- Use a clean humidifier or cool mist vaporizer.

The virus responsible can be diagnosed by taking a sample of respiratory fluids, such as mucus from the nose, or blood. Different types of human coronaviruses vary in the severity of illness they cause and how far they can spread.

There are currently seven recognized types of coronavirus that can infect humans.

Common types include:

- 229E (alpha coronavirus)
- NL63 (alpha coronavirus)



- OC43 (beta coronavirus)
- HKU1 (beta coronavirus)

Rarer, more dangerous types include MERS-CoV, which causes Middle East Respiratory Syndrome (MERS), and severe acute respiratory syndrome (SARS-CoV), the coronavirus responsible for SARS. In 2019, a dangerous new strain started circulating, but it does not yet have an official name. Health authorities are currently referring to it as 2019 Novel Coronavirus (2019-nCov).

There has not been a great deal of research on how a human coronavirus spreads from one person to the next. However, it is believed that the viruses transmit using secreted fluid from the respiratory system.

Coronaviruses can spread in the following ways:

- Coughing and sneezing without covering the mouth can disperse droplets into the air, spreading the virus.
- Touching or shaking hands with a person that has the virus can pass the virus from one person to another.
- Making contact with a surface or object that has the virus and then touching your nose, eyes, or mouth.
- On rare occasions, a coronavirus may spread through contact with feces.

People in the US are more likely to contract the disease in the winter or fall. The disease is still active during the rest of the year. Young people are most likely to contract a coronavirus, and people can

contract more than one infection over the course of a lifetime. Most people will become infected with at least one coronavirus in their life.

It is said that the mutating abilities of the coronavirus are what make it so contagious.

To prevent transmission, be sure to stay at home and rest while experiencing symptoms and avoid close contact with other people. Covering the mouth and nose with a tissue or handkerchief while coughing or sneezing can also help prevent the spread of a coronavirus. Be sure to dispose of any used tissues and maintain hygiene around the home.

2019-nCov

In 2019, the Centers for Disease Control and Prevention (CDC) started monitoring the outbreak of a new coronavirus. Authorities first identified the virus in Wuhan, China. They have named it 2019 Novel Coronavirus (2019-nCov).

More than 1,000 people have contracted the virus in China. Health authorities have identified several other people with 2019-nCov around the world, including five individuals in the United States. On January 31, 2020, the virus passed from one person to another in the US. The World Health Organization (WHO) have declared a public health emergency relating to 2019-nCov.

Some of the first people with 2019-nCov had links to an animal and seafood market. This initially suggested that animals transmit the virus to humans.

However, people with a more recent diagnosis had no connections with or exposure to the market, suggesting that humans can pass the virus to each other.

Information on the virus is scarce at present. In the past, respiratory conditions that develop from coronaviruses, such as SARS and MERS, have spread through close contacts.

However, while some viruses are highly contagious, it is less clear with coronaviruses as to how rapidly they will spread.

Symptoms vary from person to person with a 2019-nCov infection. It may produce few or no symptoms. However, it can also lead to severe illness and may be fatal. Common symptoms include:

- fever
- breathlessness
- cough

It may take 2–14 days for a person to notice symptoms after infection.

No vaccine is currently available for 2019-nCov. However, scientists have replicated the virus. This could allow for early detection and treatment in people who have the virus but are not yet showing symptoms.

SARS

Severe acute respiratory syndrome (SARS) was a contagious disease caused by the SARS-CoV coronavirus. It typically led to a life-threatening form of pneumonia.

The virus started off in the Guangdong Province in southern China in November 2002, eventually reaching Hong Kong. From there, it rapidly spread around the world, infecting people in 37 countries.

SARS-CoV is unique. It can infect both the upper and lower respiratory tract and can also cause gastroenteritis.

The symptoms of SARS develop over the course of a week and start with a fever. Early on in the condition, people develop flu-like symptoms, such as:

- dry coughing
- chills
- diarrhea
- breathlessness
- aches

Pneumonia, a severe lung infection, may develop afterward. At its most advanced stage, SARS causes failure of the lungs, heart, or liver.

