PHARMACY PRACTICE

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DEPARTMENT OF PHARMACY PRACTICE

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News Letter

FIDUCIARY

(Latin meaning: confidence/trust)

Dr Jerry Jacob Manjooran M.S (Ortho) Consultant Orthopaedic Surgeon

There is a lot of healing power in the caregiver. Patient alliance working together offers the opportunity to improve patient's quality of life and health status.

The bond of trust between the patient and caregiver is vital to all diagnostic and therapeutic process. The model of healthcare in the 20th century has evolved towards a shared decision making. Patients are allowed to check the benefits and risks of treatments available including the alternatives of taking no treatment. A vital part of today's treatment is student caregivers.

Student care givers may feel uncertain about their role in patient care. Building trust requires honesty. Students must be honest about their role in letting the patient know she is a caregiver in training. Many patients appreciate the opportunity to work with student caregivers. They usually have more time to spend with a patient, listening to patient's health concern and history. Patients notice and appreciate this extra concern. The caregiver patient relationship holds a large healing power not only for the patient but also for the entire family. For example a simple form of introduction would "hello, I am Antony, I am 3rd year student who is a part of the team that will care for you during the hospitalization. I would like to hear what brought you to this hospital"

As students you will encounter many positive role models during your medical training. Moreover you will also see behaviors and actions that are troubling or unethical. Approaching the offending person honestly with simple questions and open a dialogue with him may solve the problem. In other instances discussing with a senior may solve the problem easily.

Communication is another important aspect of patient treatment.General approaches are useful to facilitate open communication with a patient.

- Sit down
- Let patient be comfort
- Establish eye contact
- Listen without interrupting
- Explain and reassure during examination

The Doctor –Pharmacist Relationship

The pharmacist is in a key postion to report and educate prescribers about the drug strengths and practice guidelines as reference materials with standardised protocols.

In some cases doctors can prescribe therapeutic counseling by the pharmacist in order to educate the patients properly. The pharmacist can act as an advocate for patients in acquiring drugs specially for patients who cannot afford them as to direct them to other cheaper sources. Patient counseling and guidance is a very integral part of and bring a care giver close to the patient.

DEPARTMENT ACTIVITIES

Seminars

In connection with Pharmacist day Celebrations Department of Pharmacy Practice organized a seminar on "Inhalation technique counselling" on 5th October 2015. The resource person was Mr. Umamaheswaran, clinical pharmacist, Department of Pulmonology, KMCH hospital, Coimbatore

Antibiotic awareness week

Department of pharmacy practice took up the call by WHO to conduct antibiotic awareness week and organized various programs from 16-11-2015 to 20-11-2015. The various activities included were

- Antibiotic awareness classes in community and schools on 16-11-15 and 17-11-15 respectively.

- Quiz programmme for the students on the topic "antibiotics" on 19-11-15.

- A survey on antibiotic awareness among public on 16-11-15.

- Poster competition for the students on the topic "responsible use of antibiotics" on 17-11-15

- Seminars on various aspects of antibiotics for students of St. James College of Pharmaceutical Sciences on 20-11-15

- Slide presentation on antibiotics for out patients of St.James Hospital on 18-11-15.

World AIDS day

On world AIDS day (01-12-15), St. James College of Pharmaceutical Sciences and AWARD Bhavan, Chalakudy, jointly organized “Bhodhi 2015”. Our staff and students actively participated in AIDS awareness rally and flash mob conducted at Chalakudy town.

Patient counselling

Well trained pharmacist provided counselling to selected in-patients and out-patients to improve the medication adherences and therapeutic outcome especially in conditions like Diabetes Mellitus,Peptic ulcer,Asthma and Hypertention.

