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VOYAGE 2023

NEWSLETTER

Department of Pharmacology
GMC, Kottayam

NO.1

Department of Pharmacology, GMC,Kottayam

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MESSAGE FROM PRINCIPAL

DEAR ALL

Drugs and chemicals are the cornerstones to medical treatment.By understanding them well and judiciously using them a doctor saves mankind .

This process of learning is difficult and needs experienced pharmacologists to facilitate this .

The Department of Pharmacology of this institution excel in this venture and now they have brought out this news letter to consolidate the work done.

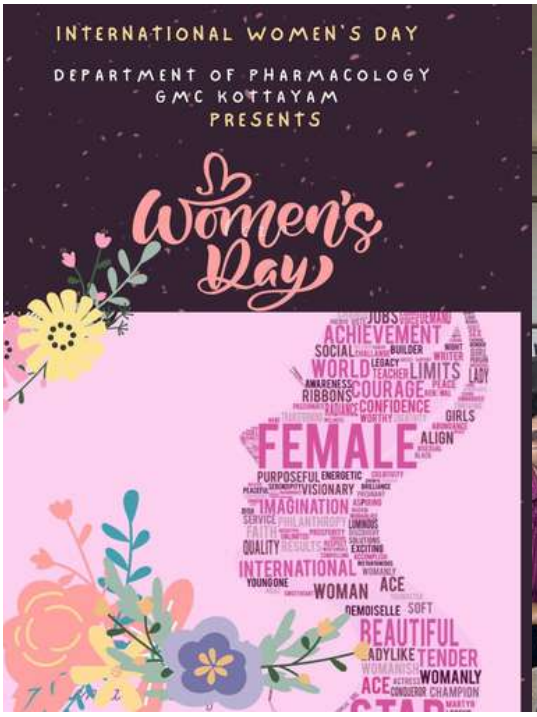
I wish them all success and hope it will encourage more faculty and students to participate in this most enjoyable learning method.

Let success be sustained by your imaginative minds

Dr Sankar Sundaram
PRINCIPAL
GMC KOTTAYAM

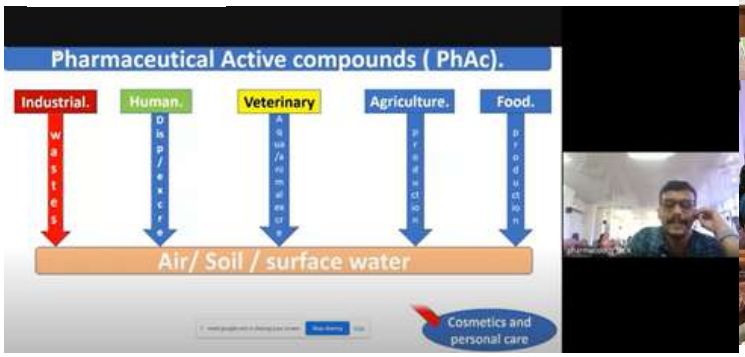
VOYAGE 2023

WOMEN'S DAY 2023



Online release of DigitAll themed video of Women's Day by Dr Sabeena K (https://youtu.be/EmsaEzoH07A?si=-aY_awDWjD0pw2On), Quiz for Junior Residents and Zumba with a message to lead a healthy and active life

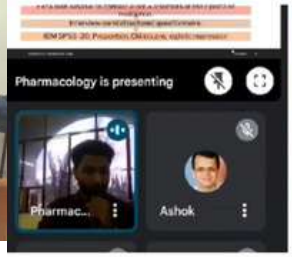
ENVIRONMENTAL DAY 2023 NATIONAL WEBINAR-ECOPHARMACOLOGY



In connection with the World Environment Day celebration and college diamond jubilee year faculty development series we conducted a webinar on Ecopharmacology . Two hundred and seventy five delegates attended the webinar on google platform. Dr Neethu Mohan, JR and Dr Anurag T Alosyous,JR presented their papers on Safe Drug Disposal

NATIONAL TRAINING ON GCP, REGULATORY GUIDELINES AND GRANT WRITING IN CLINICAL RESEARCH

National level training done along with IRB, GMC Kottayam and FERCI in connection with diamond jubilee year faculty development series and Research day Celebrations.88 participants attended the training in hybrid mode.FERCI members Dr Ashok Shenoy and Dr Animesh Jain handled various topics of the workshop.
Research day logo designed by Mr Jobin Vargese 2018 MBBS was released.
Dr Seena, JR Pathology and Mr Anand Andrews 2019 MBBS presented papers



ONAM CELEBRATIONS

For the Onam celebrations our department won the second prize in competition organised by KGMCTA and third prize in competition organised by Staff Welfare Forum for the athapookalam

PHARMACOVIGILANCE SENSITISATION WEEK

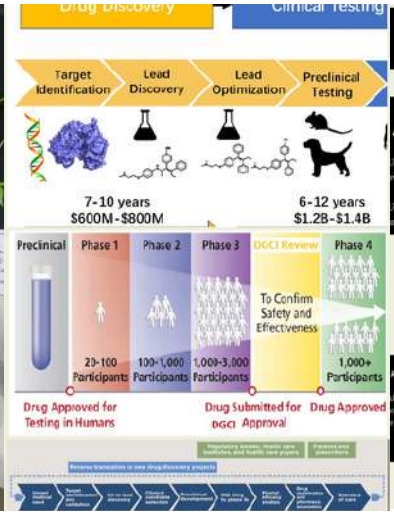
Pharmacovigilance Sensitisation Week was organised under Pharmacovigilance Programme of India from September 17 to 23. CME on Medication Safety was conducted with 196 participants with Dr Hyma V as resource person. Various competitions like Essay weiting, Cross word solving and rel making were organised for MBBS studnets. Public sensitisation was done through Radio FM 89.6(https://www.youtube.com/watch?v=tuEftzw0YlM&list=LL&index=9), Poster distribution amd a short film scripted and directed by Dr Eva John"oru marunn paranje kadha"(https://www.youtube.com/watch?v=8douOc2H5ag&list=LL&index=10) was released

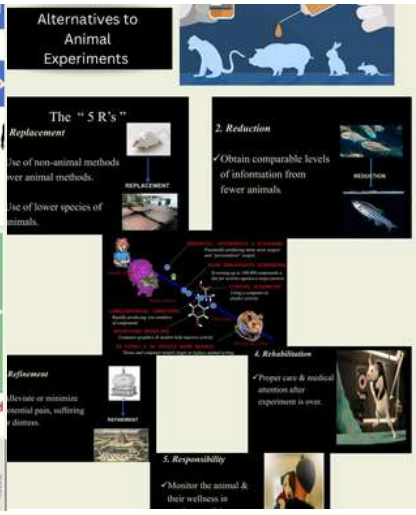
ANTIMICROBIAL AWARENESS WEEK

A public awareness video on the use of antibiotics was released from the Department with the involvement of all faculty, residents and other staff on 17th November 2023 in connection with the World Antimicrobial Resistance Awareness Week 2023 (https://www.youtube.com/watch?v=pQdrm-z5H_o&list=LL&index=6). This video was played during the Medex Exhibition conducted in connection with Diamond Jubilee Celebrations in the Pharmacology stall.

CLICK HERE

MEDEX PHARMACOLOGY STALL





Pharmacology Stall was set up with combined effort of the staff , residents and MBBS students for MEDEX 2023. We thank Ms Shilpa 2020 batch, Mr Arjun Raj 2020 batch and Mr Kailas 2021 batch who stood with us throughout the exhibition.

CHRISTMAS CELEBRATIONS

Christmas was celebrated with message from HOD ,Dr Sujathamadam . Various programmes were organised and gifts were exchanged with love

GLIMPSES OF PRESENTATION & ACADEMIC ACTIVITIES








DR.ARAVIND V

FOURTH RANK

MD/MS REGULAR/SUPPLEMENTARY EXAMINATION 2023

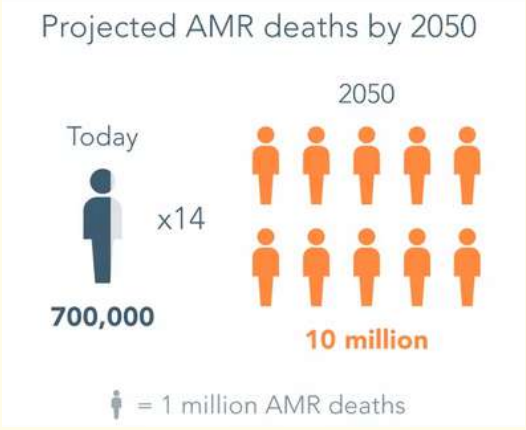
DEPARTMENT OF PHARMACOLOGY

GOVT. MEDICAL COLLEGE KOTTAYAM

The residents and faculty attended various CMEs, conferences,delivered talks, presented oral papers and posters. The MBBS students who performed well in projects and research activities were appreciated. Dr Aravind V secured the 4th KUHS rank in Pharmacology for the MD Pharmacology exam July 2023

ANTIMICROBIAL STEWARDSHIP PROGRAMME

Antimicrobial resistance (AMR) is a global health and development threat. WHO has declared that AMR is one of the top 10 global public health threats facing humanity. In 2020 there were 7,00,000 deaths globally due to AMR.