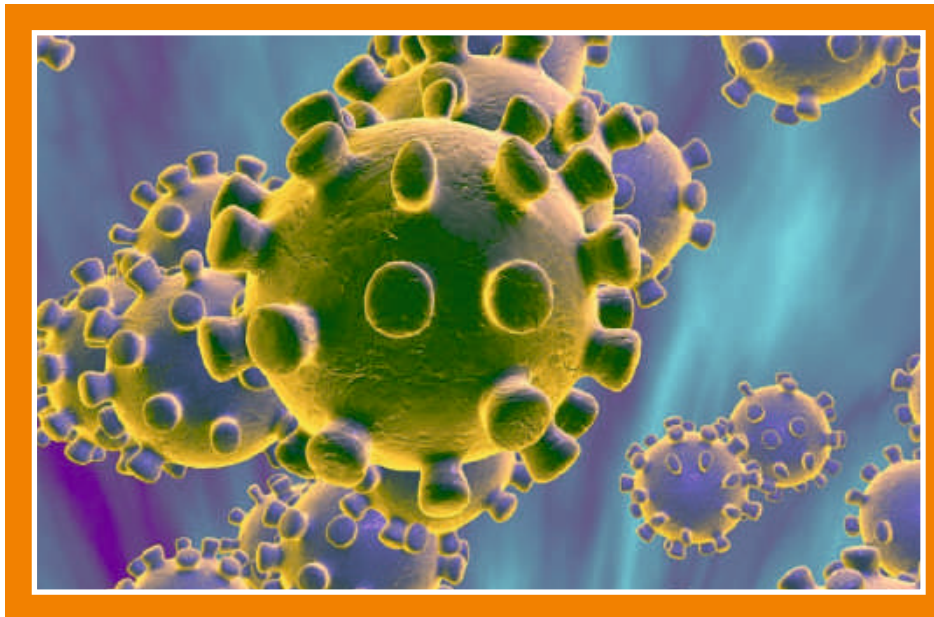
During the epidemic, there were 8,098 confirmed cases of SARS with 774 fatalities. This is equal to a mortality rate of 9.6 percent. Complications were more likely in older adults, and half of all infected people over the age of 65 years who became ill did not survive. It was eventually brought under control in July 2003.

MERS, caused by the MERS-CoV coronavirus, was first recognized in 2012. This severe respiratory illness first surfaced in Saudi Arabia and, since then, has spread to other countries. The virus

has reached the U.S., and the largest outbreak outside the Arabian Peninsula occurred in South Korea in 2015.