Patient Counselling Data Analysis

WARD	DIABETES MELLITUS	HYPERTENSION	PEPTIC ULCER	BRONCHIAL ASTHMA
GENERAL	19	11	4	10
SURGERY	5	5	3	4
GYNECOLOGY	1	1	1	1
ORTHOPAEDIC	6	6	3	4
CARDIAC	7	3	2	2

Drug Information

MECHANISM OF ACTION	INDICATION	ADVERSE DRUG REACTION	GENERAL	DOSE	INTERACTIONS
5	6	2	8	2	2

ADVERSE DRUG REACTION

The following are some of the adverse drug reactions either reported to or detected by the department of pharmacy practice

DRUGS	ROUTE	NATURE OF ADR
CEFTRIAXONE	I.V	ITCHING
CEFAZOLINE SODIUM	I.V	VOMITING,RASHES
PIPERACILLIN+TAZOBACTUM	I.V	DIARRHOEA
PARACETAMOL	ORAL	RASHES
LINEZOLID	ORAL	MOUTH ULCER
CIPROFLOXACIN	I.V	ITCHING,RASHES
AMPICILLIN	ORAL	SHIVERING,FEVER,HYPOTENSION

HIGHLIGHTS

SEMINARS & CONFERENCES

1. Dr.L.Panayappan Delivered A Talk On "National Conference Of Pharmacovigilance And Pharma-coeconomics" On 27th June 2015 At PSG College Of Pharmacy, Coimbatore
2. A Talk Was Delivered by Dr.L.Panayappan On "Pharmacy Practice - Community And Trade" On 1st October 2015At Nirmala College Of Pharmacy, Muvattupuzha

3. Dr.L.Panayappan ParticipatedIn Preconference Workshop On "WHO ATC/DDD Methodology And Drug Utilization Research"On 2nd And 3rd November 2015 At New Delhi
4. MPharm Students Attended A Seminar On " Continuing Education On Clinical And Pharmacy Practice Services" Held At National College Of Pharmacy On December 9th-11th 2015.
5. Dr.K.Krishnakumar,Principal,St.James College Of Pharmaceutical SciencesDr.L.Panayappan,Head Of Department,Department Of Pharmacy Practice,St.James College Of Pharmaceutical Sciences,PharmD Students Attended 67th IPC Held At JSS ,Mysore From December 19th-21st 2015 .Chinnu Jerald Of Fifth Pharm D Participated In IPC-NEC,2015 On The Topic "Pharmacist For Better Tomorrow" And Bagged First Prize.
6. Third year Pharm D (P.B) And Fifth Year Pharm.D Students Participated In "International Conference On Evolving Role Of Clinical Pharmacist In Multidisciplinary Healthcare Settings" Held On January 8th-9th, 2016 By Department Of Pharmacy Practice,Manipal College Of Pharmaceutical Sciences.Arathy Joy of Third Year Pharm D (P.B) Presented A Poster On" A Comprehensive Study On The Role Of Various PPIS In Preventing NSAID Induced GI Complications".

PUBLICATIONS

1. Treesa P. Varghese, L.Panayappan, K. Krishnakumar, Lincy George. A prospective study on risk factors, angiographic severity and their correlation with STEMI and NSTEMI in patients with acute coronary syndrome. Journal of Harmonized research in medical & health Sciences, 2015; 2(1): 01-05.
2. Anumol Saju, Krishnakumar K, Panayappan L, Lincy George. Role of Multimodal Analgesia in Postoperative Pain Management. World J Pharm Sci 2015; 3(8): 1-4
3. Alphi John, Krishnakumar K, Panayappan L, Leo Mathew. Review on Chronic Renal Failure And Its Treatment: Hemodialysis. World Journal of Pharmaceutical Research, 2015; 2(4): 2517-2527.
4. Shidhin Babu K.S, K. Krishnakumar, L. Panayappan, Meppil Baby. Antibiotics a boon to Lower Respiratory Tract Infections (LRTIs) - A Review. Current Research in Medicine and Medical Sciences, 2015, 2(3): 1-5.
5. Jashila PJ, K. Krishnakumar, L. Panayappan, K. Jayapraksah. Empowerment and Self-Management of Diabetes. European Journal of Pharmaceutical and Medical Research, 2015; 2(4):
6. Amulya K Mohan, K. Krishnakumar, L. Panayappan, Rosmin Jacob. A review on asthma-COPD overlap syndrome. World Journal of Pharmacy And Pharmaceutical Sciences, 2015; 4(8): 1.5.
7. Jimimol Thomas, K. Krishnakumar, L. Panayappan, K. Jayapraksah. Atherogenic Dyslipidemia andits Management in Diabetes. Sch. Acad. J. Pharm., 2015; 4(4): 245-248.
8. Aparna Thomas, Krishnakumar K, Panayappan L, Leo Mathew. Diagnostic and Treatment options of Hepatorenal syndrome in cirrhosis. European Journal of Pharmaceutical and Medical Research, 2015; 2(4):
9. Tiny Rose, K. Krishnakumar, L. Panayappan, Rosmin Jacob. Brain Natriuretic Peptide (BNP) In Congestive Heart Failure - A Review. International Journal of Health Sciences & Research, 2015; 5(8): 1-3.