ANTIMICROBIAL STEWARDSHIP PROGRAMME (ASP)

Coordinated interventions designed to improve & measure the appropriate use of antimicrobials, by promoting the selection of the optimal antimicrobial drug regimen, including dosing, duration of therapy & route of administration.
The term stewardship was first used in 1996, while drawing attention to urgent need of addressing the rapidly growing problems of antimicrobial resistance in hospitals

At present, most hospitals in developed countries as well as some in India have devised their own ASPs.

GOALS OF ASPS

1.To work with health care provider

The most appropriate antimicrobial agents must be administerd for the right indication in the right dose, right dosage form, right route, right frequency and duratio. This also includes right information to the patients and right follow up.

2. To prevent overuse, misuse or abuse of antimicrobial agents

3. To minimise the development of AMR
Antimicrobial resistance is an emerging threat which is resulting on exhaustion of tragets and emergence of super bugs!! With the emergence of new organisms and resurgence of infections that had disappeared the mankind is at a crisis as the development of newer antibiotics is sparse and expensive.

WHY DO WE NEED ASP?

Antibiotics are the only class of drugs which when use in one patient can influence its effectiveness in other patients.Drug resistance follows the drug like a faithful shadow
AMR leads to failure of antibiotic therapy, prolonged hospitalisation, escalate the treatment costs, increase mortality and put a huge burden on healthcare system.

- **World Health Assembly released the Global action plan on AMR in 2015**
- **India released its National action plan for AMR in 2015 (5 year plan)**
- **In November 2018, the Indian Council of Medical Research (ICMR) released guidelines to help Indian hospitals set up Antimicrobial Stewardship Programs (AMSP)**

Due to minimal release of novel agents, it is imperative to conserve the efficacy of those that we have.

WHO CONSISTS THE STEWARDSHIP TEAM

- **Microbiologist**
- **Infectious Disease Physician**
- **Clinical Pharmacologist**
- **Epidemiologist**
- **Technician**
- **Pharmacist**
- **Administrator**

ACTIVITIES AND TECHNIQUES OF ASPS

1. Identification of problem pathogen and clinician education

- Identify the current hospital specific problem pathogen & resistance pattern on the data of their own microbiology lab and educate the clinician.
- Focus on priority areas like Intensive Care Units, burn and trauma wards and the management of Ventilator and Community Associated Pneumonia, surgical prophylaxis etc.
- Networking and sharing of AMR data with other hospitals at regional and national level can strengthen the AMR database

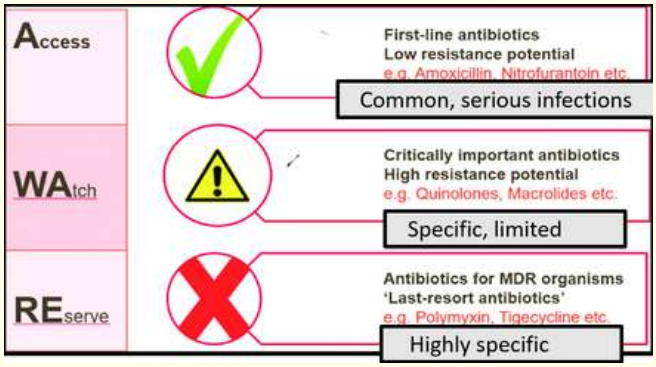
.

.2. Treatment algorithm and guideline development

- A Hospital antibiotic policy based on local antibiogram should be formed Antibiotic order form and treatment algorithm can ensure the guideline based choice of empiric antibiotic usage
- Formulate Pocket guide book with antibiotic recommendations for commonly encountered infections.

3. Preprescription intervention

- Prior authorisation of Reserve Drugs in the AWaRe classification(Access Watch Researve) .This will reduce the expenditure on costly and restricted AMAs as well as emergence of resistance against the



4. Post prescription interventions

- Review of antibiotic orders- continue/discontinue/change
- Reduce the number of prescription for one or more AMAs and total consumption of antibiotics
- De-escalation may be facilitated

5. Dose and route optimization
Based on Pharmacokinetic/Pharmacodynamic properties

- Time/ concentration dependent killing
- Bioavailability: oral versus parenteral

CONCLUSION

In the last 20 years ASP has evolved steadily, and is now a global drive. Hospitals are implementing interventions to rationalize and limit antibiotic use.
Studies evaluating their impact have shown positive results. However, the large area of unrestricted antibiotic use in the community has not yet been addressed

"LET US ALL JOIN TOGETHER AND FIGHT AGAINST ANTIMICROBIAL RESISTANCE"

DR SUJATHA MB
PROFESSOR AND HEAD PHARMACOLOGY
MEMBER SECRETARY, IRB.GMCK
COORDINATOR, ADR MONITORING CENTRE,PVPI
MEMBER, DRUGS AND THERAPEUTICS COMMITTE

രോഗി കേട്ടതും വൈദ്യൻ കല്പിച്ചതും

എന്റെ HOUSE സർജൻസി കാലം, ഒരു കുട്ടി അപ്പോത്തിക്കിരി ആയതിന്റെ ചെറിയ ഒരു അഹങ്കാരം ഇല്ലാതില്ല. നല്ല തിരക്കുള്ള ORTHO OP ൽ MA THOMAS SIR ന്റെ ഒപ്പമിരുന്നു സർ പറയുന്നത് വള്ളി പുള്ളി തെറ്റാതെ OP TICKET ലോട്ട് പകർത്തുന്ന തിരക്കിലാണ് ഞാൻ. പെട്ടന്നാണ് തിക്കി തിരക്കി ബഷീർക്ക OP ലോട്ട് കടന്നു വന്നത്.
എന്റെ വീടിനടുത്തുള്ള പലചരക്കുകടയിൽ ജോലി ചെയ്യുന്ന ബഷീർക്കയെ മുൻപേ പരിചയമുണ്ട്, ആ സ്വാതന്ത്ര്യത്തിലാണ് അദ്ദേഹം ക്യൂ തെറ്റിച്ചു അകത്തു കയറിയത്.
"എന്താ ഇക്കാ, എന്ത് പറ്റി", കാരണം ആളെ കണ്ടിട്ട് കാര്യമായ വേദനയോ പ്രശ്നങ്ങളോ തോന്നുന്നില്ല.
"പറ്റിയത് എനക്കല്ലേ!", ഒരു SUSPENSE ഇട്ട് ഇക്ക നിറുത്തി.
"എന്താ ഇക്കാ, നിങ്ങള് കാര്യം പറയൂ".
അടുത്ത ഊഴം കാത്ത് നിന്ന വല്യമ്മച്ചിക്ക് ഇക്കയെ ഒട്ടും ഇഷ്ടപ്പെടുന്നില്ല എന്ന് അമ്മച്ചിയുടെ മുഖത്തെ ചില നവരസങ്ങളിൽ വ്യക്തമാണ്.

"മോള് ഞമ്മളോട് ഇജ്ജാതി ശെയ്ത്തു ചെയ്യുമെന്ന് ഞമ്മള് വിചാരിച്ചില്ല "... എന്നെ ആകാംഷയുടെ മുൾമുനയിൽ നിർത്തിക്കൊണ്ട് ഇക്ക വീണ്ടും നിർത്തി.
"കഴിഞ്ഞ ആഴ്ച തന്ന ഗുളിക തന്നെ പ്രശ്നം ".

യ്യോ! ദൈവമേ ഇനി ഗുളിക മാറിപ്പോയിട്ടുണ്ടാവുമോ?, അതോ വല്ല REACTION വന്നു കാണുമോ? ഒരു നിമിഷത്തിനുള്ളിൽ എന്റെ മനസ്സിലൂടെ ഒരായിരം ചോദ്യങ്ങൾ കയറിയിറങ്ങി. ഒരാഴ്ച മുൻപാണ് ബഷീർക്ക ഈ കുട്ടി ഡോക്ടറിന്റെ വീട്ടിൽ നടുവേദനയ്ക്ക് ചികിത്സക്ക് വന്നത്. ഞാൻ MBBS കാലത്തു പഠിച്ച 'ESSENTIAL ORTHOPAEDICS BY J MAHESWARI' എന്ന കുട്ടി ബുക്കിൽ ആ നടുവേദനക്കുള്ള പൊടിക്കൈകൾ
ഒന്നുമില്ലായിരുന്നതുകൊണ്ട് പിറ്റേന്ന് തന്നെ OP യിൽ കൊണ്ടുവന്നു MA THOMAS SIR നെ കാണിച്ചു മരുന്ന് കുറിച്ചു കൊടുത്തിരുന്നു.

