



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

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Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

2.3.1. Student centric methods such as experiential learning, participative learning and Problem-solving methodologies are used for enhancing learning experiences and teachers use ICT enabled tools including online resources for effective teaching and learning process.

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Avanthi Institute of Pharmaceutical Sciences
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2.3.1. Student centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences and teachers use ICT enabled tools including online resources for effective teaching and learning process.

This approach recognizes that every student is unique and learns in their own way. It emphasizes active participation, critical thinking, and self-directed learning. Instead of a one-size-fits-all curriculum, student-centric education allows students to explore topics they are passionate about, set their own learning goals, and take ownership of their education. By putting students at the forefront, this approach aims to foster a lifelong love of learning and prepare students to thrive in an ever-changing world.

Avanthi Institute of Pharmaceutical Sciences provides an effective platform for students to develop latest skills, knowledge, attitude, values to shape their behavior in the correct manner. All departments conduct innovative programs which stimulate the creative ability of students and provide them a platform to nurture their problem-solving skills and ensure participative learning. The institute organizes annual technical fest in which students showcase their learning in the form of innovative projects. Also, students are motivated to participate in inter college as well as national level competitions.

Teachers actively use ICT tools for making power point presentations. Teachers also **actively** encourage students to take up online MOOCs courses that are given credits. In addition to the regular class work teaching methodology. The institute focuses on the student-centric **methods of** enhancing lifelong learning skills of students. Faculty members make efforts in making the learning activity more interactive by adopting the below-mentioned student-centric methods:

- 1. Experiential Learning**
- 2. Participation Learning**
- 3. Problem-Solving Methodologies**



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Experiential Learning:

Experiential Learning is the process of getting knowledge by performing demonstration. In this method students getting higher quality education in the classroom to real-world situations. Well organized, preside over and assessed experiential learning plan of action can stimulate academic inquiry by promoting interdisciplinary learning, career development, cultural awareness, leadership, and other professional and intellectual skills.

1.1. Open Ended Experiments

1.2. Working Models

1.3. Simulation Software Experiments

1.4. Community Services

1.5. Internships



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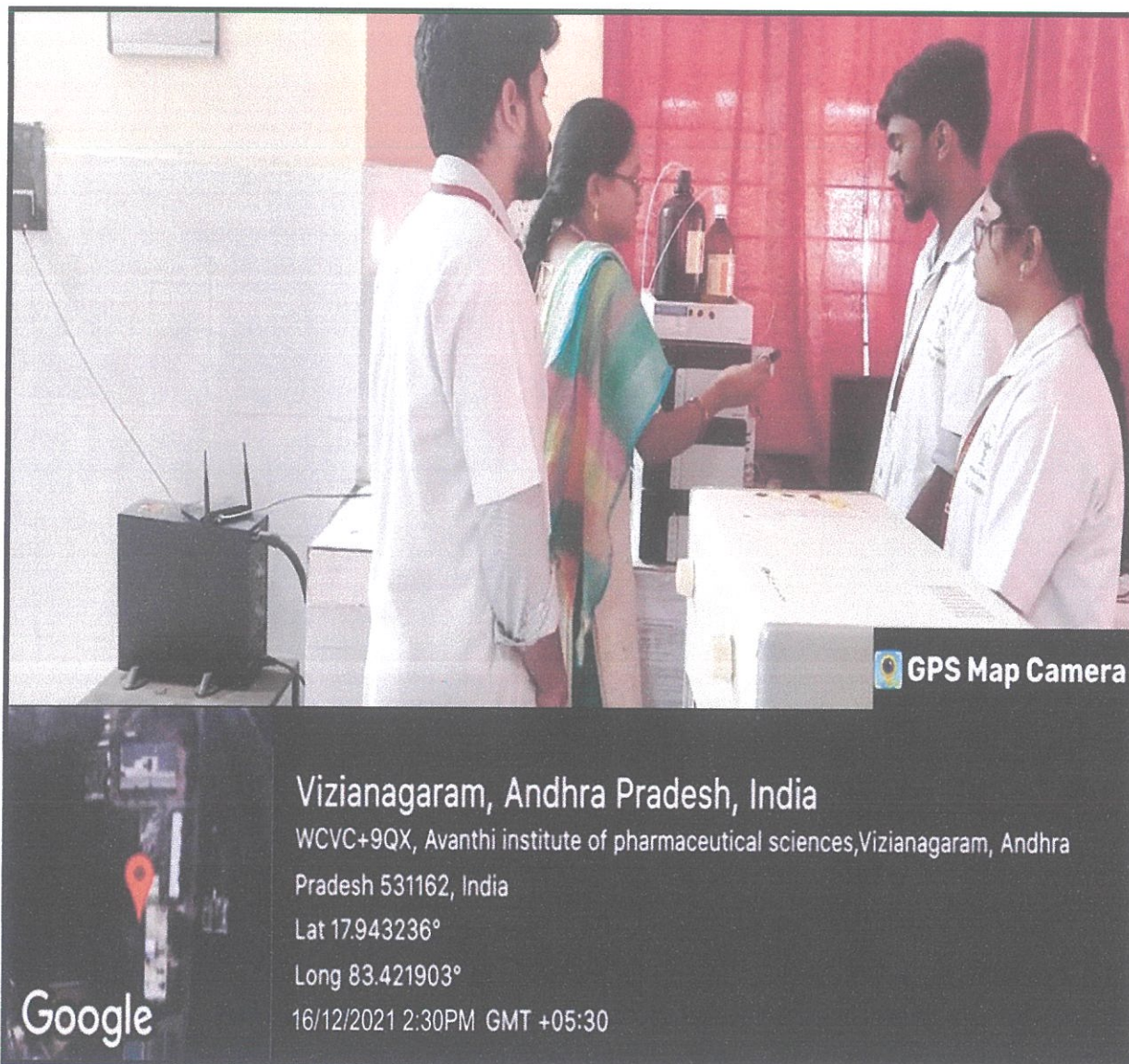
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1.1 Open Ended Experiment (OEE):

OEE inculcate self-thinking and consolation to develop their experiments connected with their subject of study and enhances learning outcomes in research facility works. Students will develop self-directed, reflective, learners who can coordinate information, think fundamentally and work cooperatively with others, which are profoundly helpful in the impressive skill and professional way.



Faculty explaining HPLC working mechanism to IV year I sem B pharmacy students

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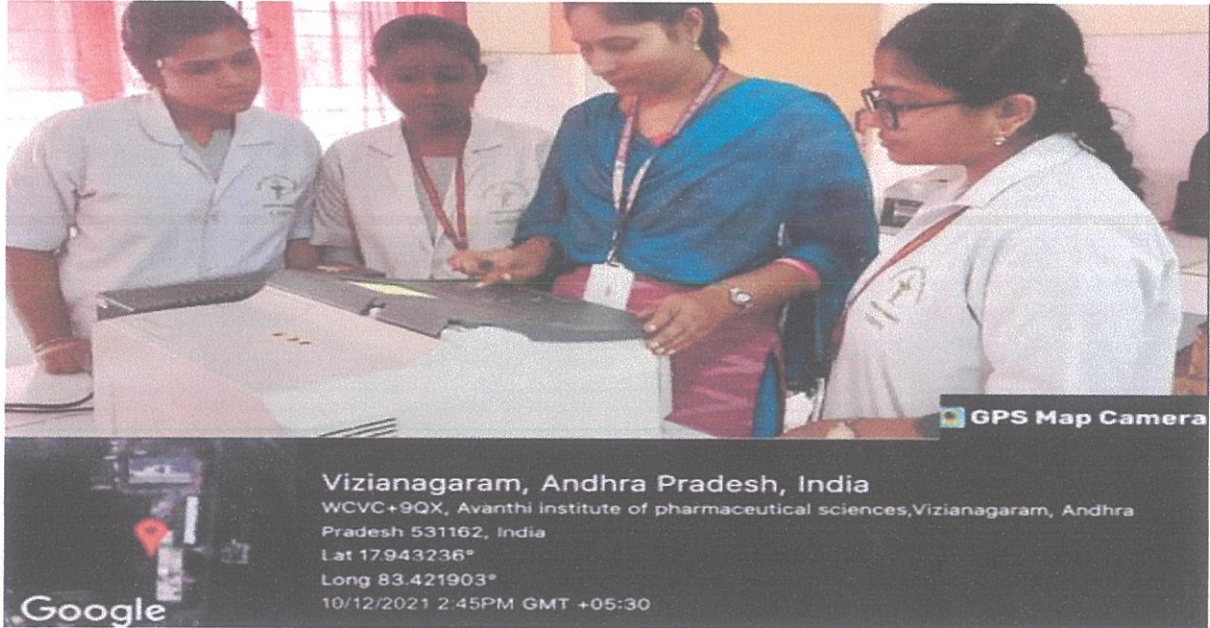


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Analysis Lab Performed by III pharma D Students



Demonstration on Working of Tablet Punching Machine

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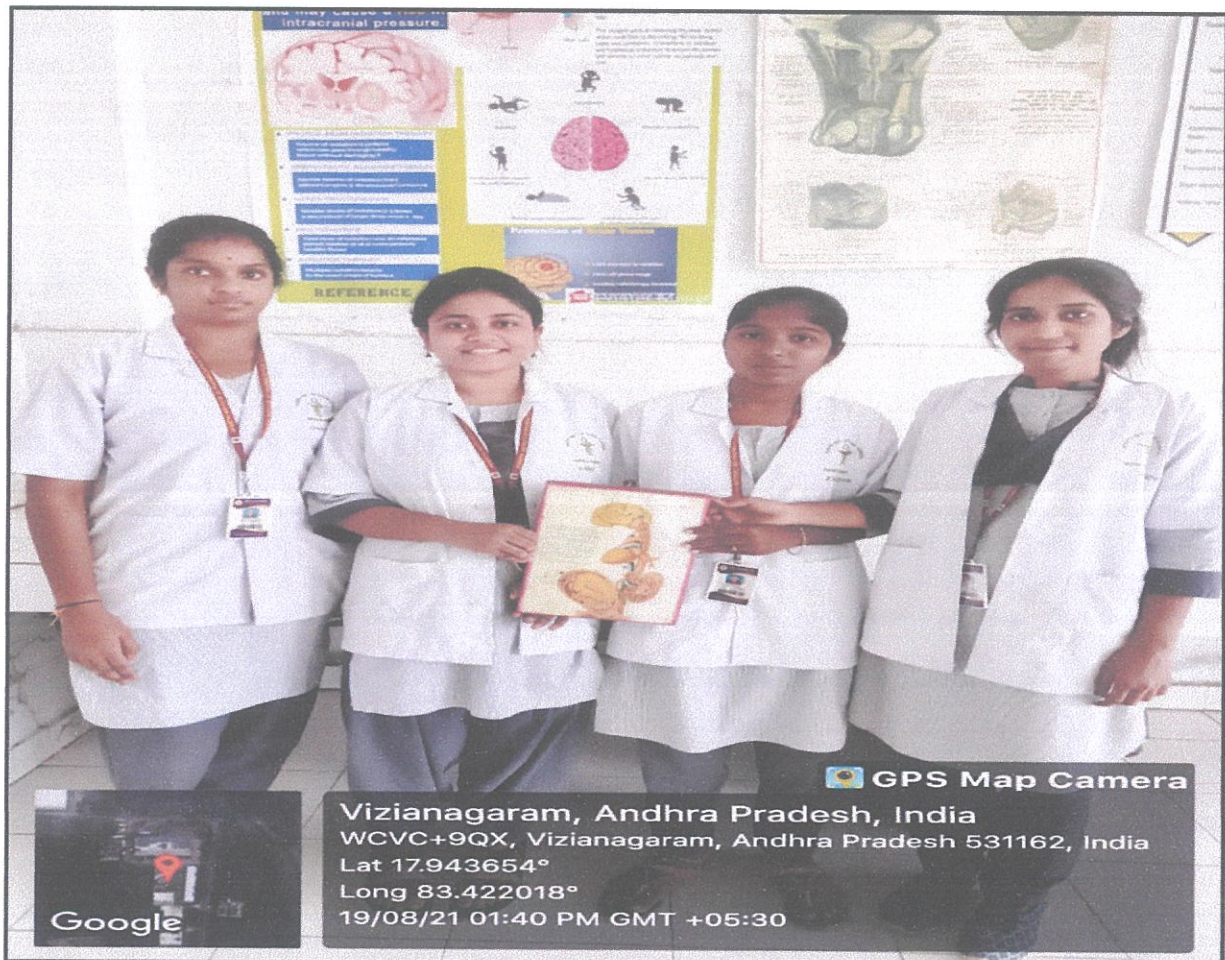
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1.2 Working Models:

In this method students plan and show working models of individual design and concepts. Those models can provide a clear vision of the topic. Working models hold significant importance in pharmacy education as they provide extremely useful tools to cross over the gap between theory and practice. Pharmacy, being a field that commands practical expertise, benefits immensely from hands-on learning experiences. Avanthi Institute of Pharmaceutical Sciences provides these models to students to know the detailed understanding about the anatomy physiology, drug formulations, and equipment, allowing them to gain practical skills and a deeper understanding of the subject matter.