FDA APPROVED DRUG LIST

NO.	DRUG NAME	ACTIVE INGREDIENT	DATE	WHAT IT'S USED FOR
1	BASAGLAR	INSULIN GLARGINE	12/16/2015	DIABETES TYPE 1, DIABETES TYPE 2
2	BRIDION	SUGAMMADEX	12/15/2015	REVERSAL OF NONDEPOLARIZING MUSCLE RELAXANTS
3	OTIPRIO	CIPROFLOXACIN	12/10/2015	PEDIATRIC PATIENTS WITH BILATERAL OTITIS MEDIA
4	BENDEKA	BENDAMUSTINE HYDROCHLORIDE	12/07/2015	CHRONIC LYMPHOCYTIC LEUKEMIA, NON-HODGKIN'S LYMPHOMA
5	FLUAD	INFLUENZA VACCINE	11/24/2015	INFLUENZA PROPHYLAXIS
6	NARCAN	NALOXONE	11/18/2015	OPIOID OVERDOSE
7	GENVOYA	COBICISTAT, ELVITEGRAVIR, EMTRICITABINE AND TENOFOVIR ALAFENAMIDE	11/05/2015	HIV INFECTION
8	MORPHABOND	MORPHINE SULFATE	10/02/2015	PAIN
9	VELTASSA	PATIROMER	10/21/2015	HYPERKALEMIA
10	VIVLODEX	MELOXICAM	10/22/2015	OSTEOARTHRITIS
11	BELBUCA	BUPRENORPHINE HYDROCHLORIDE	10/23/2015	CHRONIC PAIN
12	SEEBRI NEOHALER	GLYCOPYRROLATE	10/29/2015	COPD
13	DURLAZA	ASPIRIN	09/04/2015	HIGH CHOLESTEROL
14	VRAYLAR	CARIPRAZINE	09/17/2015	ISCHEMIC STROKE
15	TRESIBA	INSULIN DEGLUDEC	09/25/2015	SCHIZOPHRENIA, BIPOLAR DISORDER
16	SPRITAM	LEVETIRACETAM	08/03/2015	CHRONIC HEPATITIS C
17	SYNJARDY	EMPAGLIFLOZIN AND METFORMIN	08/26/2015	SEIZURES, EPILEPSY
18	REPATHA	EVOLOCUMAB	08/27/2015	COPD
19	EPIDUO FORTE	ADAPALENE AND BENZOYL PEROXIDE	07/15/2015	ACNE
20	PRALUENT	ALIROCUMAB	07/24/2015	ACNE
21	DAKLINZA	DACLATASVIR	07/24/2015	HIGH CHOLESTEROL

FDA BANNED DRUGS

SL.NO	DRUG	INDICATION	ALERT	DATE
1	SODIUM-GLUCOSE COTRANS-PORTER-2 (SGLT2) INHIBITORS	TYPE 2 DIABETES	URINARY TRACT INFECTIONS	04/12/2015
2	ENTACAPONE	NEUROLOGY	INCREASED RISK OF HEART ATTACKS, STROKE	26/10/2015
3	CEFTAZIDIME AND AVIBACTAM	ANTIBACTERIAL DRUG	DOSE CONFUSION AND MEDICATION ERRORS	22/09/2015
4	TRAMADOL	ANALGESIC	BREATHING DIFFICULTY	21/09/2015
5	DPP-4 INHIBITOR	TYPE-2 DM	SEVERE JOINT PAIN	28/08/2015
6	HYDROCHLOROTHIAZIDE	DIURETIC	BP,EDEMA	31/07/2015
7	NSAID	LONG TERM USE	HEART ATTACK ,STROKE	09/07/2015
8	METHYL PHENIDATE TRANSDEMAL SYSTEM	ADHD	PERMANENT LOSS OF SKIN COLOUR	24/06/2015
9	EZOGABINE	ANTI-SEIZURE	RETINAL ABNORMALITIES,POTENTIAL VISION LOSS, SKIN DISCOLOURATION	16/06/2015
10	CEFTOLOZANE AND TAZOBACTAM	ANTI-BACTERIAL	MEDICATION ERROR AND DOSE CONFUSION	20/05/2015
11	CANAGLIFLOZIN, DAPAGLIFLOZIN, AND EMPAGLIFLOZIN	ANTI-DIABETIC DRUG	KETOACIDOSIS	15/05/2015
12	FERUMOXYTOL	IRON DEFICIENCY ANEMIA	FATAL ALLERGIC REACTION WITH ANEMIA	30/03/2015
13	AMIODARONE,SOFOSBUVIR	CHRONIC HEPATITIS C	SERIOUS LIVER PROBLEM	24/03/2015
14	OLANZAPINE PAMOATE	SCHIZOPHRENIA	POST INJECTION DELIRIUM SEDATION	23/03/2015
15	VARENICLINE	QUIT SMOKING	POTENTIAL ALCOHOL INTERACTION, RARE RISK OF SEIZURES, AND STUD-IES OF SIDE EFFECTS ON MOOD, BEHAVIOR, OR THINKING	09/03/2015
16	TESTOSTERONE	REPLACEMENT THERAPY	HEART ATTACK ,STROKE	03/03/2015
17	NSAID,OPIOIDS	PAIN MEDICINE DURING PREGNANY	DEPRESSION,ANXITY	09/01/2015