എന്തായാലും ആള് കലിപ്പിലല്ല, മുഖഭാവം 'ശാന്തം' ആണ് ആ ധൈര്യത്തിൽ തന്നെ ചോദിച്ചു "എന്ത് പറ്റി മരുന്നിനു വല്ല അലർജിയും? "
"ഏയ്, ഞമ്മക്ക് അലർജി പണ്ടേ ഇല്ല ".
എന്റെ ക്ഷമ നശിച്ചു തുടങ്ങി. ദേഷ്യത്തിന്റെ രസം എന്റെ മുഖത്തു വന്നോ എന്നൊരു സംശയം ഇല്ലാതില്ല.
"ഗുളിക കഴിച്ചിട്ട്, ചൊറിച്ചിലോ, ശ്വാസമുട്ടോ എന്തെങ്കിലും ഉണ്ടോ?"

"ഏയില്ല " ഒറ്റവാക്കിൽ ഇക്ക മറുപടി പറഞ്ഞു.

"ഛർദി, വയറുവേദന അങ്ങനെയെന്തെങ്കിലും?"

"ഞമ്മൾ പണ്ടേ ഇംഗ്ലീഷ് മരുന്ന് കഴിക്കാറില്ല, ഇജ്ജ് എന്തെങ്കിലും അസൂഖം വന്നാൽ അന്റെ പെരേടെ അടുത്തുള്ള വൈദ്യന്റെ കഷായം ആണ് കുടിക്കാറ്". മൊത്തത്തിൽ MODERN MEDICINE നോട് ഒരു പുച്ഛഭാവം ആ മുഖത്തുണ്ട്.

ഇങ്ങേരെ ആരും ഇങ്ങോട്ട് ക്ഷണിച്ചില്ലല്ലോ, വൈദ്യന്റെ അടുത്ത് പൊയ്ക്കൂടായിരുന്നോ, മനസ്സിൽ ദേഷ്യം കൂടിക്കൂടി വന്നു, ഒപ്പം മുഖത്തു 'രൗദ്രവും'.

അടുത്ത ചോദ്യം ചോദിക്കുന്നതിനു മുൻപ് തന്നെ അടുത്ത മറുപടി വന്നു, " ഗുളിക അല്ല കുയപ്പം, ഗുളികേടെ കൂടെയുള്ള നിപ്പാണ് ".

"നിൽപ്പോ!" ദേഷ്യം മാറി 'അത്ഭുതം' എന്റെ മുഖത്തു വിരിഞ്ഞു.

"അതേ, ഗുളിക കഴിച്ചിട്ടുള്ള ഒരു മണിക്കൂർ നിപ്പില്ലേ അതു പടച്ചോൻ പോലും പൊറുക്കൂല്ല!"

ബഷീർക്കാന്റെ DIALOGUE തീരുന്നതിന് മുൻപ് അദ്ദേഹത്തിന്റെ ഭാര്യയുടെ DIALOGUE ഇടയ്ക്ക് കയറി വന്നു- "അനങ്ങാതെ ബായതണ്ട് പോലെ ഓന് നിക്കണ കണ്ടപ്പം ഞമ്മള് ശെരിക്കും പേടിച്ചിരിക്കണ്".
കാര്യം വിശദീകരിച്ചു കേട്ടപ്പോൾ എന്റെ മുഖത്തു ചിരിയുടെ ഒരു മാലപ്പടക്കം തന്നെ പൊട്ടി.

പ്രശ്നം മറ്റൊന്നുമല്ല, 'വൈദ്യൻ കല്പിച്ചതും രോഗി കേട്ടതും ഒന്നല്ല രണ്ടാണ്'.
കഴിഞ്ഞ ആഴ്ച നടുവേദനയ്ക്ക് മരുന്ന് കുറിച്ചപ്പോൾ OSTEOPOROSIS അഥവാ അസ്ഥിക്ഷയത്തിനുള്ള ALENDRONATE എന്ന ഗുളികയുടെ കൂടെ കൊടുത്ത നിർദ്ദേശങ്ങളാണ് സകല പുലിവാലും ഒപ്പിച്ചത്.

മേല്പറഞ്ഞ ഗുളിക കഴിച്ച ശേഷം ഉടനെ കിടക്കുകയോ കുനിയുകയോ ചെയ്താൽ മരുന്ന് തികട്ടി കയറി വന്നു നെഞ്ച് എരിയും. അതിനാൽ അദ്ദേഹത്തോട് ഗുളിക കഴിച്ചിട്ട് ഒരു മണിക്കൂർ കിടക്കുകയോ കുനിയുകയോ പാടില്ല എന്ന് നിർദ്ദേശിച്ചിരുന്നു, കഷ്ടം അല്ലാണ്ട് എന്ത് പറയാനാണ്.
ആ പാവം കേട്ടത് 'കിടക്കുകയോ, ഇരിക്കുകയോ പാടില്ല' എന്നാണ്.
ഇക്ക അതിരാവിലെ ഗുളിക കഴിച്ചിട്ട് ഒറ്റ നില്പ്പായിരുന്നു, 'കുബേരൻ' മലയാള ചലച്ചിത്രത്തിൽ ദിലീപ് അങ്ങനെ അനങ്ങാതെ നിൽക്കുന്ന ചില രസകരമായ രംഗങ്ങൾ ഉണ്ട്.

കഥ കേട്ട് അടുത്തിരുന്നവരെല്ലാം പൊട്ടിച്ചിരിച്ചു, ഒപ്പം പിന്നിൽ നിന്ന വല്യമ്മച്ചിയുടെ മുഖത്ത് 'ഹാസ്യം' വിടരുന്നത് ഞാൻ കണ്ടു. പക്ഷേ ബഷീർക്കയുടെ മുഖത്തു ഭാവം 'കരുണം' ആയിരുന്നു.

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FDA APPROVED DRUGS IN THE YEAR 2023

SL NO	BRAND NAME	GENERIC NAME	INDICATION	MOA	ADVERSE DRUG REACTIONS
1	Leqembi	Iecanemab-irmb	Alzheimer's disease	Reduction of Aβ plaques	Infusion related reactions, headache
2	Brenzavvy	Bexagliflozin	Type 2 diabetes	SGLT2 Inhibitors	Female genital mycotic infections, urinary tract infections
3	Jaypirca	Pirtobrutinib	Mantle cell lymphoma	BTK inhibitor	Fatigue, musculoskeletal pain, diarrhea, edema,dyspnea, pneumonia and bruising
4	Orserdu	Elecestrant	ER+/HER2-ESR1mutmBC	ER antagonist	Musculoskeletal pain,nausea,vomiting,decreased appetite,diarrhea,increased cholesterol,AST,ALT,triglycerides,haemoglobin
5	Jesduvroq	Daprodustat	Anemia due to CKD	Inhibitor of HIF-PH1-3	Hpertension, thrombotic vascular events, abdominal pain
6	Lamzede	Velmanase alfa-tycv	Alpha-mannosidosis	Enzyme replacement	Anaphylaxis, nasopharyngitis, pyrexia, headache, arthralgia
7	Filspari	Sparsentan	Proteinuria in IgAN	ETAR and AT1antagonist	Peripheral edema, hypotension, dizziness, hyperkalemia and anemia

SL NO	BRAND NAME	GENERIC NAME	INDICATION	MOA	ADVERSE DRUG REACTIONS
8	Skyclarys	Omaveloxolone	Friedreich's ataxia	Unclear(Nrf2 activation)	Elevated liver enzymes, headache,nausea, abdominal pain,fatigue, diarrhea, musculoskeletal pain
9	Zavzpret	Zavegepant	Acute treatment of migraine	CGRP receptor antagonist	Taste disorders,nausea, nasal discomfort, vomiting
10	Daybue	Trofinetide	Rett syndrome	Unknown	Diarrhea, vomiting
11	Zynyz	Retifanlimab-dlwr	Merkel cell carcinoma	PD-1- blocking antibody	Fatigue, musculoskeletal pain, pruritus, diarrhea, rash, pyrexia,nausea
12	Rezzayo	Rezafungin	Candidemia/ candidiasis	1,3- β-D- glucan inhibitor	Hypokalemia,pyrexia,diarrhea,anemia,vomiting,nausea,hypomagnesemia
13	Joenja	Leniolisib	Activated P13Kδ syndrome	PI3Kδ Inhibitor	Headache, sinusitis, atopic dermatitis
14	Qalsody	Tofersen	ALS (SOD1 mutation)	SOD1 mRNA degradation	Fatigue, arthralgia,myalgia