Working Model Prepared by I Pharm. D Students

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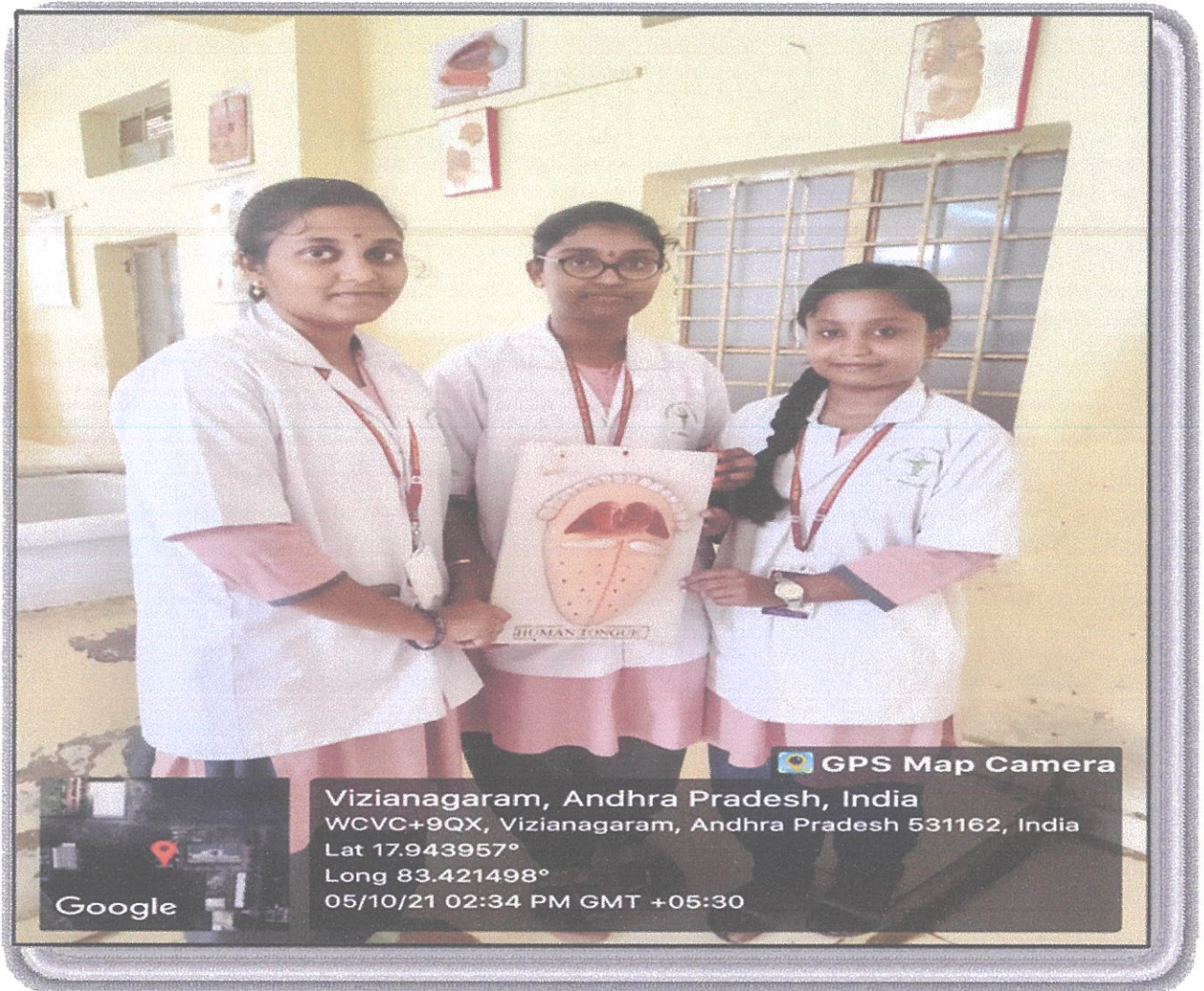
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Working Model Prepared by I B. Pharm Students



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1.3. Simulation Software Experiments

Avanthi Institute of Pharmaceutical Sciences procured various simulation software's like Ex-pharma software. Simulation software plays a vital role in pharmacy education, offering a host of benefits that enhance the learning experience. This exciting learning software gives students the ability to performing experiments and introduce concept of all the experiments .students expand their knowledge with interactive experimentation ,eye opened illustration and enlightening discussions .



Different pharmacology experiments of pharmacology and physiology in Ex –Pharma Software



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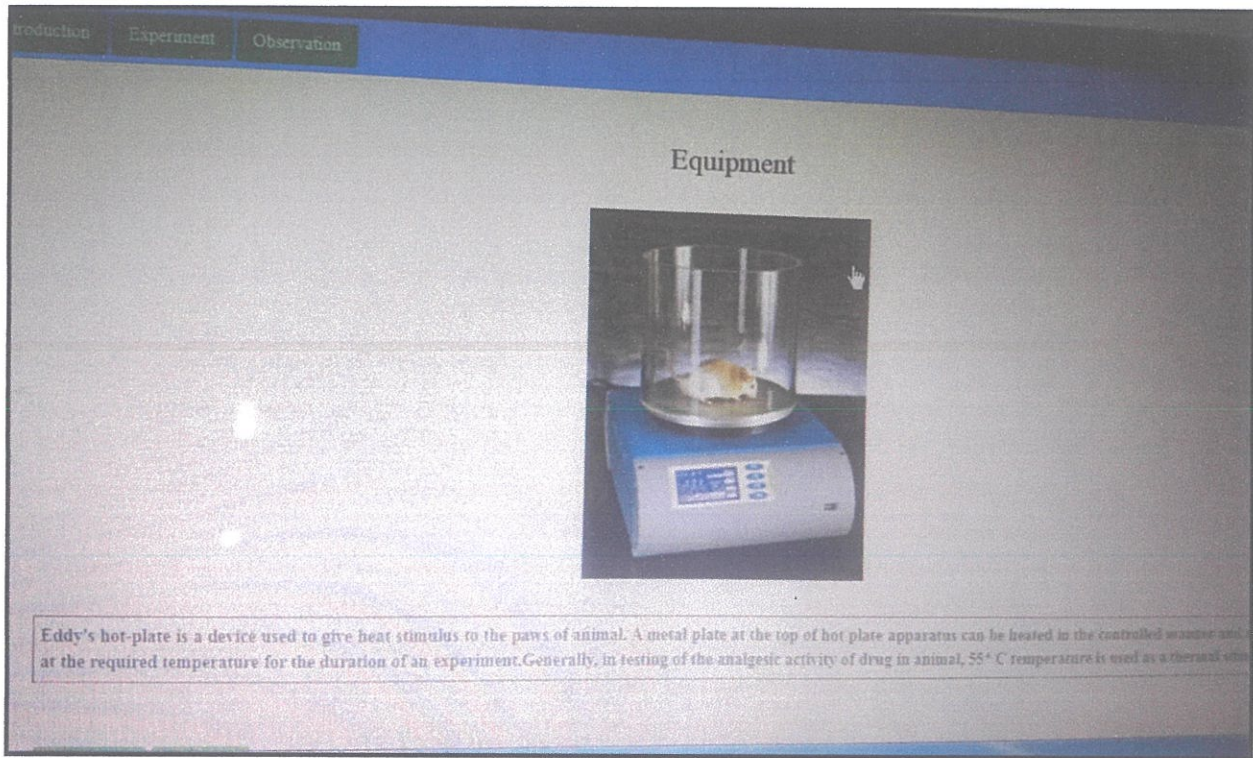
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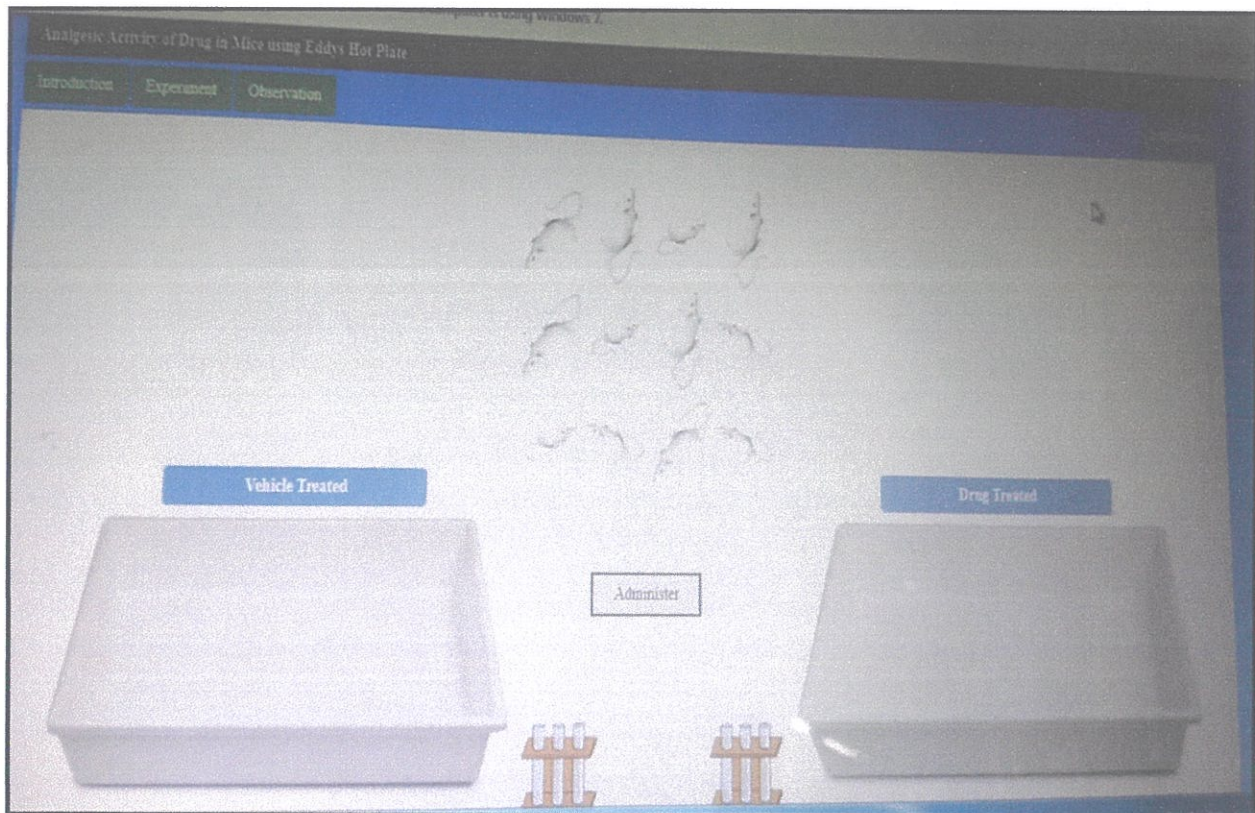
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Working Mechanism of Eddys Hot Plate Apparatus



Examination Anti Pyretic activity of the drug by using simulation experiments



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1.4. Internships:

An internship is a professional working experience that provides meaningful, practical knowledge to the students. An internship gives a student the better chance for career exploration and development, and to learn innovative skills. It provides information on modern procedures available in the industries, global organizations and hospitals. Internships hold immense significance in Pharm-D education as they serve as a bridge between classroom learning and real-world pharmacy practice. Internships provide vulnerability to various aspects of pharmacy, including hospital pharmacy, community pharmacy, clinical rotations, and specialized areas like infectious diseases or pediatrics. They enable students to interact with patients, healthcare teams, and diverse pharmaceutical professionals, helping them develop essential clinical and interpersonal skills.



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Cherukupally(V), Bhogapuram (M), Vizainagaram(Dst)

EVALUATION OF INTERNSHIP

Dt:1/10/2022

Name of the Candidate:MATLAPUDI SUDEER KUMAR

Regd No:16T51T0011

Year: VI Pharm.D


S.No	Objective	Score Obtained	Score
1	Proficiency of knowledge required for each case management	5	0-5
2	The Competency in skills expected for providing clinical Pharmacy Services	5	0-5
3	Responsibility, Punctuality, Work up of case, involvement in patient care	4	0-5
4	Ability to work in a team (Behaviour with other healthcare professionals including medical doctors, nursing staff and colleagues).	5	0-5
5	Initiative, Participation in discussions, research aptitude.	5	0-5

Poor	Fair	Below Average	Average	Above Average	Excellent
0	1	2	3	4	5


Dr.V.C.Randeep Raj
PRECEPTOR


Dr.M.B.Venkatapathi.Raju
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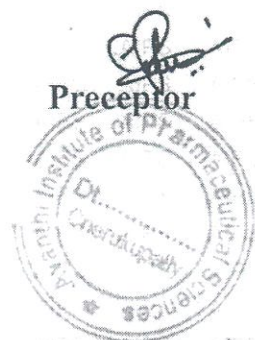
Certificate of Internship

Doctor of Pharmacy (Pharm.D.) Programme



This is to certify that Mr. **MATLAPUDI SUDEER KUMAR** bearing Regd. Number **16T51T0011** is a Bonafide Student of Avanathi Institute of Pharmaceutical Sciences from 2016-2022 pursuing **Doctor of Pharmacy (Pharm.D) course**. He has successfully completed the Internship at the Maharaja Institute of Medical Sciences, Vizianagaram in the following Units / Departments as prescribed under regulation 16 and Appendix C of Pharm.D. Regulations 2008 of Pharmacy Council of India, New Delhi.

Department	Date		Total Duration (in Months)
	From	To	
General Medicine	Oct. 2021	Mar 2022	6
Paediatrics	Apl. 2022	May 2022	2
Gynaecology	June 2022	July 2022	2
Dermatology	Aug. 2022	Sep. 2022	2



Date: 1/10/2022

[Signature]
Superintendent
(MIMS)

Medical Superintendent
MIMS, General Hospital
111, KARLA - 535 215

[Signature] 1/10/2022
Principal
(AIPS)

CHIEF SUPERINTENDENT & PRINCIPAL
Avanathi Institute of Pharmaceutical Sciences
CHERUKUPALLI (V)
CHITTIALGAR A.O.



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2.1.2 Participative learning:

An approach to teaching and learning which focuses on the learner. It encourages learning by doing, using small groups, concrete materials, open questioning, and peer teaching. For example, learners use practical activities to understand mathematical concepts or work together to solve problems and ask and answer questions. Participatory learning is contrasted with teacher-focused methodologies, which are characterized by learners passively sitting at desks, answering closed questions and copying from a blackboard. Participatory learning may also be used with teachers and education authorities to support them to analyze their needs identify solutions and develop and implement a plan of action. In these contexts, it may include community participation, coordination, and analysis.