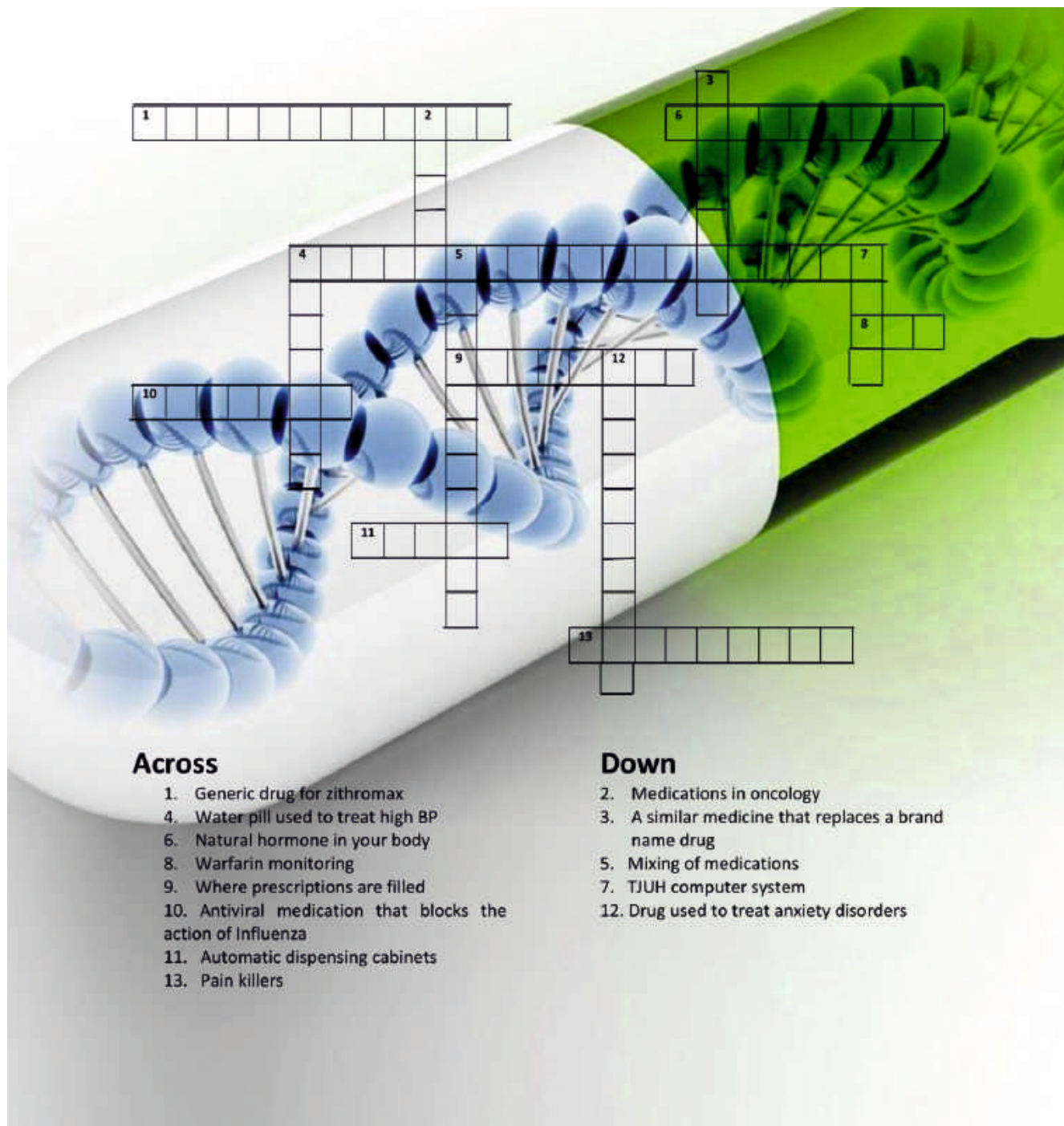
Symptoms include fever, breathlessness, and coughing. The illness spreads through close contact with people who have already been infected. However, all cases of MERS are linked to individuals who have recently returned from travel to the Arabian Peninsula.

MERS is fatal in 30 to 40 percent of people who contract it.



Challenge Your Mind.....

Puzzle Time.



Across

- 1. Generic drug for zithromax
- 4. Water pill used to treat high BP
- 6. Natural hormone in your body
- 8. Warfarin monitoring
- 9. Where prescriptions are filled
- 10. Antiviral medication that blocks the action of Influenza
- 11. Automatic dispensing cabinets
- 13. Pain killers

Down

- 2. Medications in oncology
- 3. A similar medicine that replaces a brand name drug
- 5. Mixing of medications
- 7. TJUH computer system
- 12. Drug used to treat anxiety disorders

Rattle Your Brain.....Quiz Time.

1. Which of the following capsule sizes has the smallest capacity?

- A. 5
- B. 4
- C. 0
- D. 000

2. The solution used to rinse vagina is called as:

- A. Douches
- B. Irrigation
- C. Enema
- D. Diluent

3. Iodine is stored in

- A. Thyroid gland as thyroglobulin
- B. Liver
- C. Intestine
- D. Skin

4. The most important function of a gene is to synthesize

- A. Enzymes
- B. Hormones
- C. RNA
- D. DNA

5. Which one of this following properties is applicable to suspension?

- A. Brownian movement
- B. Laminar flow
- C. Stokes' law
- D. Rapid rate of sedimentation