SL NO	BRAND NAME	GENERIC NAME	INDICATION	MOA	ADVERSE DRUG REACTIONS
15	Elfabrio	Peguinigalsidase alfa-iwxj	Fabry disease	Enzyme replacement	Nasopharyngitis, fatigue, sinusitis, pain in extremity
16	Veozah	Fezolinetant	Menopausal vasomotor symptoms	NK3 receptor antagonist	Abdominal pain, diarrhea, insomnia, hot flushes, elevated hepatic transaminases
17	Miebo	Perfluorhexyloctane	Dry eye disease	Unknown	Blurred vision
18	Epkinly	Epcoritamab-bysp	R/R DLBCL; HGBCL	CD3/CD20 Bispecific	Cytokine release syndrome, musculoskeletal pain,injection site reactions,nausea, diarrhea
19	Xacduro	Sulbactam, durlobactam	HABP/VABP caused by Acinetobacter strains	Beta lactamase inhibitors	Abnormal LFT, Diarrhea, anemia and hypokalemia
20	Paxlovid	Nirmatrelvir, ritonavir	Covid-19	SARS-CoV-2Mproinhibit; HIV-1protection/CYP3A Inhibitor	Dysgeusia and diarrhea
21	Posluma	Flotufolastat F18	PET of PSMA positive prostate cancer lesions	Binds to PSMA & EMITS β+(Detectable by PET)	Diarrhea, increased blood pressure, injection site pain

SL NO	BRAND NAME	GENERIC NAME	INDICATION	MOA	ADVERSE DRUG REACTIONS
22	Inpefa	Sotagliflozin	Heart failure	SGLT1/2 inhibitor	UTI, volume depletion,diarrhea and hypoglycemia
23	Columvi	Glofitamab-gxbm	R/R DLBCL; LBCL arising from FL	CD3ε/CD20 bispecific	Cytokine release syndrome, musculoskeletal pain, fatigue
24	Litfulo	Ritlecitinib	Severe alopecia areata	JAK3/TEC kinase inhibitor	Urticaria, atopic dermatitis,herpes zoster,stomatitis
25	Rystiggo	Rozanolixizumab-noli	Myasthenia gravis in AchR or MuSK mAb+adults	FcRn Blocker	Headache, pyrexia,hypersensitivity reactions
26	Ngenla	Somatrogon-ghla	Pediatric GH deficiency	GH Receptor activator	Nasopharyngitis,hypothyroidism,oropharyngeal pain
27	Beyfortus	Nirsevimab-alip	RSV lower respiratory tract disease	RSV-F directed fusion inhibitor	Injection site reactions, rashes
28	Vanflyta	Quizartinib	FLT3 ITD+AML	FLT3 Inhibitor	Hypokalemia,hypoalbuminemia,vomiting, sepsis,URTI

SL NO	BRAND NAME	GENERIC NAME	INDICATION	MOA	ADVERSE DRUG REACTIONS
29	Xdemvy	Lotilaner	Demodex blepharitis	Mite selective GABA CL- channel inhibitor	Stinging, burning
30	Zurzuvae	Zuranolone	Postpartum depression	Positive allosteric modulation of GABAA receptors	Somnolence, dizziness, diarrrhea, UTI
31	Izervay	Avacincaptad pegol	GA secondary to AMD	C5 inhibitor	Conjunctival haemorrhage,blurred vision, increased IOP,neovascular age related macular degeneration
32	Talvey	Talquetamab-tgvs	R/R multiple myeloma	GPRC5D/CD3 bispecific	Pyrexia,disguesia,nail disorder.musculoskeletal pain,rashes
33	Elrexfio	Elranatamab-bcmm	R/R multiple myeloma	BCMA/CD3 bispecific	Fatigue, injection site reaction,cough,anorexia
34	Sohonos	Palovarotene	Fibrodysplasia ossificans progressive	Retinoic acid receptor agonist(RARY)	Dry skin, dry lip,pruritis. Alopecia

SL NO	BRAND NAME	GENERIC NAME	INDICATION	MOA	ADVERSE DRUG REACTIONS
35	Veopoz	Pozelimab-bbfg	CHAPLE disease	C5 inhibitor	URTI, fracture, urticaria, alopecia
36	Aphexda	Motixafortide	HSC mobilizer in patients with multiple myeloma	CXCR4 inhibitor	Injection site reactions,pain, erythema, pruritis
37	Ojjaara	Momelotinib	Myelofibrosis in adults with anemia	JAK1/JAK2/ACVR1 Inhibitor	Thrombocytopenia, hemorrage, fatigue, dizziness, diarhhea
38	Exxua	Gepirone	Major depressive disorder	5HT1a Receptor agonists	Dizziness, nausea, insomnia, abdominal pain
39	Pombiliti	Cipaglucosidase alfa-atga	Pompe disease	Enzyme replacement	Headache,diarrhea, fatigue, nausea
40	Rivfloza	Nedosiran	Primary hyperoxaluria type 1	Hepatic LDHA reduction	Injection site reactions
41	Velsipity	Etrasimod	Ulcerative colitis	S1P receptor modulator	Headache, dizziness, elevated liver tests
42	Zilbrysq	Zilucoplan	AchR + myasthenia gravis	C5 inhibitor	Injection site reactions, upper respiratory tract infections

SL NO	BRAND NAME	GENERIC NAME	INDICATION	MOA	ADVERSE DRUG REACTIONS
43	Bimzelx	Bimekizumab	Plaque psoriasis	IL-17A/F antagonist	Upper respiratory tract infections, oral candidiasis, gastroenteritis
44	Agamree	Vamorolone	Duchenne (DMD)	Corticosteroid	Cushingoid features,psychiatric disorders,vomiting, weight gain
45	Omvoh	Mirikizumab-mrkz	Ulcerative colitis	IL-23(p19) antagonist	URTI, arthralgia
46	Loqtorzi	Toripalimab-tpzi	Nasopharyngeal carcinoma	PD-1 Blocking antibody	Fatigue, hypothyroidism, musculoskeletal pain
47	Fruzaqla	Fruquintinib	Metastatic colorectal carcinoma	VEGFR-1/2/3 inhibitor	Hypertension, palmar plantar erythrodysesthesia, proteinuria, dysphonia, abdominal pain
48	DefenCath	Taurolidine, heparin	Catheter related bloodstream infections	Antimicrobial / anticoagulant	Hemodialysis catheter malfunction, haemorrhage, thrombocytopenia, musculoskeletal chestpain

SL NO	BRAND NAME	GENERIC NAME	INDICATION	MOA	ADVERSE DRUG REACTIONS
49	Augtyro	Repotrectinib	ROS1-positive NSCLC	ROS1/TRKA/B/C inhibitor	Dizziness, dysgeusia, peripheral neuropathy, constipation, dyspnea
50	Ryzneuta	Efbemalenograstim alfa-vuxw	Febrile neutropenia	Leukocyte growth factor	Nausea, anemia, thrombocytopenia
51	Truqap	Capivasertib	HR+,HER2-Breast cancer(PIK3CA/AKT1/PTEN-mutation)	AKT1-3 inhibitor	Diarrhea, increased RBS, FBSdecreased hb, stomatitis
52	Ogsiveo	Nirogacestat	Progressive desmoid tumors	Gamma secretase inhibitor	Diarrhea, ovarian toxicity,rash,stomatitis, cough
53	Fabhalta	Iptacopan	PNH	Factor B inhibitor	Headache, nasopharyngitis, diarrhea, abdominal pain, infections
54	Filsuvez	Birch triterpenes	Epidermolysis bullosa	Unknown	Application site reactions
55	Wainua	eplontersen	Hattr(v)- PN	Degrades TTR-mRNA	Decreased vitamin A, Vomiting

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PHARMACOVIGILANCE

The Pharmacology Department of Government Medical College, Kottayam has been enrolled as an AMC (ADR Monitoring Centre) for PvPI (Pharmacovigilance Programme of India) since 2012. Since then it has been contributing for the cause of patient safety by submitting Individual Case Safety Reports (ICSRs) to PvPI through the software VigiBase.

During this time there has been tremendous progress in building the culture of reporting ADRs among the healthcare professionals in and around Kottayam District. Our AMC has received a total of 219 ICSRs from its different stakeholders in and around Kottayam District from 1st January 2023 to 31st December 2023 which has been submitted to PvPI for further evaluation.Currently there are around 877 AMCs enrolled under PvPI across India.