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2.1 Student Seminars:

Academic year : 2021-22

SEMINARS GIVEN BY THE STUDENTS

S.No	Date	Roll No	Student Name	subject	Seminar Topic	Faculty
1	28-02-2022	20T51R0012	B.Lavanya	Biotechnology	Genetics	M.Pavani
2	02-03-2022	20T51R0030	G. Meghana	Biotechnology	Gene signaling	M.Pavani
3	03-03-2022	20T51R0038	J.Thanmai	Biotechnology	Mutations	M.Pavani
4	04-03-2022	20T51R0067	N.Jhansi	Analysis	IR spectroscopy	B.Chaitanya
5	05-03-2022	20T51R0088	T.Bhargavi	Analysis	Electrophoresis	B.Chaitanya
6	07-03-2022	21T51R0002	A.Ramya	Pharmacology	Cancer therapy	M.Madhavi
7	08-03-2022	21T51R0014	C.Jagadish	Pharmacology	Anti TB drugs	M.Madhavi
8	09-03-2022	21T51R0049	S.Likhitha	Pharmacology	Anti viral agents	M.Madhavi
9	10-03-2022	21T51R0066	P.Anupama	HDT	Nutraceuticals	D.Poornima
10	11-03-2022	21T51R0086	S.Neelima	HDT	Herbal Cosmetics	D.Poornima



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2.2 Hospital posting:

The primary advantage of hospital pharmacy is to manage the use of medications in hospitals and other clinical centers. The main aim of hospital posting is to know the prescription, drug delivery, administration and review of medications to optimize patient outcome.

Hospital posting.— Every student shall be posted in constituent hospital for a period of not less than fifty hours to be covered in not less than 200 working days in each of second, third & fourth year course. Each student shall submit report duly certified by the preceptor and duly attested by the Head of the Department or Institution as prescribed. In the fifth year, every student shall spend half a day in the morning hours attending ward rounds on daily basis as a part of clerkship. Theory teaching scheduled in the afternoon.



Case Collection during Ward Round Participation by IV Pharm. D Students

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GPS Map Camera



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MIMS Hospital, nellimarla, Vizianagaram,
Andhra Pradesh 535002, India
Lat 18.146981°
Long 83.445328°
7/01/22 11:46 AM GMT +05:30

Case Collection during Ward Round Participation by III Pharm. D Students



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2.3 Industrial Visit & Training:

Avanthi institute of pharmaceutical sciences students visit different departments in pharmaceutical industries and get knowledge regarding quality control, production. Quality assurance and R&D departments. In industries workers provide information about D/W plant, HPLC working, batch management, disintegration and dissolution apparatus.

Industrial training (Desirable) Every candidate shall be required to work for at least 150 hours spread over four weeks in a Pharmaceutical Industry/Hospital. It includes Production unit, Quality Control department, Quality Assurance department, Analytical laboratory, Chemical manufacturing unit, Pharmaceutical R&D, Hospital (Clinical Pharmacy), Clinical Research Organization, Community Pharmacy, etc. After the Semester – VI and before the commencement of Semester – VII, and shall submit satisfactory report of such work and certificate duly signed by the authority of training organization to the head of the institute.

Avanthi institute of pharmaceutical sciences students visit different departments in pharmaceutical industries and get knowledge regarding quality control, production. Quality assurance and R&D departments.



Industrial Training by IV B Pharm Students at Phyzer Visakhapatnam

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Industrial Training by IV B.Pharm Students at Aurobindo Visakhapatnam



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List of Students Underwent Industrial Training

S.No	Student Name	Roll No.	Training Duration	Industry Name
1	K.Ramani	18T51R0027	05/09/2021 - 04/10/2021	Aurobindo
2	K.Tejasree	18T51R0028	01/11/2021- 30/11/2021	Sionic
3	K.Rama Lakshmi	18T51R0031	01/09/2021- 30/09/2021	Aurobindo
4	V. Aravind	18T51R0079	15/11/2021- 14/12/2021	Lee pharma ltd
5	K.Himaja	18T51R0029	15/11/2021 14/12/2021	Lee pharma ltd
6	P.Nirosha	18T51R0054	01/12/2022- 31/12/2022	Lee pharma ltd
7	E.Lahari	18T51R0014	01/11/2021- 30/11/2021	Sionic
8	NVL .Anusha	18T51R0049	01/11/2021- 30/11/2021	Sionic
9	M. Deepthi	18T51R0044	01/11/2021- 30/11/2021	Sionic
10	D .SaiSri	18T51R0010	03/1/2021- 03/1/2022	Aurobindo



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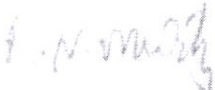
Date: 3rd January 2022

TO WHOMSOEVER IT MAY CONCERN

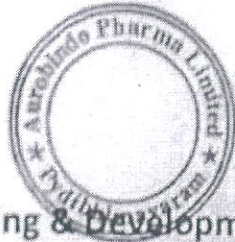
This is to certify that Ms. D.SAI SRI (Student I.D No: 18T51R0010), studying B. Pharmacy at Avanathi Institute of Pharmaceutical Sciences, Cherukupally Village, Bhogapuram Mandal, Vizianagaram District has completed Project Work on "Quality Control" from 3rd December 2021 to 3rd January 2022 at our unit, situated at survey no: 61-69, IDA, Pydibhimavaram, Ranasthalam Mandal, Srikakulam -District.

Ms. D.SAI SRI has shown keen interest during the training period and wishing her a great success.

for AUROBINDO PHARMA LIMITED


R. Narasimha Murthy,

Deputy Manager- Learning & Development.




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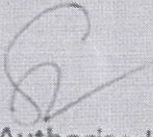
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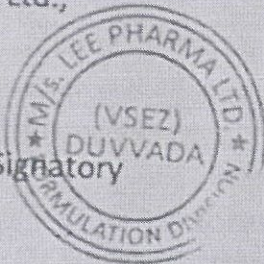
TO WHOM SO EVER IT MAY CONCERN

This is to certify that Mr. Vallisetti Aravind registration No: 18T51R0079, has undergone Industrial training in our organization from 15.11.2021 to 14.12.2021. During this period his conduct has been found to be good.

We wish to all the success in his future endeavors.

Lee Pharma Ltd.,


Authorized Signatory




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Where quality is first nature

Plot No. V, Phase II, VSEZ, Duvvada, Sakhareddy

Date: 30.11.2021
Visakhapatnam.

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. KALLA TEJASREE (Reg.No. 18T51R0028) is a bonafide student of AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES, Cherukupalli Village, Near Tagarapuvulasa Bridge, Vizianagaram Dist. AP. has successfully completed Industrial Training on areas of Quality Assurance, Quality Control & Production during the period 01-11-2021 to 30-11-2021.

She was found punctual and hardworking and inquisitive during the Industrial Training.

We wish her all success in future Endeavours.

With Best Regards,

FOR SIONC PHARMACEUTICALS PVT LTD.,

D.Naresh Kumar
Sr.Executive-HR



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PHARMACEUTICALS PVT. LTD.

Date: 30.11.2021
Visakhapatnam.

TO WHOMSOEVER IT MAY CONCERN

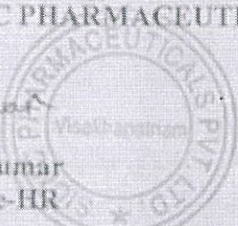
This is to certify that Ms. MEDAPALLI DEEPTHI (Reg.No. 18T51R0044) is a bonafide student of AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES, Cherukupalli Village, Near Tagarapuvulasa Bridge, Vizianagaram Dist. AP. has successfully completed Industrial Training on areas of Quality Assurance, Quality Control & Production during the period 01-11-2021 to 30-11-2021.

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www.avanthipharma.ac.in, principalavanthit5@gmail.com

2.4. Peer Learning

Avanthi Institute of Pharmacy accepts that friend learning is one of the most outstanding techniques for students to carry out group tasks, group discussions and so forth.

Peer learning helps students to

- Increase concentration
- Develop net works
- Enhance communication
- Encourage learning



GPS Map Camera



Vizianagaram, Andhra Pradesh, India

WCVC+9QX, Avanthi institute of pharmaceutical sciences, Vizianagaram, Andhra Pradesh 531162, India

Lat 17.943236°

Long 83.421903°

03/02/2022 11:30AM GMT +05:30

Google

Collaborative Learning with Group Discussion by II B Pharm students

H. Prasad
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2.5 E-Resources

List of open source and authorized software support for advanced learning

S.NO	NAME OF THE SOFTWARE	ONLINE ACCESSIBILITY
1	DELNET	389
2	SOUTH ASIAN	12
3	NDLI(National digital library of India)	32
TOTAL		433

E-Books list

PHARMACY BOOKS

Health ,Mind & Body

S.NO	NAME OF THE SUBJECT	NO OF VOLUMES
1	Diet & Weight loss	6
2	Disorders and Diseases	7
3	Fitness	7
4	Mental Health	14
5	Psychology & Counselling	12
6	Relationships	10
7	Self Improvements	11
8	Self Help	24
9	Personal Health	14
10	Safety & First	6



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Access E-Journals

S.NO	Name of the journal
1	Alimentary pharmacology and therapeutics
2	Alternative & integrative medicine
3	American journal of Ethnomedicine
4	Antioxidants
5	Arabian journal of Medicine and Aromatic plants
6	Biochemistry and Pharmacology
7	Bioelectronic Medicine
8	Bioceramics and Applications
9	Bioengineering
10	Biomedicine Dermatology
11	Cancer Nanotechnology
12	Cellular and Molecular Pharmacology
13	Chronic Obstructive Pulmonary Disease: journal of COPD foundation
14	Drug Design and Development Therapy
15	European Medical Journal Gastroenterology



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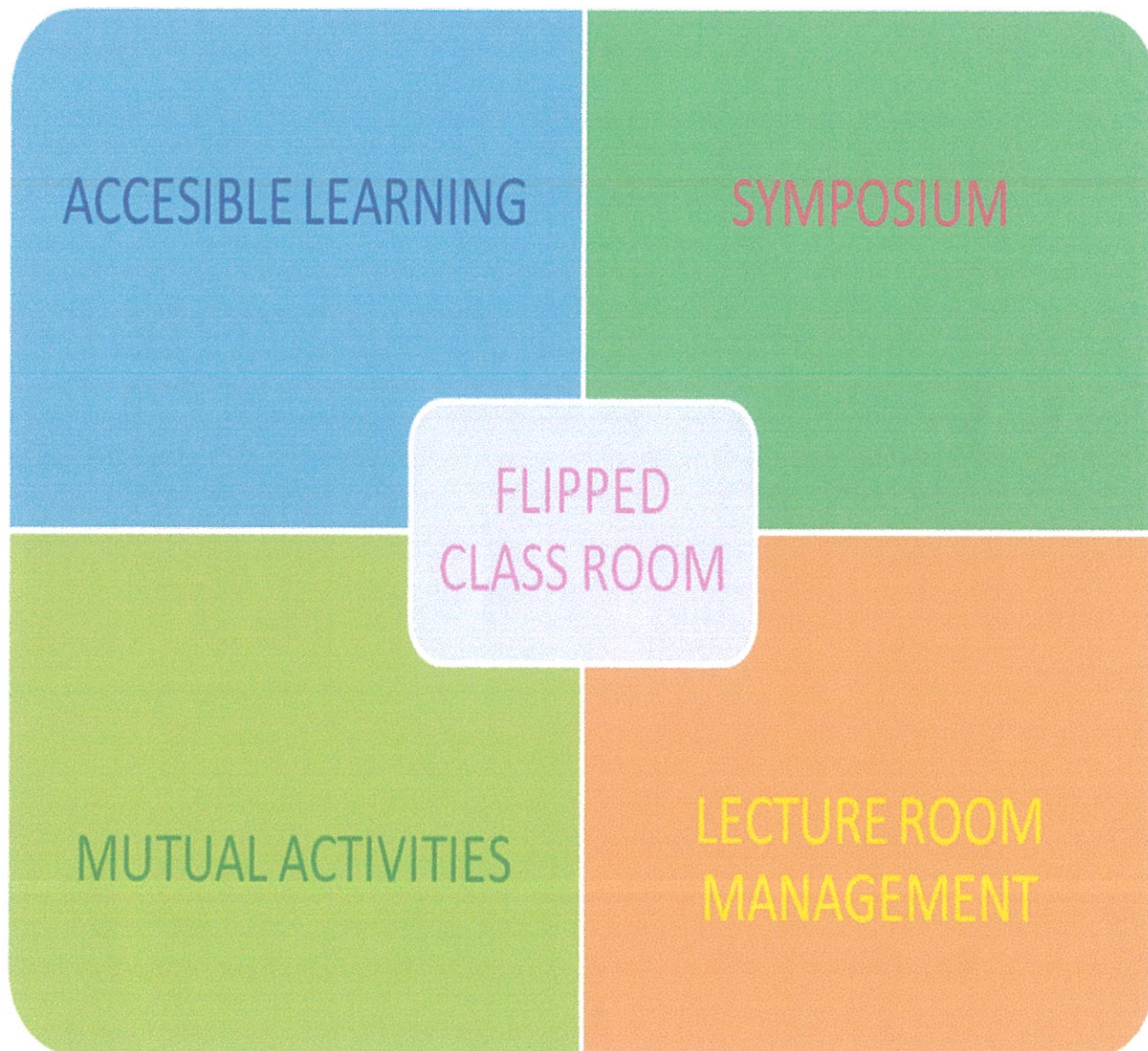
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Flipped Class Room :

A teaching method in which students utilize their own material at home in order to use class room to improve their knowledge upon the topics.