6. The therapeutic index of a drug is a measure of its

- A. Safety
- B. Efficacy
- C. Potency
- D. Dose variability

7. Antibodies are produced from

- A. T-cells
- B. NK cells
- C. B-cells
- D. Eosinophils

8. The optical amino acid is

- A. Glycine
- B. Threonine
- C. Serine
- D. Valine

9. Transgenic animals improve the quality of

- A. Milk
- B. Eggs
- C. Meat
- D. All of the above

10. Vitamin K is found in

- A. Fish
- B. Green leafy plants
- C. Meat
- D. Milk

11. The percentage of sucrose in simple syrup is

- A. 65.8% w/w
- B. 66.7% w/w
- C. 66.8% w/w
- D. 65.6% w/w

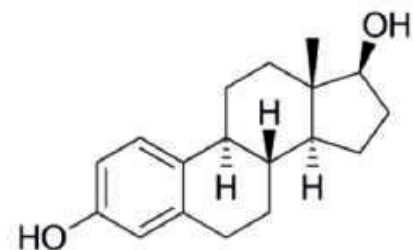
12. For an ideal suspension, the sedimentation volume should be:

- A. Equal to one
- B. Less than one
- C. More than one
- D. Zero

13. Which compound is a natural emulsifying agent?

- A. Acacia
- B. Polysorbate 20
- C. Lactose
- D. Polysorbate 80

14. The following hormone is classified



- A. An androgen
- B. An estrogen
- C. A progestin
- D. A gonadotropin

15. Milk sugar is known as:

- A. Fructose
- B. Glucose
- C. Lactose
- D. Sucrose

Student Exchange Programme

**"Sail away from the safe harbor. Catch the trade winds in your sails.
Explore Dream Discover"**

Student exchange programme Need of the Hour!!

1. Students nowadays are more interested to do internships be a small one month or two month internship or a year long one in other reputed countries such as Canada, USA, Middle East etc.

2. These internships help provide students with valuable certificates which will add value in their C.V and also provide them with a platform at global level which will help them understand global scenario.

3. Potential students should be short-listed based upon their academic excellence and other capabilities, will and interest for such programmes.

4. Mostly the summer and winter breaks can be chosen as the time for such programmes to occur.

5. In India as well if good relations are established in top reputed pharmacy colleges across India then such programmes can be conducted here as well in India.

6. These programmes could be a one

month, two month, six month, nine month or year long internships. (stipend can be provided to students for same for making it more appealing and valuable)

7. These could be just exchange programme between two colleges or universities wherein IPASF can be a bridge or mediator between those two institutes, for spreading the network.

8. IPASF can do many such programmes if MOUs are signed by foreign institutes and that way students can become members of the prestigious organisation as well.

9. Like membership drive, student exchange programme drives in various colleges across India for giving each student chance to participate for the same.

10. Effective budget that can be student friendly can be devised at the first place.

Upcoming Events

fip MONTREAL PSWC 2020
Montreal, Canada
22-27 May 2020

FIRST REGISTRATION DEADLINE: 30 FEBRUARY 2020

7th FIP Pharmaceutical Sciences World Congress

Forthcoming FIP events....

8th FIP World Congress of Pharmacy and Pharmaceutical Sciences
Seville, Spain
13-17 September 2020

The technological revolution - impact on pharmacy and health care

fip 8th FIP WORLD CONGRESS OF PHARMACY AND PHARMACEUTICAL SCIENCES

FIP REGIONAL CONFERENCE FOR SOUTH EAST ASIAN AND THE ASIAN PACIFIC REGION & PIT IAI
1-3 April 2020, Bali

FIP REGIONAL CONFERENCE
'Achieving health for all: Pharmacy optimising primary health care through digital technology'

Save the Date
Bali, Indonesia
1-3 April 2020

Register here: http://www.iaf.id/fip_pit2020

FIP Regional Conference for South East Asian and the Asian Pacific Region & PIT IAI 1 - 3 April 2020, Bali

FIP REGIONAL CONFERENCE
'Achieving health for all: Pharmacy optimising primary health care through digital technology'