If there is any suspicion that an adverse event or adverse reaction has occurred, the health care professional attending to the patient, can fill up the suspected ADR form or if a patient suspects that he/she has experienced an ADR can report to the nearest ADRs Monitoring Centres (AMCs) under Pharmacovigilance Programme of India (PvPI). Please ensure to fill in atleast the mandatory fields in a suspected ADR Reporting Form which are patient initials, age at onset of reaction, reaction term(s), date of onset of reaction, suspected medication(s) & reporter information. The details of AMCs are given on the website of IPC i.e. www.ipc.gov.in Healthcare professionals can fill in the "Suspected Adverse Drug Reaction Reporting Form" by clicking this link

and Similarly Consumers can fill in the MEDICINES SIDE EFFECT REPORTING FORM (FOR CONSUMERS) by clicking the link

for downloading the adr-reporting-form-for-consumers-in-malayalam and send it to your nearest the Adverse Drug Reaction Monitoring Centre (AMC) email or whattsapp.

E-mail ID of AMC located at GMC Kottayam : mckpharmacadr@gmail.com
·Whatsapp number of Deputy Coordinator GMC Kottayam: 7558970809
Toll free helpline number (1800-180-3024) can also be used to directly report an ADR (All Working Days 9:00 AM to 5:30PM).
You can also report Adverse Drug Reaction through "ADR PvPI" Mobile app (android version) by it from Google play store by using the following link

The AMC organised the following events in connection with the 3rd National Pharmacovigilance Week 2023:
CME on Medication Safety on 21st September 2023- A total of 196 participants which included Doctors and medical students had attended it and they were sensitised about the medication safety, errors that can occur in the hospital, the means by which we can overcome the errors, look alike sound alike drugs and the medication reconciliation process.

Essay Writing Competitionon 18th, 19th and 20th September 2023- A total of 33 medical students participated in the Essay Competitionswhich were conducted on three topics namely1) Medication Errors, 2) Pharmacovigilance and Public Awareness and 3) Do's and Don'ts of Adverse Drug Reactions for sensitization on pharmacovigilance.

Cross Word Solving Competition on 20th September 2023- A total of 27 medical students participated in the Crosswords Puzzle game involving words related to Pharmacovigilance, adverse reactions and drugs withdrawn from the market due to ADR.

Competition on reel making based on the theme "ONE MINUTE TO REPORT AN ADR"- Total of 6 entries were received. Not only the participants but also the public who viewed the reels through various platforms of social media, understood the necessary information required and the modes to report ADRs.

Public Sensitisation through Radio FM 89.6, Notice, Posters, Video - The theme of National Pharmacovigilance Programme of India was widely publicised through Radio Talk, Distribution of Pamplets. Also the theme were translated into Malayalam, printed and widely disseminated to the public. The department also released a public awareness video on the importance of ADR reporting

.

As part of Medical Exhibition (Med Ex 2023) held at Government Medical College, Kottayam from 26th October to 4th December 2023, general public and school/college students were sensitized on the importance and modes for reporting ADRs.

Sensitization on reporting ADR was held for doctors and nurses of District Tuberculosis Centre, Kottayam on 2ndDecemeber 2023.

Sensitization programme on "Why to report ADR?" was conducted on 7th December 2023 as a part of Quality Status Assessment Program which was attended Doctors, Nursing officers and pharmacists of GMC Kottayam

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JOURNEY OF MY SOUL

I have been through a lot before
U all see me as of now. Initially,
It was a struggle to meet daily living
Then it becomes hard in times of ailments
They took the ancient myths to heal
Crushed the life of plants and their soul
Met with healing hearts around
Nobody knows how it made possible
But they determined to prove it down the era
Took the shattered pieces of wisdom from ancient tales
Evolution filled the mind with curious quests
Searched a long to extract the potential souls
One day they found me going through the gut of 4 legged
I got astonished to see that world even though smelled rancid
But I found different ways to come out of that different world to where I belong
My journey made them their stepping stone in search of healing souls.

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GOOD CLINICAL PRACTICE

Good clinical practice(GCP) is defined as international ethical, scientific quality standard for the design , conduct , performance , monitoring , auditing , recording , analyses & reporting clinical trial that involve participation of human subjects.

Unethical dangerous and inhumane experiments done in during the world war and the historical background of Thalidomide tragedy,led to the development of Nurmberg code and Declaration of Helsinki which gave basic structure of ethics. The 4 pillars of ethic evolved from the Belmont principles and they include Autonomy, Justice, Beneficence and Non-Maleficence.

ICH-GCP (The International Council for Harmonisation for Technical requirements for Pharmaceuticals for Human Use – Good Clinical Practice)

GCP have 14 principles and protects participants by putting forward the rights, well being and safety of the participants. In India, Indian Council of Medical Research (ICMR) introduced the first policy statement in 1980 and ethical guidelines in year 2000. The current guideline is released in 2017. The National Medical Commission(NMC) also mandates training in ethics for knowledge acquisition.

Our department along with IRB conducted a National Level Training in June 2023 on GCP, Ethical Guidelines and Grant Writing.

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Learning Pharmacology- Movie World

As Mohanlal sings “sumuhartama swasti swasti” and blood appears through the corners of mouth I pause the video and ask the excited Mohanlal fans which movie it was? Despite the generation gaps, even in 2024 there are some who recognize the movie as Kamaladalam.Further while I probe into the modus operandi of poisoning in the film, there are a few who recollect it as a weedicide or insecticide mixed into the cola by Vineeth and thus we step into the concept of Organophosphorous(OP) poisoning. As I tell the class it was a poor depiction of OP poisoning as how wrongly the famous actor is shown not to have SLUDGE(salivation, lacrimation, urination, defecation, gastric distress and emesis) and bleeding instead, I feel them getting interested in the topic. This is a movie clip I have been showing for past few years ever since I became interested in the concept of showing atleast one movie clip or discussing a movie related fact in each of my class.

As I proceed with the anticholinergics stressing on the uses of atropine I also show the clip of Fahad Fazil eating mushrooms with hallucinogenic effect from the movie Carbon. As I discuss the uses of atropine in mushroom poisoning I reinstate the statement that Atropine is useful for early mushroom poisoning with muscarinic symptoms but if Fahad was brought to you in the casualty after the poisoning you shouldn't be using the same in hallucinogenic type mushroom poisoning.

One of my another favourite clip is yet another scene related to poisoning. As I play the climax scene of the movie from Pranayakalam the song

ഒരു വേനൽ പുഴയിൽ തെളിനീരിൽ..
പുലരി തിളങ്ങീ മൂകം..
ഇലകളിൽ പൂക്കളിൽ എഴുതീ ഞാൻ..
ഇളവെയിലായ് നിന്നെ..

we see the hero and heroine uniting in the heaven after their death. The class is on Sedative hypnotics and the question I ask is if you were the movie director what tweaks would you have made in the movie so as to give it a happy ending?

After discussing the concept of low and high therapeutic index of barbiturates and benzodiazepines it is quite interesting when the students opine that probably “barbiturates” was bad choice by the director as the main leads proceeded to respiratory depression and death which might not have happened if it were the benzodiazpeines which have high therapeutic index and also a competitive antagonist Flumazenil.

Two movies I refer to while teaching the concept of anterograde amnesia are 50 first dates

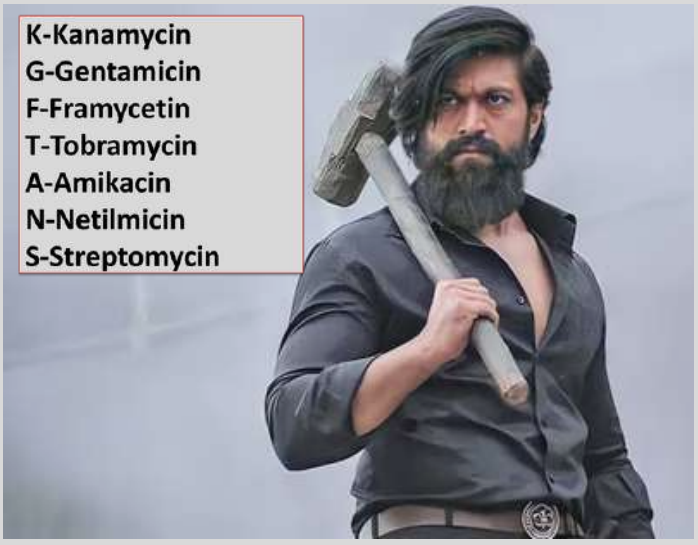
and Ormayundo ee mukham....one probably inspired from the other for obvious reasons... While anterograde amnesia is one of the reason why the benzodiazepines are used as intravenous anaesthetics it is the same reason why it has been used as a rape drug as depicted in the movie starring Amala Paul " The Teacher"

With the advent of NIpah the film scene from VIRUS was used as a set induction for the antivirals ,but however the topic was subsequently handled by some other faculty.