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INFORMATION AND COMMUNICATION TECHNOLOGY

S.NO	NAME OF CAPABILITY ENHANCEMENT PROGRAMMEE	NO.OF STUDENTS BENEFITED	DATE
1	A Session on empower software used in HPLC	179	11-04-2022 to 12-04-2022
2	Seminar on Computerization & Docking Of Inventories For Better Control On Inflow Of Raw Materials In Pharmaceutical Industries	51	11-08-2021
3	Webinar on Computer Aided Drug Design	96	07-01-2022
4	Patient Profile Monitoring	102	15-12-2021 to 16-12-2021
5	Webinar On Medical Scribing	102	15 -07- 2021



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2.6 Community Services : It is a donated service activity that is performed by group of people for benefit of the public or institution community service provide many benefits to the students

Develop expertise

Assemble social skills

Career development

Develop a sense of motivation

Helping overall community to grow

Participate to gain experience

Boost confidence

Build your network

Community focus

Giving something back

Avanthi institute of pharmaceutical sciences students perform so many awareness programs, some of them are pictured below.



Awareness program on communicable diseases by AIPS students. *Signature*



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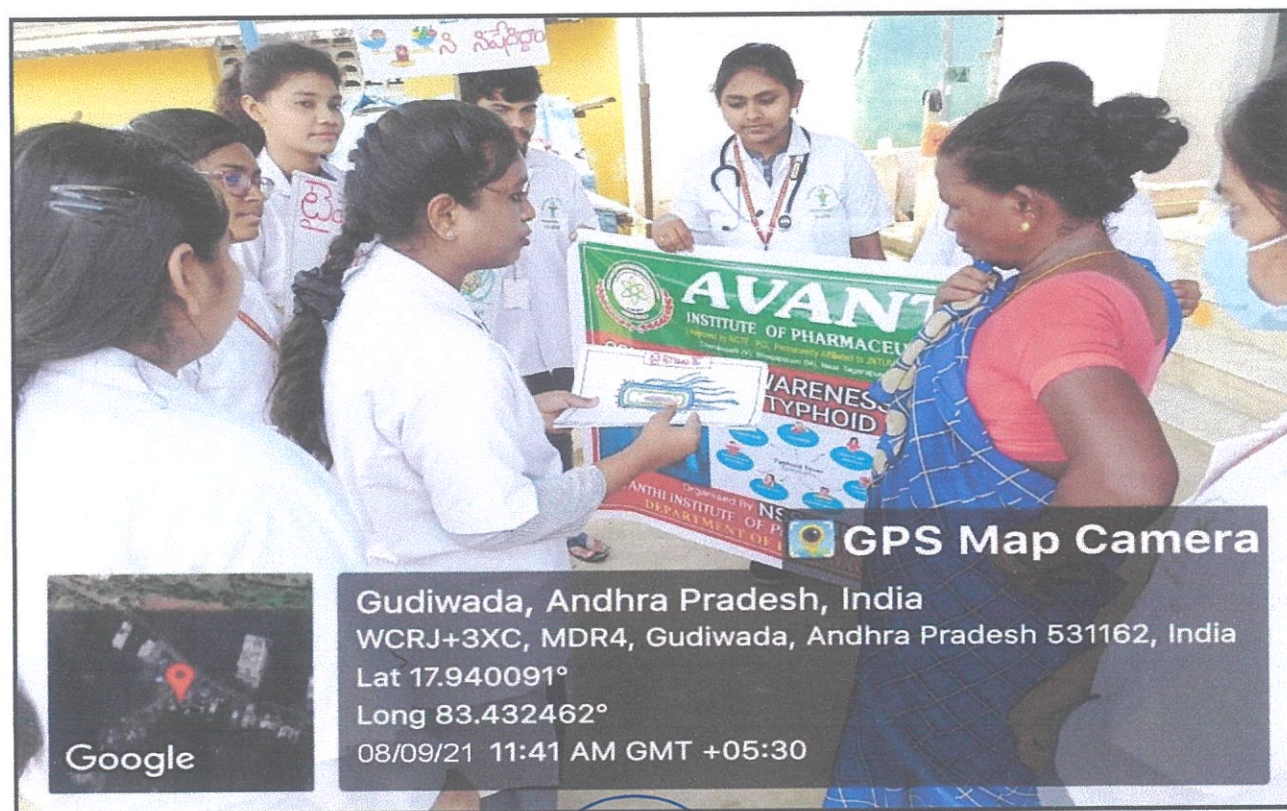
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Avanthi institute of pharmacy organised a Awareness of "say no to plastic" at cherukupally



Typhoid awareness program by III Pharm.D Stdents

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2.3 Problem solving method:

Problem-based learning (PBL) is a student-centered approach in which students learn about a subject by working in groups to solve an open-ended problem.

3.1 Assignment

3.2 Project Work

3.3 Case study

3.4 Practice School

3.1 Assignment

A task or piece of work allocated to someone as part of a job or course of study. The allocation of someone or something as belonging to a particular group or category. It is a specified task or amount of work assigned or undertaken as if assigned by authority.



Signature

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ASSIGNMENT-1

Name : A. Sireesha

Roll no : 22T51R0005

Subject : Pathophysiology

Topic : Different types of
thyroid disorders,
AIDS

1st year B. pharmacy

Submitted

to

Mrs. Meher Jyothi

Madam.


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Thyroid Disorders

Thyroid disorders are a common problem that can cause symptoms because of over- or under-function of the thyroid gland. The thyroid gland is an essential organ for producing thyroid hormones, which maintain body metabolism. The thyroid gland is located in the front of the neck below Adam's apple.

Thyroid disease can also sometimes lead to enlargement of the thyroid gland in the neck, which can cause symptoms that are directly related to increase in size of the organ (such as difficulty swallowing and discomfort in front of the neck).

Following thyroid disorders are included:

- 1) Hyperthyroidism.
- 2) Hypothyroidism
- 3) Goiter
- 4) Thyroid nodules
- 5) Thyroid cancer.

Hyperthyroidism:

Definition: Hyperthyroidism is a common endocrine disorder resulting from over-activity of the thyroid gland which produces thyroid hormones. Since the main purpose of thyroid hormones is to "run the body's metabolism," it is understandable that people with this common condition will have symptoms associated with metabolism.



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* Hyperthyroidism can be classified:

1) Primary hyperthyroidism: This can be result of excess production of thyroxin of the thyroid gland as in Graves' disease. Toxic multinodular Goiter, Autonomous toxic nodule.

2) Secondary hyperthyroidism: Exogenous administration of thyroid hormone, Thyroiditis, Struma ovarii stimulates the thyroid gland. also causes signs & symptoms of hyperthyroidism. Thyroiditis is inflammation disease of the thyroid. Thyroiditis is generally classified according to the rapidity of onset, the severity of the symptoms & signs & duration.

Etiology: The signs & symptoms associated with the various of hyperthyroidism like nervousness & irritability, palpitations & tachycardia, heat intolerance or increased sweating, Tremor, weight loss, Alterations in appetite, frequent bowel movements of diarrhea dependent lower extremity edema, Sudden paralysis, exertional intolerance & dyspnea, menstrual disturbance (decreased low), impaired fertility, mental disturbances & sleep disturbances (including insomnia).

The causes of hyperthyroidism include the following; toxic diffuse goitre (Grave's disease), toxic adenoma, toxic multinodular goiter (Plummer's disease) painful subacute thyroiditis ^{Hashimoto} ~~Silent~~



thyroiditis including lymphocytic & post-partum variations, iodine-induced hyperthyroidism, excessive pituitary TSH or trophoblastic disease & excessive ingestion of thyroid hormones.

Pathophysiology:

Hyperthyroidism / Thyrotoxicosis is a stage that results from any cause of increased amounts of TH. The common diseases that cause primary hyperthyroidism include Grave's disease, toxic multi nodular goiter, a solitary toxic adenoma and very rarely caused by T.H secreting primary adenomas.

Hyperthyroidism is characterised by loss of the normal regulatory control of thyroid hormone secretion.

↓
The action of thyroid hormone on the body is stimulatory, hypermetabolism result.

↓
Increase in sympathetic nerves system activity.

↓
Alteration of secretion & metabolism of hypothalamic pituitary & gonadal hormones.

↓
Excessive amount of thyroid hormone stimulate the cardiac system & increase the of-adrenergic receptors.

↓
Tachycardia & ↑ed thyroid peripheral blood flow.

↓
Hyperthyroidism result.



hym
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2) Hypothyroidism :

Hypothyroidism is medical state when the thyroid gland stop producing sufficient concentration of thyroid hormone (Thyroxine, T_4 & Tri-iodothyronine T_3). In hypo patients with hypothyroidism have seen reduction in the production rate & Serum concentrations of T_3 & T_4 but increased rate of Thyroxide stimulating hormones level. when there is requirement of T_3 & T_4 and when the concentration of thyroid hormone is at the minimum level, the pituitary gland release thyroid stimulating hormone (TSH), controlled by Thyrotropin-releasing hormone (TRH), secreted by hypothalamus i.e, the thyroid gland is indirectly controlled by hypothalamus.

Due to high concentration of T_3 & T_4 in the blood, and once the blood concentration reach to the desired level of T_3 & T_4 in the blood, the pituitary gland itself stop secreting TSH in the blood which stop the production / secretion of T_3 & T_4 by thyroid in the blood.

etiology :

The symptoms of hypothyroidism depend on the deficiency of thyroid hormone, it includes; increased cholesterol levels, depression, fatigue, hair loss, memory loss, dry, rough skin, and constipation.



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Causes : The thyroid gland fails to produce enough hormones. The most common causes of hypothyroidism includes:

→ Auto immune disease:

The development of a particular inflammatory disorder known as Hashimoto's thyroiditis which have the most common cause of hypothyroidism. Auto immune disorders occurs the immune system produces antibodies that attack own tissues.

Treatment of hyperthyroidism:

Produce too much thyroid hormones (hyperthyroidism) are often treated with radioactive iodine or anti-thyroid medications to reduce and normalize their thyroid function. However, in some cases, treatment of hyperthyroidism can result in permanent hypothyroidism.

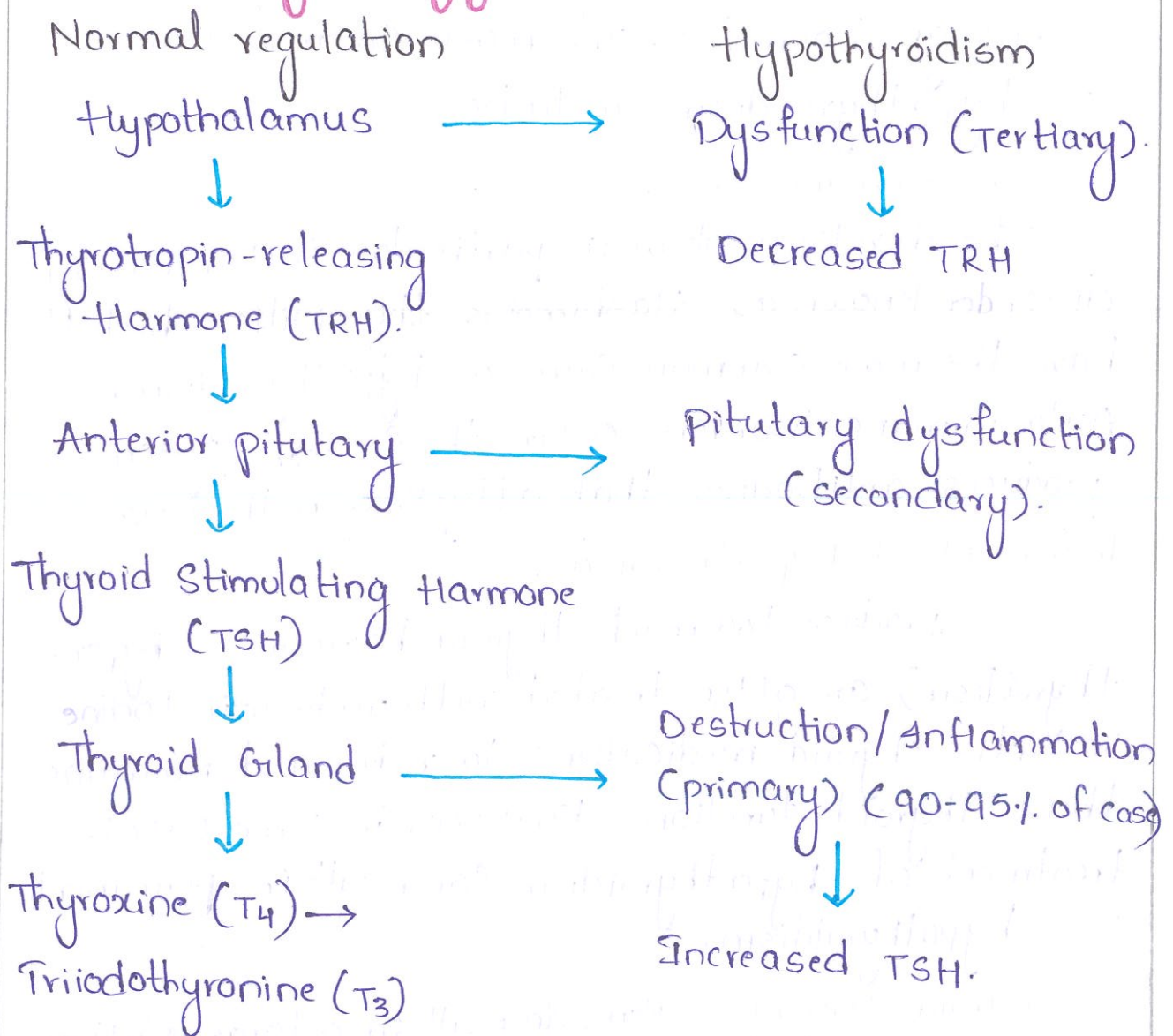
* Thyroid Surgery: Removing all or a large portion of thyroid gland can diminish the hormone production. In that case, you will need to take thyroid hormone for life.

Radiation therapy: Radiation used to treat cancer of the head & neck can also affect the thyroid production & may lead to hypothyroidism.

Medications: Various medications can contribute to hypothyroidism. One such medication is lithium, which is to treat certain psychiatric disorders.