DRUG PROFILE

COLCHICINE

Date of Approval
17 December 2015

Brand
COLCRYS

Indication
Familial Mediterranean Fever (FMF).

Dose
The recommended dosage for adults is 1.2 mg to 2.4 mg daily.
Children 4-6years: 0.3mg to 1.8mg daily
Children 6-12years: 0.9 mg to 1.8mg daily
Adolescents older than 12 years: 1.2mg to 2.4mg daily.
The dose should be increased as needed to control disease and as tolerated in increments of 0.3mg/day to maximum recommended daily dose. If intolerable side effects develop, the dose should be decreased in increments of 0.3 mg/day.

Mechanism of Action
Colchicine may interfere with the intracellular assembly of the inflamasome complex present in neutrophils and monocytes that mediates activation of interleuk-l ß. Additionally, colchicine disrupts cytoskeletal fuctions through inbition of ß'-tubulin polymerization into microtubules and consequently prevents the activation, degranulation, and migration of neutrophils.

Pharmacokinetics
Absorption
In healthy adults absorbed when given orally, reaching a mean C max of 2.5 ng/mL (range 1.1 to fasting conditions. 4.4 ng/mL) in 1.0 to 2 hours (range 0.5. to 3 hours) after a single dose administered under fasting conditions. After 10 days on a regimen of 0.6 mg twice daily peak concentrations are3.1 to 3.6 ng/mL (range 1.6 to 6.0 ng/mL), occurring 1.3 to 1.4hours post-dose (range 0.5 to 3.0 hours). Administration with food has no effect on the rate of colchicines absorption but did decrease the extent of colchicines absorption by approximately 15%.
Distribution
The mean apparent volume of distribution in healthy young volunteers was approximately 5 to 8 L/kg. Colchicines binding to serum protein are low, primarily to albumin regardless of concentration. Colchicine crosses the placenta (plasma levels in the fetus are reported to be approximately 15% of the maternal concentration). Colchicine also distributes into breast milk at concentrations similar to those found in the maternal se-

rum.

Metabolism

Colchicine is demethylated to two primary metabolites, 2-0-demethylcolchicine and 3-0-demethylcolchicine and one minor metabolite, 10-O-demethylcolchiceine also known as colchiceine). In vitro studies using human liver microsomes have shown that CYP3A4 is involved in the metabolism of colchicine to 2- and 3-DMC. Plasma levels of these metabolites are minimal (less than 5% of parent drug).

Elimination

In healthy vo1unteers 40- 65% of 1 mg orally admnistered colchicines was recovered unchanged in urine. Enterohepatic recirculation and biliary excretion are also postulated to play a role in colchicine elimation. The mean elimination half-lives in young healthy volunteers (mean age 25 to 28 years of age) is 26.6 to 31.2 hours. Colchicine is a substrate of P-glycoprotein (P-gp). Colchìcine is not removed by hemodialysis.