Playing the movie scene for case based learning is well accepted in the literature.

The use of metaphors like Methylprednisolone to Chris Evans (Captain America) and Dexamethasone to Robert Downey Junior(Iron Man), the use of acronyms in learning the names of the aminoglycosides with the main lead Rocky

in KGF playing to the BGM TAN TAN TAN.....KGF TANS expanded as Kanamycin Gentamicin Framycetin Tobramycin Amikacin and Streptomycin creates learning with enjoyable moments sustaining the interest of the least interested at least for a few moments



In the Phase 2 AETCOM session the concept of bioethics was handled as a lecture for the past 3 batches(2019-2021). The scene in which Prithviraj denies the treatment of Kalabhavan Mani's daughter based on previous grudge in " Ayalum njanum thammil", Mohnalal pretending to do surgery on Jagathi in the movie "Ulladakkom" to take out the horse he had swallowed, Dr Vijay Nambiar in the movie "Apothecary" who uses his poor patients to test drugs hiding the fact that they are in a clinical trial without their consent are discussed to bring out the concepts of Autonomy, Beneficience and Non maleficenece.

While discussing antipsychotics there is no discussion without commenting the legendary Nagavalli of Manichithrathazhu and Hari of North 24th Kaatham which are evergreen in the minds of majority of the students. I remember showing the movie poster of Vidya Balan movie" Jalsa" asking them to decipher why omeprazole with a half life of 1.5 hours was given once daily. To my disappointment none of them had watched the movie and were clueless about the 'hit and run' I was referring to.

The use of trigger films, movie clips or whole length films have been used for teaching soft skills such as professionalism , communication and ethics.[1]
The term "cinemeducation " was coined by Alexander et al to refer to the use of movie clips from movies and videos to educate medical students and residents about psychosocial aspects of medicine. Kadeangadi DM et al in an editorial opined that using movie clips to engage learners in discussion makes learning active and is application of consctrutivist (build ideas on preexisting concepts) and social learning (exposure to positive and negative role models).[2]

While a vast majority are in line with my thinking and have watched the movies a few times there are many who are clueless and doesnt know the background of the movie, especially the whole lot who were born and brought up outside Kerala as I usually refer to the Malayalam movies. Then there is this generation gap where there is a more inclination towards watching series instead of movies.I often remind myself that I need to watch more of the Grey's Anatomy or House MD types.

PS: I cannot stop this write up without mentioning Abraham Ozler in which sevoflurane an inhalational anaesthetic was used to cause loss of consiousness while attempting kidnap in contrast to the legendary Chloroform. I wont comment about the GCS ZERO mentioned in the movie though.

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REPURPOSED DRUGS -2023

"Creativity is making masterpiece out of the discarded "

Drug repurposing is a promising field in drug discovery that identifies new therapeutic indications for existing /failed /abandoned drugs. This novel aproach has advantage over traditional drug discovery in mitigating high monetary cost, longer duration of development and increased risk of failure.

PDE5 INHIBITORS

Previously used for erectile dysfunction
New indication: SARS -Co-V-2 infection(anti inflammatory ,antioxidant ,immunomodulatory effects)

TERIFLUNOMIDE & FLUCONAZOLE

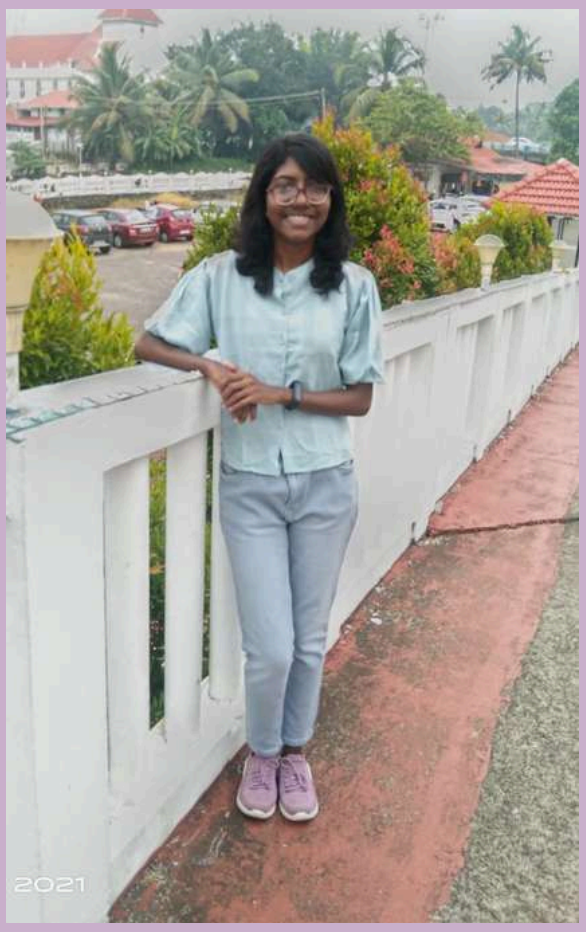
Synergistic effect in resistant Candida albicans .
Reduces fungal burden & tissue damage in comparison to monotherapy .

MILTEFOSINE

Previous indication : Leishmaniasis.
New indication : Antifungal activity against Mucorales species

ARTEMESININ

Previuos indication : Treatment of Malaria
New indication : COVID -19 (anti inflammatory -inhibition of IL-6)



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BANNED MEDICINES IN INDIA 2023

In India, the Central Drugs Standard Control Organization (CDSCO) is responsible for ensuring the safety and efficacy of medicines. It also maintains a list of banned medicines that are no longer allowed to be manufactured, sold, or used in the country. To safeguard public health and ensure the safety and efficacy of medications, the Indian government periodically bans certain drugs. This article provides a comprehensive guide to the list of banned medicines in India as of 2023, with a focus on clarity and accessibility for the public.

Types of Banned Medicines:

There are two main categories of banned medicines in India

1. Single Drugs: These are individual medications that are prohibited for use due to safety concerns or lack of therapeutic justification.
2. Fixed-Dose Combinations (FDCs): These are medicines containing two or more drugs combined in fixed proportions. They are banned if they are found to be irrational, unsafe, or lacking proper scientific evidence to support their use.

List of Banned Single Drugs:

- Amidopyrine
- Phenacetin
- Nialamide
- Chloramphenicol (Except for ophthalmic and topical preparations)
- Phenylpropanolamine
- Furazolidone
- Oxyphenbutazone
- Metronidazole (topical application for acne)

List of Banned FDCs:

As of December 2023, a total of 14 FDCs have been banned in India. These include:

1. Nimesulide + Paracetamol Dispersible Tablet
2. Amoxicillin + Bromhexine
3. Pholcodine + Promethazine
4. Chlorpheniramine Maleate + Phenylephrine Hydrochloride + Caffeine
5. Dextromethorphan Hydrobromide + Chlorpheniramine Maleate + Phenylephrine Hydrochloride
6. Ambroxol Hydrochloride + Guaiphenesin + Levosalbutamol + Menthol
7. Dextromethorphan Hydrobromide + Ambroxol Hydrochloride + Guaiphenesin
8. Diphenhydramine Hydrochloride + Phenylephrine Hydrochloride + Ammonium Chloride
9. Dextromethorphan Hydrobromide + Phenylephrine Hydrochloride + Chlorpheniramine Maleate
10. Dextromethorphan Hydrobromide + Doxylamine Succinate + Phenylephrine Hydrochloride
11. Pholcodine + Dextromethorphan Hydrobromide + Chlorpheniramine Maleate
12. Ambroxol Hydrochloride + Dextromethorphan Hydrobromide + Guaiphenesin
13. Dextromethorphan Hydrobromide + Doxylamine Succinate + Guaifenesin
14. Dextromethorphan Hydrobromide + Chlorpheniramine Maleate + Guaifenesin

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Brief Summary of Updates Adult Immunization Schedule 2024

Addition of Section 5 in Schedule (Addendum)

- Affordable Care Act-compliant insurance plans ACIP recommended immunizations

New vaccines added

- **Respiratory syncytial virus (RSV) vaccines**
- **Pregnant at 32 weeks - 36 weeks and 6 days gestation from September to January in most of the continental United States***: 1 dose RSV vaccine (Abrysvo™). Administer RSV vaccine regardless of previous RSV infection