Pathophysiology:



GOITER :

Introduction : Goiter is an enlargement of the thyroid gland, a butterfly-shaped gland which is present at the front of the throat & below Adam's Apple, is called goiter. The thyroid gland comprises of two lobes that lie on either side of the wind pipe joined by a bridge of tissue called the isthmus. It is controlled by the pituitary gland, which prompts the thyroid to secrete the hormones thyroxine (T₄) & triiodothyronine (T₃).



and tri-iodothyronine (T_3) by releasing thyroid stimulating hormone (TSH). Excessive stimulation of the thyroid gland by TSH can result in a goiter. The goiter has 3 types these include:

i) **colloid Goiter (endemic)**: A colloid goiter develops from the lack of iodine, a mineral essential to the production of thyroid hormones. People who get this type of goiter usually live in areas where iodine is scarce.

ii) **Non-toxic (sporadic)**: The cause of a non-toxic goiter usually live unknown, though it may be caused by medications like lithium. Lithium is used to treat mood disorders such as bipolar disorder. Non-toxic goiter's don't affect the production of thyroid hormone, and thyroid function is healthy.

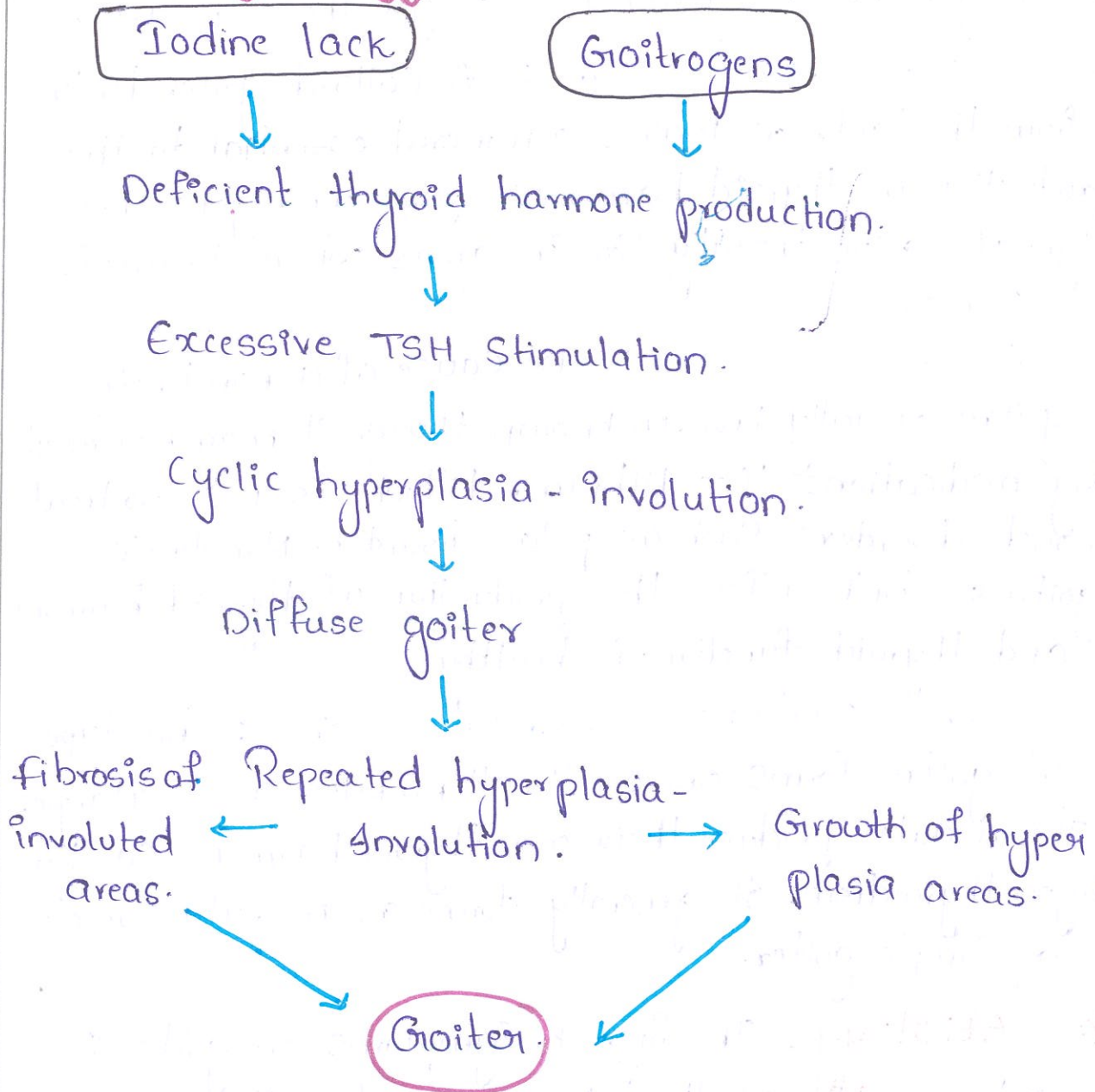
iii) **Toxic nodular or multinodular goiter**: This type of goiter forms one or small nodules as it enlarges. The nodules produce their own thyroid hormone, causing hyperthyroidism. It generally forms as an extension of a simple goiter.

* **etiology**: The sign & symptoms of goiter is enlargement of the thyroid gland in the throat. It may appear as a smooth diffuse swelling or with an irregular surface due to the presence of nodules. It moves vertically during swallowing, difficulty swallowing or breathing, coughing, hoarseness of voice, dizziness when raise arm above the head & also the



Symptoms of hyperthyroidism or hypothyroidism may be present.

Pathophysiology:-



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Thyroid Nodules:

Introduction:- Thyroid Nodule a discrete lesion within the thyroid gland. It is radiologically distinct from the surrounding thyroid parenchyma.

Nodules may be solitary, multiple, cystic or solid. nodules in the thyroid gland are a common entity and are detected in approximately 5% to 7% of the adult population by physical examination alone.

Although more than 90% of detected nodules are clinically insignificant benign lesions. They may represent thyroid cancer in approximately 4% to 6.5% of cases.

etiology: A broad spectrum of disorders is associated with nodules of the thyroid, from benign to malignant conditions that may have indolent or very aggressive clinical courses.

Ionizing radiation is known risk factor for both benign & malignant nodules of the thyroid. This population may develop thyroid nodules.

Other factors that lead to increased risk of thyroid nodules including smoking, obesity, metabolic syndrome, alcohol consumption, ^{hyper}increased



levels of insulin like growth factor-I & uterine fibrosis.

Epidemiology: The risk of thyroid nodules is higher with increasing age, female gender, iron deficiency, and history of thyroid irradiation. Long term survivors of hematopoietic stem cell transplantation are at higher risk of 2° thyroid carcinoma with a relative risk of 3.26.

In the adult population, physical examination of the thyroid nodules are approximately 4 times more common in women than men.

Pathophysiology:

The pathophysiology of a thyroid nodule will vary depending on the lesion. Several disorders may cause thyroid nodules. The most common type of benign macro follicular nodules, representing either monoclonal adenomas or colloid nodules in multinodular goitre. The latter represents the expansion of relatively monoclonal cells replicating in a nodular fashion.

Follicular neoplasms may represent a diagnostic problem as these only differ from follicular carcinomas by lack of vascular or capsular invasion.



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Thyroid Nodule

FNAB

Benign	malignant	Suspicious	Non diagnostic
	Surgery	lobectomy with frozen Section	1st or 2nd non-diagnostic bioscopy
Repeated non diagnostic after guided bioscopy		further Surgery based on diagnosis	Repeat FNAB (Ultra Sound guided)

FNAB → fine needle aspiration bioscopy.
 US → Ultra Sonoscopy.

Medication :

- Antithyroid medications.
- Methimazole.
- propylthiouracil.

Introduction :

The thyroid is a gland in the neck. Thyroid Cancer is a common type of cancer. It accounts for 1 to 5% of all cancers Causes world wide. As medical technology advances, more cases of thyroid cancer are being diagnosed early.



The earlier treatment begins, the better the chances of a cure. Most cases of thyroid cancer are curable with treatment.

It produces thyroid hormones called thyroxine (T_4) and triiodothyronine (T_3). These hormones are very important & help control the body's metabolism (use of energy). The thyroid gland also produces calcitonin. This helps control the amounts of calcium & phosphate salts in the body.

It is a abnormal proliferation of cells of thyroid gland.

- Types:
- 1) papillary carcinoma.
 - 2) follicular carcinoma.
 - 3) Medullary thyroid carcinoma.
 - 4) Anaplastic carcinoma.

* Causes :-

Iodine :- Iodine - deficient diet may lead to increase the TSH level & considered goitrogenic.

Thyroiditis: (Hashimoto's disease) many develop into a form of cancer called lymphoma.

- External radiation
- Increased age.
- Nuclear power plant accident.
- Food Source contaminated with radioactivity.



Etiology: Most thyroid cancers don't cause any signs or symptoms early in the disease. As thyroid cancer grows, it may cause.

- A lump (nodule) that can be felt through the skin on your neck.
- A feeling that close-fitting shirt collars are becoming too tight.
- changes to your voice, including increasing hoarseness.
- Swollen lymph nodes in your neck.
- pain in your neck and doctor.

Pathophysiology:

Thyroid cancer is associated with thyroid enlargement well differentiated and encapsulated tumors that are palpable cause changes in voice difficulties in breathing. usually the tumour does not spread or extend in other tissues.

Thyroid cancer cells displays an impaired uptake of iodine & reduced iodine capacity due to functional differentiation that is often correlated with histological pattern. Iodine uptake can be increased in thyroid carcinoma by a thyroid stimulating hormone.



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Abnormal iodoproteins are also known to be synthesized in thyroid cancer & secreted into the circulation. Furthermore, thyroid tumors spread produce & secrete excessive amounts of calcitonin. Calcitonin acts to lower blood calcium concentration by inhibiting the reabsorption of bone Riccabona (1987).

Medications:

- Cobazantinib - S-malate.
- Capresia (vandetanib).
- Cometriq (cobazantinib - S-malate).
- Debrofenib mesylate.
- Dolutubian hydrochloride.
- Graureto (pralsettinib).
- Lenvatinib mesylate.
- lenvima (lenvatinib-mesylate).



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AIDS

Definition:

- AIDS is a chronic, life threatening condition which is caused by HIV disease.
- It is a Sexually Transmitted disorder.
- HIV attacks the person by damaging cells of immune system.
- And the symptoms may vary from one person to another.
- In some host it may be asymptomatic and in initial stages the symptoms like Sore throat, illness, fever, fatigue may be seen after 2-8 weeks.
- The virus multiplies in the lymph nodes & slowly destroy the T-helper cells (CD4) & start formation into AIDS.
- In some cases the symptoms may not appear up to 8-9 years after initial infection.
- In 1993, The CDC (Center for drug control & prevention) redefined AIDS by the presence of HIV infection by using some tests.
- The normal count of CD4 cells to be 600 - 1000



→ But the person is infected with HIV is always to be less than 200.

→ The Signs & Symptoms include :

High fever, night sweats, chills dry cough for several weeks, sour throat, & persistent weight loss, lesions in the tongue, head ache, blurred vision.

Route of Transmission :

HIV can be transmitted by 3 major routes.

- ① Sexual route
- ② By blood products
- ③ Mother to child.

① Sexual Route :

When one person is infected with HIV & he or she is infected with the sexual secretion to other person by unprotected sex.

② By blood products :

When the blood transfusion from 1 person to another person the HIV may be infected.

→ and also by using infected needles to the another person, HIV may be infected.



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3) Mother - child :

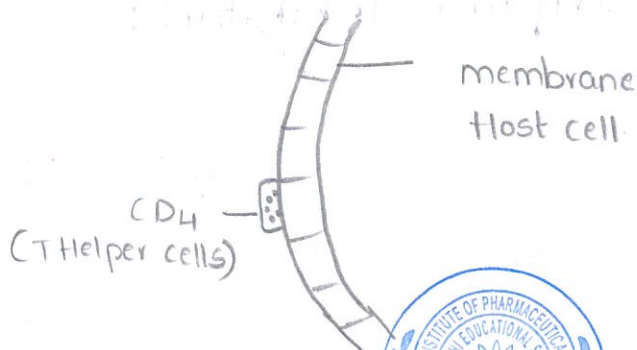
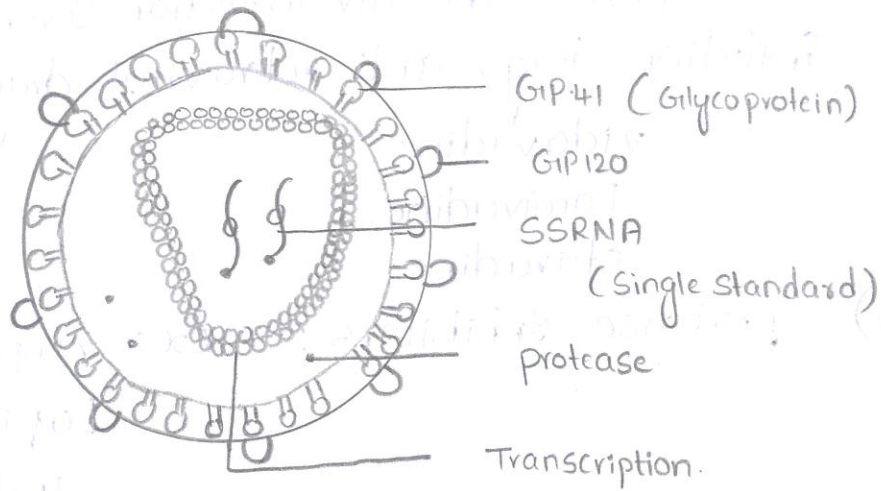
HIV may be transmitted from mother to child in the last weeks of the pregnancy and the rate of transmission is about 25%.

→ It can be prevented by using several medication in the rate of prevention is about 1%.

→ By giving milk to the child the HIV is also infected and the rate of transmission of HIV by giving breast milk is about 2%.

Pathogenesis :

reverse
integrase,
protease.



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Diagnosis :-

→ There are 2 test for diagnosing HIV

① ELISA

② Western Blotting Test.