Adverse Effects

Gastrointestinal tract adverse effects are the most frequent side effects. Typical symptoms include cramping, diarrhea, nausea and vomiting. Serious toxic manifestations associated with colchicine include myelosuppression, disseminated intravascular coagulation and injury to cells in the renal, hepatic, circulatory, and central nervous systems. These most often occur with excessive accumulation or overdosage.

Drug Interactions

If administered with drugs that inhibit P-gp, most of which also inhibit CYP3A4, increased concentrations colchicine are likely. Fatal drug interactions have been reported. Physicians should ensure that patients are suitable candidates for treatment with colchicine and remain alert for signs and symptoms of toxicities related to increased colchicine exposure as a result of a drug interaction. Signs and symptoms of colchicine toxicity should be evaluated promptly and, if toxicity is suspected, should be discontinued immediately.

Pregnancy Category: C

There are no adequate and well controlled studies with colchicine in pregnant women. Colchicine crosses the human placenta. Data from a limited number of published studies found no evidence of an increased risk of miscarriage, stillbirth or teratogenic effects among pregnant women using colchicine to treat familial Mediterranean fever. Although animal reproductive and developmental studies were not conducted published animal reproduction and development studies indicate that colchicine causes embryofetal toxicity, teratogenicity and altered postnatal deve1opment at exposures within or above the clinical therapeutic range. Colchicine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Contraindications

Patients with renal or hepatic impairment should not be given colchicine in conjunction withP-gp or strong CYl3A4 inhibitors. In these patients, life-threatening and fatal colchicine toxicity has been reported with colchicine taken with therapeutic doses.

Precautions

Fatal overdoses have been reported with colchicine in adults and children. Blood dyscrasias myelosupression, leukopenia, granulocytopenia, thrombocytopenia, and aplastic anemia have been reported. Monitor for toxicity and if present consider temporary interruption or discontinuation of colchicine. Co-adminislration with P-gp and/or strong CYP3A4 inhibitors has resulted in life-threatening interactions and death. Myotoxicity including rhabdomyolysis may occur, especially in combination with other drugs known to cause this effect. Consider temporary interruption or discontinuation of drug.

CURRENT TRENDS IN MEDICAL PRACTICES

Introduction

Quality healthcare is one of the most important factors in how individuals perceive their quality of life. In most countries, alongside the economy, it is the major political issue. In some countries, the healthcare delivery organization is a part of the national identity.

Fast-forward to 2015, and trends that emerge suggest a refined understanding of how data, technology and design will contribute to healthcare transformation.

1. Organizational maturity.

If there is a hallmark of 2015, it is organizational maturity as heathcare and life sciences companies realign resources in the name of innovation.

The rise of the "innovation center of excellence" has now given way to embedding innovation DNA across the organization. "I think one of the big changes that I have seen here at Pfizer and elsewhere as I network with other innovation groups is that companies—pharma included—are seeing innovation as a needed longer-term capability of the organization," says Wendy Mayer, VP worldwide innovation, Pfizer.

2. The data science movement is here.

Following years of keynotes and panels on the subject of big data, the movement has firmly arrived, primarily propelled by early-stage companies. While incumbents, such as payers and pharma, seek to better use existing data, start-ups are designing their companies from the ground up to collect, store and make use of data.

"One of the most exciting developments in healthcare today is the emergence of a new breed of entrepreneurs focused on making sense of all this new data," says Unity Stoakes, co-founder and managing partner of StartUp Health.

3. Data liquidity.

If data science is the movement of our time, interoperability is the rallying cry. Without interoperability of systems, there is no data liquidity. If data is not liquid, population health cannot be achieved.

At the heart of this challenge is the electronic medical record. "EMRs weren't designed to be interoperable," says Niko Skievaski, co-founder of Redox, a team of former Epic developers now focusing on EMR integration. Historically, every EMR installation was highly customized, with the result that not only did different EMRs not connect with one another, but the same EMR software installed in different health systems did not connect.

4. Data security.

With an increased desire for interoperability comes an increased need for security. "Anytime you have motion, transfer or access to data, you run into problems of control, security and privacy," says Chas Ballew, co-founder of Aptible, a firm that focuses on secure and private cloud deployment for digital health solutions.

"There's never just one way in, there are many ways in," Ballew says. "There are doors, windows, the basement. If you are going to lock your house, you want to board up the windows and put a guard at the door." His platform aims to "lock down the house" by limiting the number of ways in and maintaining security as part of larger compliance efforts.