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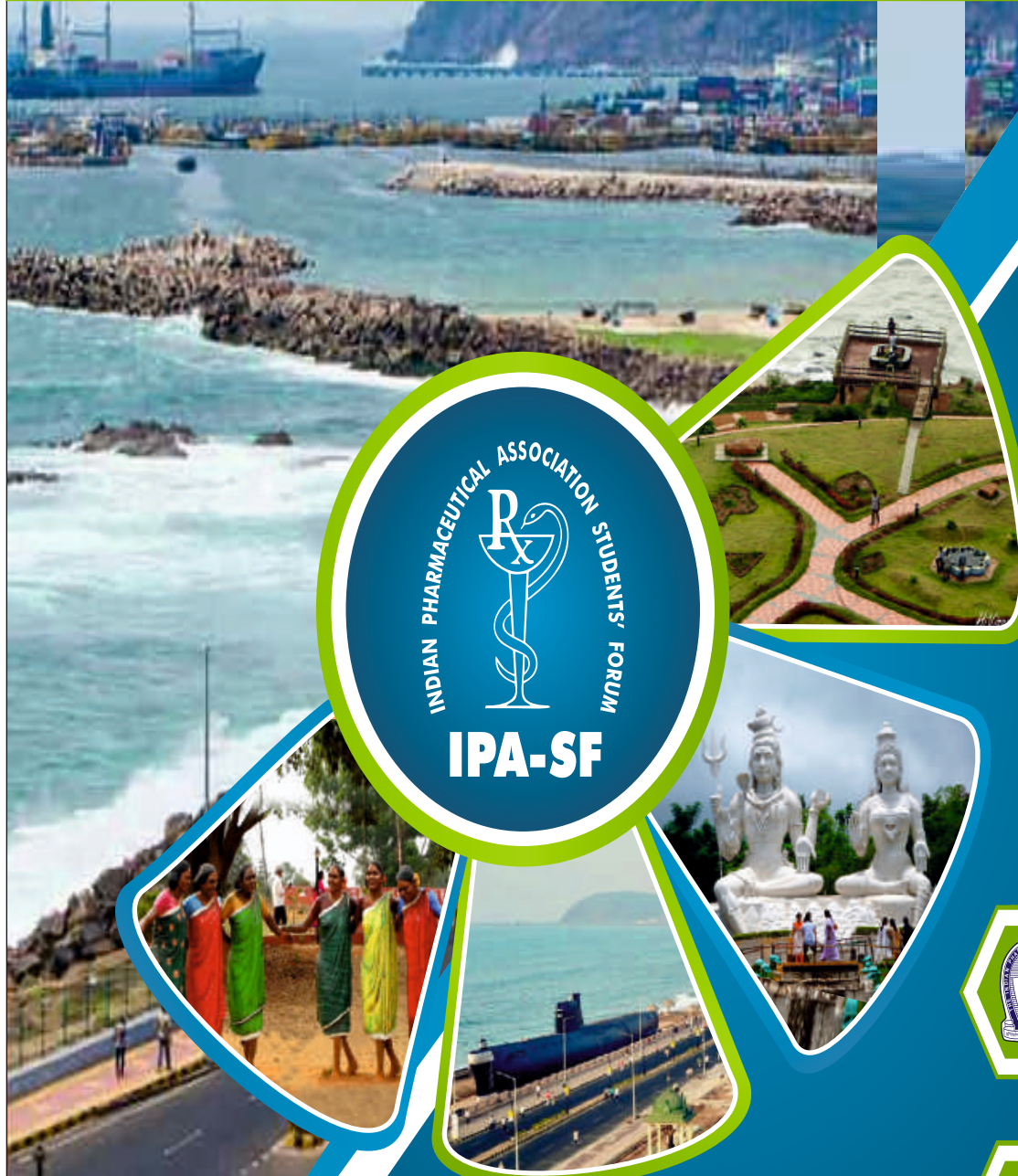


Indian Pharmaceutical Association

28 - 29, February 2020 (Friday - Saturday)

Venue : Vignan Institute of Pharmaceutical Technology, Duvvada, Visakhapatnam, Andhra Pradesh
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