① ELISA :

→ It detects the anti-bodies of virus by using blood sample.

→ If the results may be +ve we have to go for test

→ This test may be useful for detecting HIV antibodies.

→ If both test are leads to +ve then the person conformed with HIV.

* Treatment :

→ To suppress the HIV infection Several anti-viral infection drugs anti retroviral drugs.

zidovudine

Lamivudine

stavudine

2) Protease Inhibitors : Ex: Amprenavir

Lopinavir

Indinavir.

3) Reverse transcriptase Inhibitors:

Tenofovir.

~~Ms~~ 3



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3.2 Project Work :

A project work is a planned and definitely formulated piece of study involving a task or problem taken up by the learner, either individually or in a group, to supplement and apply classroom and laboratory transactions. It follows the approach of Learning by Doing and Learning by Living.

Project work All the students shall undertake a project under the supervision of a teacher and submit a report. The area of the project shall directly relate any one of the elective subject opted by the student in semester VIII. The project shall be carried out in group not exceeding 5 in number. The project report shall be submitted in triplicate (typed & bound copy not less than 25 pages). The internal and external examiner appointed by the University shall evaluate the project at the time of the Practical examinations of other semester(s). Students shall be evaluated in groups for four hours (i.e., about half an hour for a group of five students).

IV B. Pharmacy Project List

Admitted batch -2018

Academic Year- 2021-22

S. No	Batch No.	Registered No.	Name of the Student	Title of the Project	Name of the Guide
1	Batch 1	18T51R0001	Asha P	Evaluation of drug prescription utilization in the pregnant and lactating women a prospective observational studies	Mrs.Madhavi kumari (M Pharm) Pharmacology
2		18T51R0002	B. Bhargavi		
3		18T51R0003	B. Sukanya		
4		18T51R0004	Vidya Sagar		
5		18T51R0005	B. Chandini		
6	Batch 2	18T51R0006	Ch. Meghana	Invitro and Invivo studies on estimation of crude fiber and laxative activity on dry fruits by using Albino rats	Prof.M.Madhu M.Pharm (Accociate Professor)
7		18T51R0007	Ch. Prasanna Laxmi		
8		18T51R0008	D. Poorna Sai		
9		18T51R0009	D. Ruchitha Reddy		
10		18T51R0010	D. Sai Sree		
11	Batch 3	18T51R0011	D. Viharika	Evaluation of Phytochemical Screening and Analgesic activity of Manikara Zapota Ethanolic Extract on Albino by using the Eddie hot plate method	Mr. Chandaka .Madhu (Ph.D)
12		18T51R0012	D. Sai Madhuri		
13		18T51R0014	E. Lahari		
14		18T51R0015	G. Spandana		
15		18T51R0016	G. Sai Harsha		
16	Batch 4	18T51R0017	G. Swetha	Formulation and Evaluation of Herbal	M.Kishana Rekha M.Pharm
17		18T51R0018	G. P. V		

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18		18T51R0020	G. Harika	hair oil by using Flax seeds	
19		18T51R0021	G. P. Sai Ganesh		
20		18T51R0022	G. Kalyani		
21	Batch 5	18T51R0023	G. Rohini	Formulation and Evaluation of Ampicillin Microspheres by using Ionic gelation Technique	Y.Vishnu Vandana M.Pharm
22		18T51R0024	G. Tejaswi		
23		18T51R0025	J. Deepika Rao		
24		18T51R0026	J. Meghana		
25		18T51R0027	K. Ramani		
26	Batch 6	18T51R0028	K. Teja Sree	Phytochemical Analysis of Dried leaves Stalks of Andrographispaniculata	A.H.V.Santhoshi M.Pharm (Ph.D)
27		18T51R0029	K. Himaj		
28		18T51R0030	K. Naresh		
29		18T51R0031	K. Rama Laxmi		
30		18T51R0032	K. Niharika		
31	Batch 7	18T51R0033	K. Prameela	Synthesis Characterazation and Antimicrobial Evaluation of N-Mannich bases of Benzimidazole derivatives	Mr.G.Durga rao (M.Pharm)
32		18T51R0034	K. Neeraja		
33		18T51R0035	K. Prathap Kumar		
34		18T51R0036	K. Maneesha		
35		18T51R0038	M. Divya Sai		
36	Batch 8	18T51R0039	M. Revathi	Invitro Evaluation of Anti-Obesity Activity of Methanolic Extract of Whole plant of Achyranthes Aspera	Mrs. A.H.V Santhoshi M.Pharm(Ph.D)
37		18T51R0040	M. Kusuma		
38		18T51R0041	M. Joshna		
39		18T51R0042	M. Durga Bhavani		
40		18T51R0043	M. Sunitha		
41	Batch 9	18T51R0044	M. Deepthi	Method Development and Validation of Theophylline by using UV-Visible Spectroscopy	B. Chaithanya M.Pharm (Ph.D)
42		18T51R0045	M. Savithri		
43		18T51R0046	M. Sowmya		
44		18T51R0047	M. Praveen Kumar		
45		18T51R0048	M. Tarun		
46	Batch 10	18T51R0049	N. V. L. Anusha	Formulation and Evaluation of Herbal Cream with Different Herbal Extract for Wound Healing	Mrs. Bhagya sri M. Pharm
47		18T51R0050	P. Sneha		
48		18T51R0052	P. Joshna		
49		18T51R0054	P. Nirosha		
50		18T51R0055	P. Meena Kumari		
51	Batch 11	18T51R0056	P. Neha	Phyto chemical studies of Lantana Camara flowers	Mr. M.B.V. Raju M .Pharm (Ph. D)
52		18T51R0057	P. Chandrika		
53		18T51R0058	P. Viswa Teja		
54		18T51R0059	P. Rashmitha		
55		18T51R0060	P. Bharathi		



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56	Batch 12	18T51R0061	P. Shravya	Phyto chemical and Anti-Bacterial Activity of Cissus Quadrangularis	Mr. A. Nanaji (M. Pharm)
57		18T51R0062	R. Surekha		
58		18T51R0063	Pramojeetha Rana		
59		18T51R0064	R. Hemalatha		
60		18T51R0065	R. Prasanthi		
61	Batch 13	18T51R0066	R. Sai Preethi	Formulation and In-Vitro Evaluation of Levocetirizine Dihydrochloride Oro dispersible Strips by using natural polymer	Mrs. Sravani Boyapati M. Pharm (Ph.D)
62		18T51R0067	S. Priyanka		
63		18T51R0068	S. Abdul Kalam		
64		18T51R0069	S. Usha Ramani		
65		18T51R0070	S. Sridevi		
66	Batch 14	18T51R0073	T. Anitha	Method development and validation of Simultaneous Estimation Atorvastatin Calcium and Amlodipine Besylate in tablet Dosage form by RP-HPLC	B.Aruna (M.Pharm)
67		18T51R0074	T. Tirupathi		
68		18T51R0075	T. Satish		
69		18T51R0077	T. Teena Mounika		
70	Batch 15	18T51R0078	U. Latha	Formulation and Evaluation of Multipurpose Oil from Water melon Seeds	S. Chandra shekar M.Pharm
71		18T51R0079	V. Aravind		
72		18T51R0080	V. Gowthami		
73		18T51R0081	V. Praveen		
74	Batch 17	18T51R0082	V. Raj kamal	Evaluation of usage pattern of Antibiotics and over the counter (OTC) medication in Visakhapatnam Area	Mr. V. Uma Shankar M. Pharm (Ph. D)
75		18T51R0083	Y. Thrinadh Reddy		
76		18T51R0084	y. Iswarya devi		
77		17T51R0075	S. Chinna Reddy		



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V Pharm. D-Project List

Admitted batch -2017

Academic Year- 2021-22

S. No.	Batch Number	Roll Number	Name of the Student	Project Title	Name of the Guide
1	Batch 1	17T51T0001	A. Sanjana	Evaluation of Quality of Life(QOL), Depression prevalence and distress in Diabetic mellitus diagnosed patients of a tertiary care teaching hospital-A prospective interventional analytical study	V. Uma Sankar (M. Pharm)
2		17T51T0006	D.K.S Vasantha Lakshmi		
3		17T51T0016	M. Navya Sree		
4		17T51T0019	P. Ahkila		
		16T51T0003	B. Hemantha Nissi		
5	Batch 2	17T51T0003	C. Tanish	Evaluation of COVID-19 Infection and outcomes various COVID-19 Treatment strategies and safety measures in pre and post COVID scenario	Dr. Teja Sree
6		17T51T0005	Ch. Sai Himabindu		
7		17T51T0011	K. Sreevani		
8		21T51T0113	Nayab shaik		
9	Batch 3	17T51T0010	K. Manisha	Assessment of depression and anxiety level in cancer by clinical pharmacist – A prospective interventional study	Dr. V. Randeep Raj
10		17T51T0020	P. Dhanya Swaroopa		
11		17T51T0023	Shruthi Bhardwaj		
12		17T51T0024	V. Geetha		
13	Batch 4	17T51T0004	B. Niharika	Assessment of quality of life in COVID-19 patients post recovery – An observational Analytical Study	Dr. B. Tejasree Pharm. D
14		17T51T0008	G. Sai Padmini		
15		17T51T0021	P. Sumathya		
		17T51T0022	S. Guna Sekhar		
16		17T51T0026	M. Ratna Jyothirmai		
17	Batch 5	17T51T0007	D. Padma Priya	Chronic kidney disease and its complete scenario. Management of chronic kidney disease by clinical pharmacists. A prospective interventional study.	V. Uma Sankar
17		17T51T0015	Kolla. Jagadeeshwari		
19		17T51T0017	M. Abhisekhar		
20		17T51T0018	N. Prema kumari		
21		17T51T0002	B. Divya V	A prospective	T. Rushi Naidu



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22	Batch 6	17T51T0009	G. Himaja	observational study of drug utilization Evaluation in pregnant women at tertiary care teaching hospital	Pharm.D
		17T51T0014	K. Karishma		
23		17T51T0025	T. Mounika		
24		20T51T0101	S. Bindu Suneetha		



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FORMULATION AND EVALUATION OF AMPICILLIN
MICROSPHERES BY USING IONIC GELATION TECHNIQUE



Thesis submitted to

JNTUK, Kakinada. A.P.,

In the partial fulfillment of the regulations for the award of the degree of

BACHELOR OF PHARMACY

Submitted by

G. ROHINI	(18T51R0023)
G. TEJASWI	(18T51R0024)
J. DEEPIKA RAO	(18T51R0025)
J. MEGHANA	(18T51R0026)
K. RAMANI	(18T51R0027)

Under the joint guidance of

Y. VISHNU VANDANA M. Pharm

Associate professor

Prof. Dr. M.B.V. RAJU M. Pharm

professor and principal



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CERTIFICATE BY THE PRINCIPAL

I here certify the present work embodied in this thesis entitled "FORMULATION AND EVALUATION OF AMPICILLIN MICROSPHERES BY USING IONIC GELATION TECHNIQUE" is a genuine research work carried out by G. ROHINI Reg No. 18T51R0023, G. TEJASWI Reg No. 18T51R0024, J. DEEPIKA RAO Reg No. 18T51R0025, J. MEGHANA Reg No. 18T51R0026, K. RAMANI Reg No. 18T51R0027 of IV year B.PHARMACY under the joint guidance of Y. VISHNU VANDANA, M.Pharm, Associate professor and Professor and Principal Dr. M.B.V RAJU, M.Pharm, PhD, at AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES during the academic year 2018-2022. It is further certified that this work or any part of this has not been previously formed the basis for the award of degree, diploma, fellowship of other similar titles and has not submitted to any other University/ College

Dr. M.B. VENKATAPATHI RAJU M. Pharm, PhD

Professor and Principal
PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram (M)
Visakhapatnam (Dis)

EXTERNAL EXAMINER

INTERNAL EXAMINER



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Y. Vishnu Vandana

Y. VISHNU VANDANA M.Pharm

Associate Professor

M.B.V. Raju

Prof. Dr. M.B.V. RAJU M. Pharm

Professor and Principal
PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram (M)
Visakhapatnam (Dis)

Place : Vizianagaram

Date : 24/06/2022

**“CHRONIC KIDNEY DISEASE AND ITS COMPLETE SCENARIO
MANAGEMENT OF CHRONIC KIDNEY DISEASE BY CLINICAL
PHARMACISTS - A PROSPECTIVE INTERVENTIONAL STUDY “**

A project report submitted to



JNTUK, KAKINADA, AP.

In partial fulfillment of the regulations for the Award of degree of

DOCTOR OF PHARMACY

Submitted by

DAMODARA PADMA PRIYA - 17T51T0007

KOLLA JAGADEESHWARI - 17T51T0015

MYLAPALLI ABHISEKHAR - 17T51T0017

NIMMALA PREMAKUMARI - 17T51T0018



Under the guidance of

Associate. Professor. Mr. UMA SANKAR VIRITI. M. Pharm, P.G.D.E.S., (Ph. D)

**AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES CHERUKUPALLY(V),
BHOGAPURAM (M) , VIZIANAGRAM (DIST), AP – 531162.**

2021 – 2022



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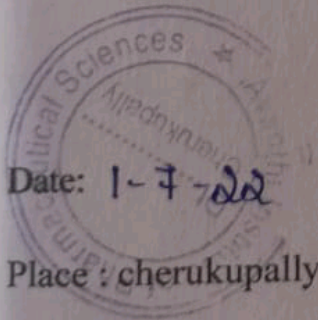
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Date: 1-7-22

Place : cherukupally

V. Uma Sankar

Mr. UMA SANKAR VIRITI M.pharm, P.G.D.E.S.,(Ph.D).