5. Humans first, then technology.

While advances in data science and technology are welcome, numerous organizations are investing in empathy with end customers prior to developing solutions. "There has been a recent obsession with using technology to solve clinical problems," said Sachin Jain, chief medical officer, CareMore Health System/Anthem.

"Technology is an enabler, not the sole solution," adds Laura Kolodjeski, director, digital strategy & operations at Sanofi US. She compares this to the two-way mirrors of the past, where the industry "set the stage for what we wanted to hear versus focusing on the organic conversation taking place without us in the room."

6. New models.

Empathy and experience are not limited to just marketing. They are also the underpinnings of new models, suggests Elliot Cohen, co-founder and CTO of PillPack, who suggests that health outcomes and experience are highly correlated. "If it's easy and delightful to be healthy, you will."

PillPack is reinventing the pharmacy experience, just as Oscar is reinventing the health insurance experience and Theranos is reinventing the lab testing experience.

7. The new care team.

The care team is about to get a makeover as health systems reorganize in the face of a physician shortage. A 2015 study conducted for the Association of American Medical Colleges estimates that the United States will be short some 46,000 to 90,000 physicians by 2025. Meanwhile, the ranks of nurse practitioners are growing, with many states now granting them more independence, known as "full practice authority."

8. Refined investment theses.

Five years ago pharma spread early-stage investment dollars wide to better understand how data, technology and design would alter the healthcare landscape. Now with experience under its belts, pharma is narrowing investment theses, clearly articulating areas of focus more in line with a seasoned venture capitalist's approach. "You can't be an expert in every discipline. So we picked three," states the Johnson & Johnson innovation portal.

9. Open innovation

Five years after the first health hackathon, healthcare organizations have learned to open up. "We used to have a very big 'not invented here' complex but now realize that, with the pace of emerging technology and new business models, we would be left very far behind if we had to rely only on our internal capabilities to drive innovation," says Mayer of Pfizer.

"This also helps the organization balance the near-term business priorities, which if innovation is included tends to be very incremental, with the need to stay attuned to bigger transformation trends and changes that could have a big impact on our business but take longer to develop, test and implement."

10. It's time for clinical innovation.

How do the themes of data science, empathy and open innovation come together? Through new and improved approaches to drug development. "The clinical trial and research world is probably the most ripe for disruption," says Turner, who adds, "because EMRs and analytics companies are creating and storing real-world data, they create opportunities to learn that will drive both R&D and coverage decisions." His firm aims to accelerate research and optimize treatment by enabling personalized medicine and helping physicians and patients make better data-driven decisions.

Conclusion

We have seen that the field of medical informatics have matured some, but it is still a fairly young field. There are still many issues that need to be solved. The problems will most likely be solved in time. When looking aside from the problems it is clear the computer technology can bring a the field of medicine to new levels in terms of making the health care sector more effective. New technology can also bring new possibilities in to the actual caring of patients with better tools for monitoring, diagnostics and imaging. Medical informatics also brings new possibilities for research and helping new progress in developing new methods for curing diseases. Extended use of digital storage of data from examination and treatment makes it possible to pool data and use it as a valuable resource for research. Computer systems are a vital part of bioinformatics and bioinformatics have a great potential to give medical research new insight. The breakthroughs in the field have been partly technology driven. The increase in capacity and more reasonable prices have made it possible to realize the systems that are currently in use. This trend is likely to continue and bring new possibilities for the medical informatics field.

CONGRATULATIONS

1. THE BEST PHARMACIST AWARD 2015

Dr. K. Krishnakumar, Principal, St-James College of Pharmaceutical Sciences, Chalakudy, won " THE BEST PHARMACIST AWARD - 2015" for Teaching and Enforcement by the Kerala State Pharmacy Council in recognition of his outstanding contribution to pharmacy profession on the auspicious World Pharmacist Day, September 25th 2015.

1. Ms. Chinnu Jerard of Pharm D 5th Year secured first prize in National Elocution Competition - 2015 conducted by Indian Pharmaceutical Association at JSS University on 20th December 2015

We Acknowledge: *The doctors of St. James' Hospital, Chalakudy for their interaction with the students during ward rounds and queries directed to our Drug Information Centre which in-turn help us to train the students. Their constant support keeps us growing.*

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