- **mpox vaccine (Jynneos)**

Any person at risk for Mpox infection: 2-dose series, 28 days apart

- **MenACWY-MenB combo vaccine (Penbraya)**

Adults may receive a single dose of Penbraya as an alternative to separate administration of MenACWY and MenB

Vaccine	Abbreviation(s)	Trade name(s)
COVID-19 vaccine	1vCOV-mRNA	Comirnaty®/Pfizer-BioNTech COVID-19 Vaccine Spikevax®/Moderna COVID-19 Vaccine
	1vCOV-aPS	Novavax COVID-19 Vaccine
Haemophilus influenzae type b vaccine	Hib	ActHIB® Hiberix® PedvaxHIB®
Hepatitis A vaccine	HepA	Havrix® Vaqta®
Hepatitis A and hepatitis B vaccine	HepA-HepB	Twinrix®
Hepatitis B vaccine	HepB	Engerix-B® Heplisav-B® PreHevbrio® Recombivax HB®
Human papillomavirus vaccine	HPV	Gardasil 9®
Influenza vaccine (inactivated)	IIV4	Many brands
Influenza vaccine (live, attenuated)	LAIV4	FluMist® Quadrivalent
Influenza vaccine (recombinant)	RIV4	Flublok® Quadrivalent
Measles, mumps, and rubella vaccine	MMR	M-M-R II® Priorix®
Meningococcal serogroups A, C, W, Y vaccine	MenACWY-CRM MenACWY-TT	Menveo® MenQuadfi®
Meningococcal serogroup B vaccine	MenB-4C MenB-FHbp	Bexsero® Trumenba®
Meningococcal serogroup A, B, C, W, Y vaccine	MenACWY-TT/ MenB-FHbp	Penbraya™
Mpox vaccine	Mpox	Jynneos®
Pneumococcal conjugate vaccine	PCV15 PCV20	Vaxneuvance™ Prevnar 20™
Pneumococcal polysaccharide vaccine	PPSV23	Pneumovax 23®
Poliovirus vaccine	IPV	Ipol®
Respiratory syncytial virus vaccine	RSV	Arexvy® Abrysvo™
Tetanus and diphtheria toxoids	Td	Tenivac® Tdvax™
Tetanus and diphtheria toxoids and acellular pertussis vaccine	Tdap	Adacel® Boostrix®
Varicella vaccine	VAR	Varivax®
Zoster vaccine, recombinant	RZV	Shingrix

Colour codes

Brown to highlight those groups and conditions which need recurrent vaccination

- **Tdap in each and every pregnancy at 27-36 weeks**
- **Revaccinate people with HIV with MenACWY every 5 years**
- **Revaccinate those with asplenia/complement deficiency with MenACWY every 5 years and MenB every 2-3 years**
- **Stem cell transplant recipients need 3 doses of Hib**

- COVID and flu vaccines are placed at top and coded yellow
- These vaccinations should be provided to everyone who needs a dose of both vaccines

UPDATES

COVID vaccine (both mRNA and protein-based adjuvanted versions)

- **Unvaccinated:** - 1 dose of updated Moderna or Pfizer-BioNTech vaccine - 2-dose series of updated (2023–2024 Formula) Novavax at 0, 3-8 weeks
- **Previously vaccinated** : 1 dose of any updated COVID-19 vaccine at least 8 weeks after the most recent COVID-19 vaccine dose.

Vaccine information statements

Complete ACIP recommendations

CDC's General best practice guidelines for immunizations

VAERS(CDC's Vaccine Adverse Event Reporting System)

Travel vaccination requirements

Best practices guidelines for vaccinating persons with immunodeficiency

Travel vaccine requirements

Countries with high or intermediate endemic hepatitis A

Hep A – Hep B [Twinrix] 3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months

Close, personal contact with international adoptee should get HepA-HepB in first 60 days after arrival administer dose 1 as soon as adoption is planned, at least 2 weeks before adoptee's arrival

Students in postsecondary educational institutions, international travellers should get 2-dose series at least 4 weeks apart if previously did not receive any doses of MMR or 1 dose if previously received 1 dose MMR

Countries with hyperendemic or epidemic meningococcal disease, or microbiologists routinely exposed to Neisseria meningitidis: 1 dose MenACWY (Menveo or MenQuadfi) and revaccinate every 5 years if risk remains.

NOTES

For vaccination recommendations for persons ages 18 years or younger, see the Recommended Child and Adolescent Immunization Schedule, 2024: www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html

How to use the adult immunization schedule

1. Determine recommended vaccinations by age **(Table 1)**
2. Assess need for additional recommended vaccinations by medical condition or other indication **(Table 2)**
3. Review vaccine types, dosing frequencies and intervals, and considerations for special situations **(Notes)**
4. Review contraindications and precautions for vaccine types **(Appendix)**
5. Review new or updated ACIP guidance **(Addendum)**

Table 1 Recommended Adult Immunization Schedule by Age Group, United States, 2024

Vaccine	19–26 years	27–49 years	50–64 years	≥65 years
COVID-19	1 or more doses of updated (2023-2024 Formula) vaccine (See Notes)			
Influenza inactivated (IIV4) or Influenza recombinant (RIV4)	1 dose annually			
Influenza live, attenuated (LAIV4)	1 dose annually			
Respiratory Syncytial Virus (RSV)	Seasonal administration during pregnancy. See Notes.			≥60 years
Tetanus, diphtheria, pertussis (Tdap or Td)	1 dose Tdap each pregnancy; 1 dose Td/Tdap for wound management (see notes)			
	1 dose Tdap, then Td or Tdap booster every 10 years			
Measles, mumps, rubella (MMR)	1 or 2 doses depending on indication (if born in 1957 or later)			For healthcare personnel, see notes
Varicella (VAR)	2 doses (if born in 1980 or later)	2 doses		
Zoster recombinant (RZV)	2 doses for immunocompromising conditions (see notes)		2 doses	
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years		
Pneumococcal (PCV15, PCV20, PPSV23)				See Notes
				See Notes
Hepatitis A (HepA)	2, 3, or 4 doses depending on vaccine			
Hepatitis B (HepB)	2, 3, or 4 doses depending on vaccine or condition			
Meningococcal A, C, W, Y (MenACWY)	1 or 2 doses depending on indication, see notes for booster recommendations			
Meningococcal B (MenB)	19 through 23 years	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations		
Haemophilus influenzae type b (Hib)	1 or 3 doses depending on indication			
Mpox				

Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of immunity

Recommended vaccination for adults with an additional risk factor or another indication

Recommended vaccination based on shared clinical decision-making

No recommendation/ Not applicable

Table 2 Recommended Adult Immunization Schedule by Medical Condition or Other Indication, United States, 2024

Always use this table in conjunction with Table 1 and the Notes that follow. Medical conditions or indications are often not mutually exclusive. If multiple medical conditions or indications are present, refer to guidance in all relevant columns. See Notes for medical conditions or indications not listed.

VACCINE	Pregnancy	Immunocompromised (excluding HIV infection)	HIV infection CD4 percentage and count		Men who have sex with men	Asplenia, complement deficiency	Heart or lung disease	Kidney failure, End-stage renal disease or on dialysis	Chronic liver disease; alcoholism[a]	Diabetes	Healthcare Personnel[b]
			<15% or <200mm	≥15% and ≥200mm							
COVID-19		See Notes									
IIV4 or RIV4	1 dose annually										
LAIV4					1 dose annually if age 19 - 49 years			1 dose annually if age 19 - 49 years			
RSV	Seasonal administration. See Notes	See Notes				See Notes					
Tdap or Td	Tdap: 1 dose each pregnancy	1 dose Tdap, then Td or Tdap booster every 10 years									
MMR	•										
VAR	•			See Notes							
RZV		See Notes									
HPV	•	3 dose series if indicated									
Pneumococcal											
HepA											
Hep B	See Notes									Age ≥ 60 years	
MenACWY											
MenB											
Hib		HSCT: 3 doses[c]				Asplenia: 1 dose					
Mpox	See Notes				See Notes						See Notes

Recommended for all adults who lack documentation of vaccination, **OR** lack evidence of immunity

Not recommended for all adults, but recommended for some adults based on either age **OR** increased

Recommended based on shared clinical decision-making

Recommended for all adults, and additional doses may be necessary based on medical condition or other indications

Precautions: Might be indicated if benefit of protection outweighs risk of adverse reaction

Contraindicated or not recommended. [c]Vaccinate after pregnancy, if indicated

No Guidance/ Not Applicable

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Q1) A 25 year old female presented with diplopia, facial weakness, blurring of vision, numbness and weakness of both lower extremities and bladder dysfunction. MRI findings revealed

The S1P5-selective S1P inhibitor that is used in the management of relapsing form of this condition is

a) Glatiramer acetate
b) Palovarotene
c) Ponesimod
d) Lumateperone

Q2) What is the classical adverse effect seen with multikinase inhibitor- Cabozantinib?