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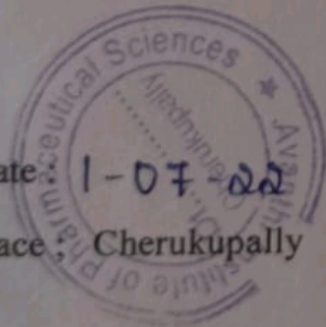
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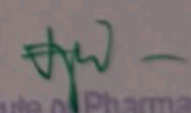
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Date: 1-07-22
Place: Cherukupally




Avanathi Institute of Pharmaceutical Sciences
Dr.M.B.venkatapathiRaju
CHITTIVALASA S.A.O.
Bhogapuram Principal, Vizianagaram Dist

**NEW HIGHLY EFFECTIVE METHOD FOR THE ESTIMATION
OF TRIFLURIDINE AND TIPIRACIL BY USING RP-HPLC**

A Thesis submitted to

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, KAKINADA



8

In Partial Fulfillment of the Requirements for the Award of Degree

MASTER OF PHARMACY

IN

PHARMACEUTICAL ANALYSIS

by

SAYYAD ASHIYA PARVEEN

(Enrollment No: - 20T51S1606)

Under the Guidance of

B. CHAITANYA *M.Pharm (Ph.D)*

ASSOCIATE PROFESSOR



Estd. 2005

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CHERUKUPALLY (VIL), CHITTIVALASA(P.O), BHOGAPURAM(M), VIZIANAGARAM(DT)

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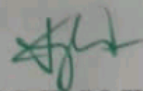
CERTIFICATE

This is to certify that the thesis entitled "NEW HIGHLY EFFECTIVE METHOD FOR THE ESTIMATION OF TRIFLURIDINE AND TIPIRACIL BY USING RP-HPLC" is being submitted by S. ASHIYA PARVEEN (Reg no :- 20T51S1606) in partial fulfillment of curricular requirements Master of Pharmacy degree from Jawaharlal Nehru Technological University, Kakinada, Andhra Pradesh under supervision of B.CHAITANYA(M.pharm Ph.D), Associate professor, Department of Pharmaceutical Analysis during academic year 2020-2022. The work is original and has not been submitted in part or full for the award of other degree or diploma.

Station: Cherukupally.

Date : 05/12/2022




Dr.M.B.V.RAJU,
M.Pharmacy, Ph .D,
PRINCIPAL.

Principal
Avanthi Institute of Pharmaceutical Sciences
CHERUKUPALLY (V)
CHITTIVALASA S.A.O
Bhogapuram (M), Vizianagaram Dist.



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Station: Cherukupally.

Date : 05/12/2022

B. Chaitanya

B.CHAITANYA M.Pharm(Ph.D)

ASSOCIATE PROFESSOR



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3.3 CASE STUDY BY PHARM D STUDENTS

Pharmacy Case Studies helps students understand the application of therapeutics in clinical practice. It tests knowledge gained within the individual areas of law and ethics, pharmaceutics, pharmacology and pathology by examples, bringing together various areas taught on the degree course. Case studies of increasing complexity in strands of learning from across the pharmacy curriculum. Scenarios include both community and hospital pharmacy situations, as suited to the disease and pharmaceutical care provision. Each chapter contains five case studies with questions and answers increasing in complexity from those for first year students through to cases designed for fourth year/pre-registration level.



Hyman

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**AVANTHI INSTITUTE OF
PHARMACEUTICAL SCIENCES
CHERUKUPALLY, TAGARAPUVALASA, VIZIANAGARAM
DOCTOR OF PHARMACY
PATIENT PROFILE FORM**

Name: *A. Sravani* I.P. No: *37898* Age: *25* Gender: *F* Department: *GM ward*

Unit: *T* D.O.A: D.O.D: Address:

A) SUBJECTIVE EVIDENCE:

- Chief complaint: *Complaint of vomitings & Nausea with light hypochondrial pain since 5 days.*
- History of present illness: *No history of similar complaint.*
- Past medical history:
- Past medication history:
- Family history:
- Social history:

Smoker: *Y/N*

Alcoholic: *Y/N*

Occupation:

B) OBJECTIVE EVIDENCE:

Vitals	Day1	Day2	Day3	Day4	Day5	Day6	Day7
Blood pressure	<i>130/80</i>	<i>100/70</i>					
Respiratory rate <i>Heart</i>	<i>80</i>	<i>70</i>					
Temperature	<i>Afebrile</i>	<i>Afebrile</i>					

PHYSICAL EXAMINATION:

Respiratory System	B/L NICKS						
Cardio Vascular System	S, S, ⊕						
Central Nervous System							
Abdomen	P/A soft						

C) LAB INVESTIGATIONS:

CBC

Hb - 14.4

WBC - 7,500

DLC

N - 75

lymphocytes - 20

monocytes - 5

platelet count - 1.23

LFT

SBT - 0.9 mg

SGPT - 362.9 mg/dl

D) DIAGNOSIS:

Acute viral hepatitis

E) ASSESSMENT:

1) Aetiology:

a) Cause of the problem:

hepatitis

b) Does the patient have any risk factors:

No

c) Is this a drug-induced disease:

No

2) Need for therapy:

Nature of the problem: Mild / Moderate / Severe / Acute / Chronic:

F) PLAN:

- Goals for the problem:

To relieve signs & symptoms to restore normal health condition

- Recommend treatment: continue treatment/discontinue treatment:
(If discontinued specify the reason)

Continue

Suggest alternate therapy (if current therapy is not working or results in adverse effect)

Patient Education:

- 1) About disease:

Acute viral hepatitis is inflammation of liver caused by infection with one of five hepatitis viruses.

- 2) Use of the drugs:

Ceftriaxone - Antibiotic
Pantop - decrease the GI secretion

3) Current therapy:

Drug name	Dose	Dosage form & R.O.A	Frequency	Duration Of the Treatment							
				1	2	3	4	5	6	7	
Inj. Ceftriaxone	1 gm	IV	BD	✓	✓	✓					
Inj. pantop	40 mg	IV	BD	✓	✓	✓	✓	✓			
Inj. Ondansetron	8 mg	IV	#/s	✓	✓	✓	✓	✓			
P. BC		P/O	BD	✓	✓	✓	✓	✓			

a) The necessity of current drugs (justify):

Inj. Ceftriaxone - Antibiotic - decrease the cell wall synthesis
 Inj. pantop - decrease the gastric acid secretion

b) Patients response to treatment:

Yes

c) Any adverse effects:

No

d) Is patient adherent to the treatment:

Yes

e) Correctness of Dose / Dosage form / R.O.A of drug regimen:

Dose

Administration Guidelines:

Ceftriaxone - 2mg.
Pantop - 40mg.

Dietary changes:

Maintain healthy caloric intake
Drink enough fluids.

Lifestyle modifications:

- maintain proper hygienic conditions.
- Drink more fluids
- Reduce stress.

Precautions:



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(Approved by AICTE, PCI, Recognized by the Govt. of A.P. & Affiliated to J.N.T.U.K, Kakinada)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram -531162.

www.avanthipharma.ac.in, principalavanthit5@gmail.com

3.4 PRACTICE SCHOOL FOR B-PHARM

Practice School is an innovative concept in undergraduate engineering education, which creates a bridge between conventional classroom learning and gaining valuable real-life experience in an industry or research organization.

In the VII semester, every candidate shall undergo practice school for a period of 150 hours evenly distributed throughout the semester. The student shall opt any one of the domains for practice school declared by the program committee from time to time. At the end of the practice school, every student shall submit a printed report (in triplicate) on the practice school he/she attended (not more than 25 pages). Along with the exams of semester VII, the report submitted by the student, knowledge and skills acquired by the student through practice school shall be evaluated by the subject experts at college level and grade point shall be awarded.



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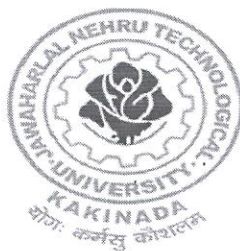
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A REVIEW ON MULTIPLE SCLEROSIS



Practice school submitted to

JNTUK, KAKINADA, A.P

**In Partial Fulfillment for the
Award of Degree of**

BACHELOR OF PHARMACY

Submitted by
B.Chandini (18T5 IR0005)

Under the guidance of

Mrs.B.Bhagyasri (M.Pharm)

Associate Professor



ESTD : 2005

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CHERUKUPALLY, VIZIANAGARAM DISTRICT-531162, A.P.
(2021-2022)**

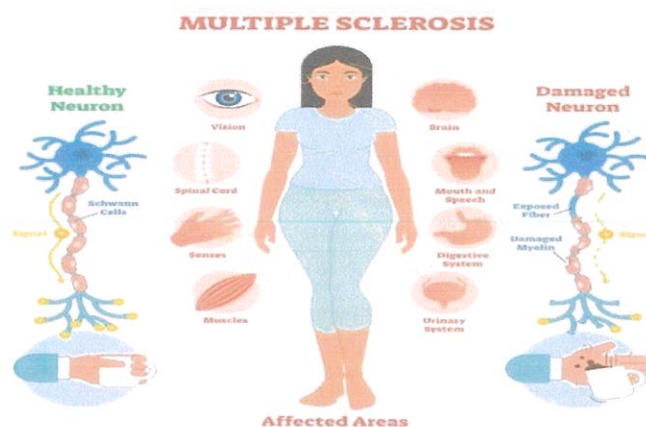


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MULTIPLE SCLEROSIS

Introduction :



Multiple sclerosis (MS) is a chronic autoimmune disease that affects the central nervous system, specifically the brain and spinal cord. It is characterized by the progressive destruction of the protective covering of nerve fibers, known as myelin, leading to impaired communication between nerve cells. The etiology of MS remains largely unknown, but it is believed to involve a combination of genetic and environmental factors. Epidemiological studies have shown that MS has a higher prevalence in certain geographical areas, suggesting a role for environmental factors such as sunlight exposure. The underlying pathophysiology involves the infiltration of immune cells into the central nervous system, leading to inflammation and subsequent demyelination.

Definition and background information about multiple sclerosis (MS).

Multiple sclerosis (MS) is a chronic autoimmune disease characterized by the destruction of the myelin sheath in the central nervous system (CNS), leading to a range of neurological impairments. The exact etiology of MS remains unknown; however, it is believed to involve a combination of genetic and environmental factors. MS affects approximately 2.8 million individuals worldwide, with prevalence varying geographically. The disease most commonly



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affects young adults, with the average age of onset being around 30 years old. Women are also more likely to develop MS than men, with a female-to-male ratio of about 2:1. The pathophysiology of MS involves an abnormal immune response that leads to inflammation and demyelination within the CNS, resulting in disrupted neuronal signaling. Symptoms of MS can vary widely depending on the location and severity of the demyelinating lesions, but commonly include fatigue, muscle weakness, numbness or tingling, difficulties with coordination and balance, visual disturbances, and cognitive impairments. **Importance of researching and understanding MS.**

Multiple sclerosis (MS) is a complex and debilitating neurological disorder that affects millions of people worldwide. In order to effectively manage this condition, researching and understanding MS has become increasingly important. Firstly, conducting research on MS helps to unravel the underlying etiology of the disease. By understanding the causative factors, scientists and doctors can develop targeted therapies and preventive measures. Additionally, research plays a critical role in identifying the epidemiology of MS. This enables healthcare professionals to determine the prevalence and incidence rates, as well as the demographic groups that are at higher risk of developing the disease.

key points :

Brief summary of the key points discussed throughout the paper. Firstly, the introduction lays the groundwork for understanding multiple sclerosis (MS) by defining the disease and highlighting its impact on individuals and society. The etiology section explores the possible causes and risk factors associated with MS, including genetic predisposition and environmental triggers. The epidemiology section provides an overview of the prevalence and incidence of MS globally, with particular emphasis on geographic and demographic patterns. In the pathophysiology section, the essay delves into the underlying mechanisms that contribute to the development and progression of MS, focusing on demyelination and immune system dysfunction.

Etiology :

The etiology of multiple sclerosis (MS) remains unknown, and there is no consensus on the exact cause of the disease. However, research suggests that a combination of genetic and environmental factors play a role in MS development. Genetic studies have identified certain susceptible genes related to the immune system, such as HLA-DRB1*15:01, that increase the



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risk of developing MS. Moreover, epidemiological studies have highlighted the importance of environmental factors, including viral infections, vitamin D deficiency, and smoking, in triggering the onset of MS symptoms.

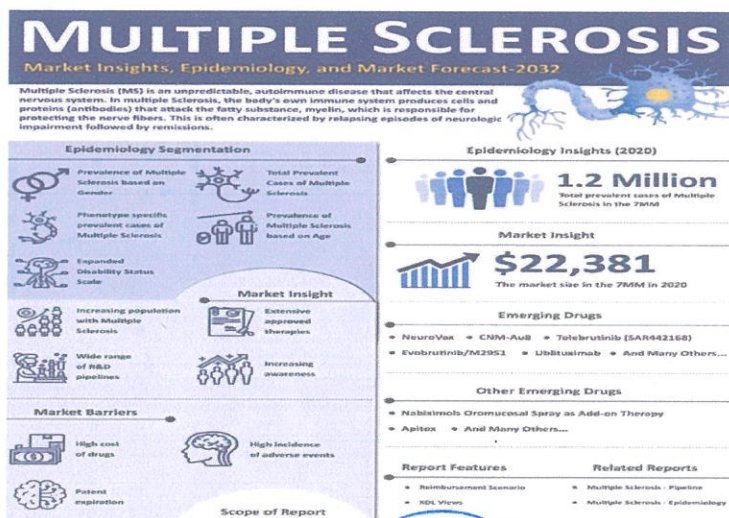
Discussion on the potential causes and risk factors of MS.

Multiple sclerosis (MS) is a chronic illness of the central nervous system characterized by the immune system mistakenly attacking the protective covering of nerve fibers, known as the myelin sheath. The exact cause of MS is unknown, although researchers believe it to be a combination of genetic and environmental factors. There is evidence to suggest that certain genes can predispose individuals to develop MS, with some genes increasing the risk while others provide protection.

Genetic, environmental, and immune system involvement in MS.

In conclusion, multiple sclerosis (MS) is a complex disease with a multifactorial etiology. Genetic, environmental, and immune system factors are all believed to contribute to the development and progression of MS. There is evidence of a genetic component, as susceptibility genes have been identified, particularly within the major histocompatibility complex. However, it is clear that genetics alone cannot explain the full spectrum of MS phenotypes, suggesting that environmental factors are also involved. Environmental factors such as viral infections, vitamin D deficiency, and smoking have all been associated with an increased risk of developing MS

Epidemiology :



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The epidemiology of multiple sclerosis (MS) is an important aspect to understand the impact and prevalence of this disease. Epidemiological studies have shown that the prevalence of MS varies geographically, with higher rates reported in regions further away from the equator. This observation suggests that environmental factors, such as sunlight exposure and vitamin D levels, may play a role in the development of MS. Additionally, age and genetic factors have also been found to influence the risk of developing MS. Studies have demonstrated a higher incidence of MS in individuals of European descent and a lower incidence in individuals of Asian and African descent.

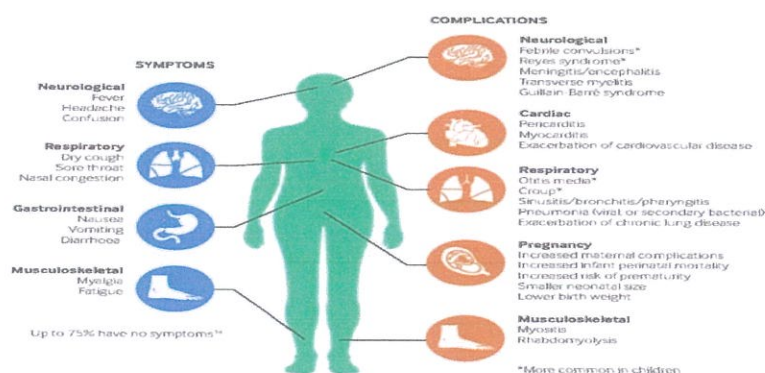
Global prevalence and incidence rates of MS

vary significantly across different regions of the world. Several studies have reported an increasing trend in the prevalence of MS in various countries. For instance, a study conducted in Norway found a steady increase in the prevalence of MS from 115 to 160 cases per 100,000 individuals over a 60-year period. Similarly, data from a study in Canada revealed an increasing prevalence rate of MS from 182 to 240 cases per 100,000 individuals between 1964 and 1994. In contrast, the prevalence of MS in Asian countries such as Japan and China remains relatively low, ranging from 0.6 to 3.8 cases per 100,000 individuals.

Demographic and geographic patterns of MS.

Demographic and geographic patterns of Multiple Sclerosis (MS) play a crucial role in understanding the various factors that contribute to the development and distribution of this disease. Studies have consistently shown that MS exhibits notable geographic variation, with higher prevalence rates observed in certain regions of the world. For instance, MS is more prevalent in temperate zones, such as Northern Europe, North America, and Southern Australia. Conversely, lower prevalence is observed in equatorial areas and Africa

Symptoms :



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Symptoms of multiple sclerosis (MS) are highly variable and can fluctuate over time. They arise from the disruption and damage occurring in the central nervous system, which affects the transmission of signals between the brain and the rest of the body. Common symptoms include fatigue, weakness, impaired coordination and balance, muscle spasms, tingling, numbness, and difficulties with speech and swallowing. These symptoms can significantly impact an individual's daily activities and quality of life.

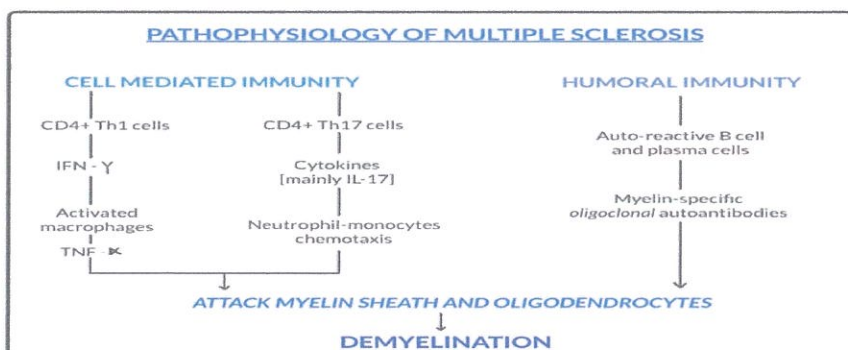
Overview of common symptoms experienced by individuals with MS.

Individuals with multiple sclerosis (MS) commonly experience a wide range of symptoms affecting various body systems. Neurological symptoms often observed include fatigue, muscle weakness, numbness or tingling, and difficulties with coordination and balance. Additionally, individuals with MS frequently report sensory symptoms like pain, altered sensation (such as pins and needles), and problems with vision, such as blurred or double vision. Cognitive impairments such as memory issues, attention deficit, and difficulties with problem-solving and decision-making are also frequently seen in individuals with MS.

Impact of symptoms on physical, cognitive, and emotional well-being.

Multiple sclerosis (MS) is characterized by a wide range of symptoms that significantly impact the physical, cognitive, and emotional well-being of affected individuals. Physical symptoms can include muscle weakness, fatigue, balance problems, and difficulties with coordination and mobility. These physical impairments can greatly limit an individual's ability to perform daily activities, thereby affecting their overall quality of life. Cognitive symptoms such as memory loss, difficulties with concentration and attention, and impaired decision-making skills can lead to challenges in completing tasks and participating in social interactions.

Pathophysiology :



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commonly employed to support the clinical findings and assist in ruling out other potential causes of similar symptoms.

A. Diagnostic tests and criteria used to identify MS.

A. Diagnostic tests and criteria used to identify multiple sclerosis (MS) include a combination of clinical evaluation, imaging techniques, and laboratory tests. The clinical evaluation involves assessing the patient's medical history, conducting a physical examination, and observing the presence of characteristic symptoms of MS such as sensory disturbances, motor dysfunction, and visual impairments. Magnetic resonance imaging (MRI) is a key imaging technique used to visualize the presence of lesions in the central nervous system (CNS), commonly found in MS patients. MRI helps identify the location, size, and number of lesions, aiding in the diagnostic process. Furthermore, laboratory tests are conducted to rule out other possible causes of the observed symptoms, as there is no specific biomarker for MS.

B. Challenges and advancements in diagnosing MS.

Advancing the diagnosis of multiple sclerosis (MS) has encountered several challenges. Many of these challenges come from the complexity of the disease itself, which involves a wide range of symptoms and a variable course. The lack of specific and reliable diagnostic tests is one such challenge. Currently, the diagnosis of MS relies on a combination of clinical evaluations, medical history, and the examination of the central nervous system using magnetic resonance imaging (MRI). However, these tools are not foolproof, as the symptoms and imaging patterns can overlap with other diseases. This often leads to misdiagnosis or delayed diagnosis.

Treatment :

Treatment Options for Multiple Sclerosis

Although there is no cure yet, people with MS currently have a range of available therapies to help manage the disease and its symptoms.

Check out the guide below to find out more.

Disease-modifying therapies: medications that can alter the course of the disease by suppressing or modulating the immune system and reducing inflammation.

Relapse management therapies: treatments that help to manage relapses, or flare-ups, in which new symptoms arise or existing symptoms worsen.

Symptomatic treatments: therapies that help to manage MS symptoms, including spasticity, fatigue, muscle pain, and visual problems, among others.

Complementary therapies: non-pharmacological interventions, such as physical therapy, diet, and exercise, which may be used in addition to medication to help manage MS and its symptoms.



Principals
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In multiple sclerosis (MS), the pathophysiology is characterized by chronic inflammation, demyelination, axonal degeneration, and gliosis, leading to a wide range of neurological impairments. The autoimmune hypothesis suggests that MS is triggered by a dysregulated immune response against the myelin sheath in the central nervous system (CNS). Autoreactive T lymphocytes are believed to infiltrate the CNS, causing damage to myelin, oligodendrocytes, and neurons. The subsequent breakdown of the blood-brain barrier leads to the infiltration of peripheral immune cells, exacerbating the inflammatory response.

Detailed examination of what happens in the body during MS.

A detailed examination of what happens in the body during multiple sclerosis (MS) reveals a complex interplay of immune dysregulation, inflammation, and demyelination. MS is characterized by the immune system mistakenly attacking the myelin sheath, a protective covering of nerve fibers in the central nervous system (CNS). This immune-mediated response triggers an inflammatory cascade, leading to the destruction of myelin and consequent disruption of nerve impulse transmission. The exact etiology of MS remains unknown, but it is believed to be a combination of genetic and environmental factors.

Immune system dysfunction, neuroinflammation, and myelin damage.

In multiple sclerosis (MS), immune system dysfunction, neuroinflammation, and myelin damage play crucial roles in the pathophysiology of the disease. The immune system, responsible for defending the body against foreign invaders, appears to mistakenly attack the central nervous system (CNS) in individuals with MS. This causes an inflammatory response within the CNS, leading to the activation of various immune cells and secretion of pro-inflammatory molecules. The chronic neuroinflammation, in turn, exacerbates the myelin damage in MS patients.

Diagnosis :

Diagnosis plays a crucial role in identifying and confirming the presence of multiple sclerosis (MS) in patients. It involves a comprehensive assessment of various factors, such as medical history, physical examination, and diagnostic tests. The medical history serves as a valuable tool in establishing any previous episodes of neurological dysfunction, while the physical examination assesses the patient's overall neurological function, including motor skills, sensory perception, and coordination. Diagnostic tests, including magnetic resonance imaging (MRI), cerebrospinal fluid analysis, and evoked potentials, are



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The treatment of multiple sclerosis (MS) is multifaceted and involves a combination of interventions aimed at managing symptoms, reducing disease progression, and improving the quality of life for individuals with the condition. One of the main approaches in MS treatment is the use of disease-modifying therapies (DMTs), which work by modifying the immune system to reduce the frequency and severity of relapses. DMTs can include injectable medications, oral medications, and infusion therapies. In addition to DMTs, supportive therapies play a crucial role in managing specific symptoms experienced by MS patients.

Current treatment options for managing MS symptoms.

Current treatment options for managing MS symptoms have significantly improved in recent years. The management of MS symptoms is largely focused on reducing inflammation, slowing down the progression of the disease, and managing pain. Medications such as corticosteroids are commonly prescribed to reduce inflammation during acute relapses, while disease-modifying therapies are used to slow down the progression of the disease and decrease the frequency and severity of relapses. These therapies work by modulating the immune system or suppressing its activity, thus reducing the frequency and severity of attacks. Additionally, physical therapy is often recommended to manage symptoms such as muscle weakness, spasticity, and balance problems. Rehabilitation programs may include exercises to improve muscle strength, coordination, and mobility.

Disease-modifying therapies and symptom management strategies.

Disease-modifying therapies and symptom management strategies play a crucial role in the overall treatment approach for individuals with multiple sclerosis (MS). Disease-modifying therapies primarily focus on slowing the progression of the disease, reducing the frequency and severity of relapses, and preventing the accumulation of disabilities. These therapies include various immunomodulatory drugs, such as interferon beta and glatiramer acetate, which work by suppressing the immune system's response to the myelin sheath. Additionally, newer medications, such as monoclonal antibodies and sphingosine 1-phosphate receptor modulators, have shown promise in reducing disease activity and promoting remyelination, thus improving overall patient outcomes.



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X. Prevention :

Prevention is a crucial aspect in managing the complex condition of multiple sclerosis (MS). Although the exact cause of MS remains unknown, several risk factors have been identified. These include genetic predisposition, environmental factors, and certain infections. Given the multifactorial nature of MS, prevention strategies should target these risk factors. Promoting a healthy lifestyle, such as regular exercise and a balanced diet, may help reduce the risk of developing MS. Additionally, efforts to minimize exposure to certain environmental factors, such as smoking and high levels of stress, could also contribute to prevention. Vaccinations against common infections associated with MS, such as Epstein-Barr virus, could be another preventive measure. Furthermore, early identification and prompt treatment of MS symptoms may help prevent the progression of the disease and improve long-term outcomes.

Exploring ways to potentially prevent the development of MS.

Several strategies are being investigated to possibly prevent the development of multiple sclerosis (MS). One such approach involves the use of disease-modifying therapies (DMTs) in individuals who are at a higher risk of developing the disease. By targeting the underlying immune dysregulation observed in MS, these DMTs aim to delay or prevent the onset of the disease.

B. Lifestyle modifications and risk reduction strategies.

B. Lifestyle modifications and risk reduction strategies are essential in managing multiple sclerosis (MS) and reducing the risk of developing the disease. Maintaining a healthy lifestyle that includes regular exercise, a balanced diet, and stress reduction techniques can play a significant role in managing symptoms and enhancing overall well-being. Exercise has been shown to improve fatigue, muscle strength, and mobility in individuals with MS. Additionally, a diet rich in fruits, vegetables, whole grains, and lean proteins can provide essential nutrients and antioxidants that support immune function and reduce inflammation.

XI. Conclusions :

In conclusion, multiple sclerosis (MS) is a complex and multifaceted neurological disorder with a wide range of symptoms and consequences for individuals affected by it. Our understanding of the etiology, epidemiology, and pathophysiology of MS has



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improved significantly over the years, shedding light on potential triggers and risk factors involved in the development of the disease. Diagnosis of MS can be challenging due to its diverse clinical manifestations, and a combination of clinical and imaging techniques is often necessary for an accurate identification. Current treatment options aim to slow down the progression of the disease, manage symptoms, and improve patients' quality of life.

Emphasizing the importance of continued research and support for individuals living with MS.

Emphasizing the importance of continued research and support for individuals living with multiple sclerosis (MS) is crucial for improving their quality of life and advancing our understanding of this complex condition. Ongoing research is necessary to uncover the causes and mechanisms behind MS, as well as to identify effective treatments and preventive measures. By investing in research, we can hope to develop more targeted therapeutic approaches that address the specific needs of individuals with MS, potentially leading to improved symptom management and outcomes. Additionally, support systems play a vital role in the lives of those affected by MS

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