A) Nystagmus.
B) Tendinitis
C) Hypoglycemia
D) Hypertension.

Q3) Blinatumomab is approved for the management of

A) Rhabdomyosarcoma
B) Previously untreated patients with CLL in combination with chlorambucil.
C) Treatment-refractory or relapsed B-cell precursor acute lymphoblastic leukemia
D) Breast carcinoma.

Q4) The following skin conditions are commonly associated with the intake of certain drugs. Match the best possible causative drug

Image- (1)

Image (2)

Image – (3)

Image – (4)

a) Hydralazine **b) Bromocriptine**
c) Amantadine **d) Carbamazepine**

Option A) 1 – d, 2- a, 3- b, 4-c
Option B) 1- a, 2- c, 3-b, 4-d
Option C) 1- b, 2- c, 3-d, 4- a
Option D) 1 – b, 2-d, 3-c, 4-a

Q5) Pleuromutilins are effective against

A) Enterobacter
B) Klebsiella
C) MRSA
D) Enterococci.

Q6) Choose the correct statement in relation to alcohol intoxication

A) Acute ethanol intoxication decreases general anesthetic requirements
B) Since ethanol is a substrate for CYP2E1, any drug being metabolized by this CYP isozyme will be metabolized at a faster rate in the presence of ethanol
C) Chronic ethanol drinking decreases anesthetic requirements largely due to pharmacodynamic cross-tolerance
D) Ethanol decreases the risk of internal bleeding associated with aspirin.

Q7) Which of the following anti trypanosomal drug is effective when central nervous system involvement is there?

A) Trimelarsan
B) Melarsoprol
C) Suramin
D) Pentamidine

Q8) Which of the following best describes the management of Herpes Zoster ?

A) For uncomplicated herpes zoster, valacyclovir or famciclovir is not preferrable to acyclovir
B) Therapy should start within the first 5 days of the onset of the lesions and be continued for 14 days
C)Corticosteroids does not prevent the development of postherpetic neuralgia .
D) VZV associated with the Ramsay Hunt syndrome is more sensitive to antiviral therapy

Q9) The preferred ocular route of drug administration in the management of Age related macular degeneration is

A) Sub-Tenon's
B) Subconjunctival
C) Intracameral
D) Intravitreal injection

Q10) Teduglutide is used in the management of

A) Short-Bowel Syndrome
B) Postoperative ileus
C) Post gastrectomy dumping syndrome
D) Small Intestinal Bacterial Overgrowth(SIBO)

ANSWERS

Q1-C Ponesimod (Ref – Harrison 21st edition – 3471)
Q2-D Hypertension(Ref- Goodman & Gilman 14th edition page-1399)
Q3-C Treatment-refractory or relapsed B-cell precursor acute lymphoblastic leukemia (ALL) (Ref-Katzung Basic & ClinicalParmacology 15th edition page- 1477)
Q4 -C 1 - Erythromelalgia- Bromocriptine
2- Livedo reticularis-Amantadine 3-SJS-Carbamazepine
4-Lupus erythematosis- Hydralazine
Q5- C MRSA(Ref - Goodman & Gilman 14th edition page- 1187)
Q6 – A Acute ethanol intoxication decreases general anesthetic requirements(Ref- Goodman & Gilman 14th edition page- 526)
Q7- B Melarsoprol (Ref- A Textbook of Clinical Pharmacology and Therapeutics – James M Ritter , 5th edition , page – 364)
Q8- C Corticosteroids does not prevent the development of postherpetic neuralgia(Ref- CMDT 2023 page 1361)
Q9- D Intravitreal injection (Ref - Goodman & Gilman – 14th edition 1457)
Q10-A Short-Bowel Syndrome(Ref - Goodman & Gilman – 14th edition 1105)

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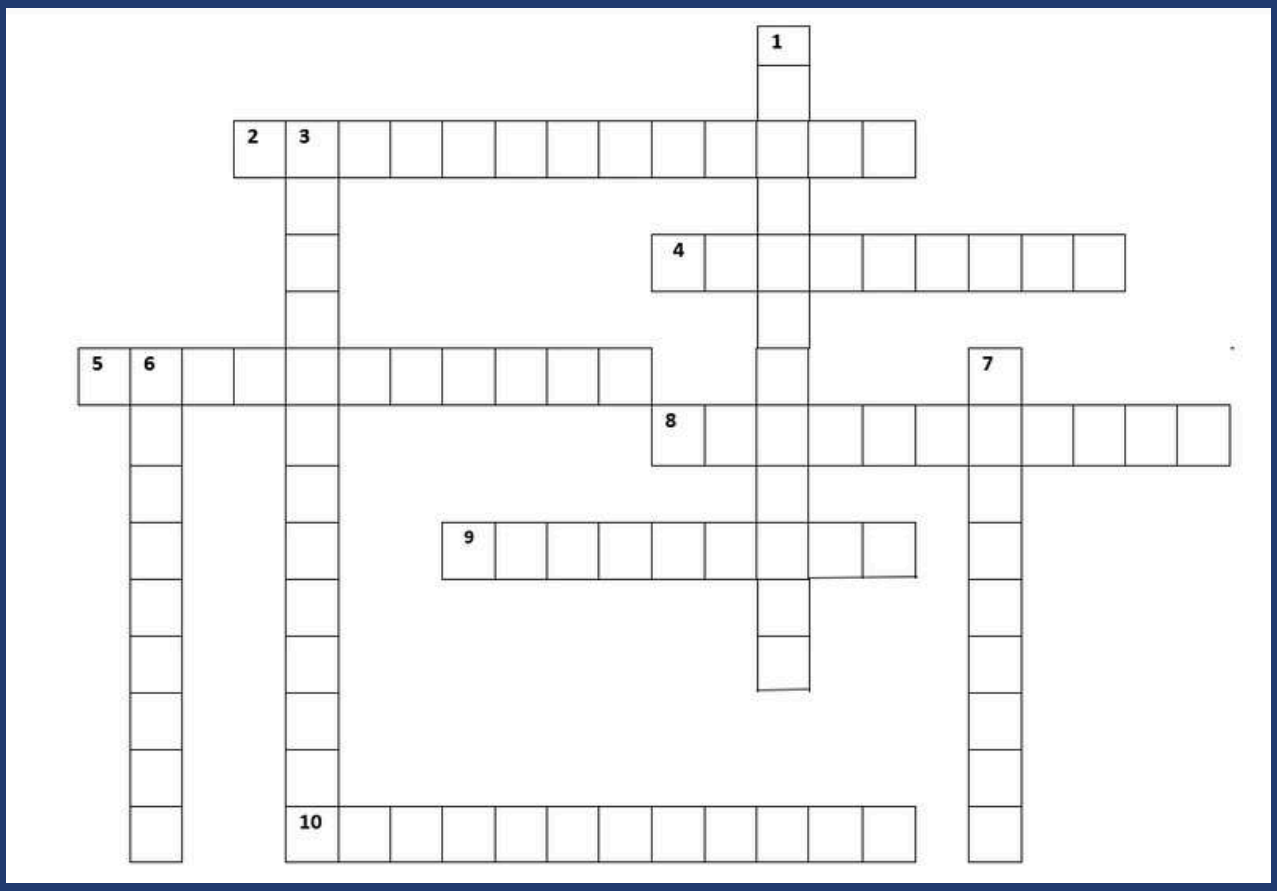
Crossword



Across

2. Drug of Choice (DOC) for prevention of Acute Mountain Sickness
4. DOC for Paroxysmal Supraventricular Tachycardia
5. DOC for Graves' disease
8. DOC for coccidioidal meningitis
9. DOC for chronic hepatitis B in pregnancy
10. DOC for treatment or postexposure prophylaxis of pertussis

Down

1. DOC for tinea capitis
3. DOC for Pneumocystis jirovecii pneumonia
6. DOC for patients with phytosterolemia
7. DOC for Juvenile Myoclonic Epilepsy

KEY CLUES

2.EDIMALOZATECA
5.ELOZAMIHTEM
9.RIVOFONET
1.NIVLUFOESIRG
6.EBIMITEZE
4.ENISONEDA
8. ELOZANOCULF
10. NICYMORHTYRE
3. ELOZAXOMIRTOC
7. ETAORPLAV

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RIDDLES

1] I'm an extensively used analgesic.
My ancestor has been withdrawn from the market due to the occurance of analgesic abuse nephropathy.
Unlike other commonly used analgesics, I have negligible anti-inflammatory effect with unique action.
In higher doses, I'm hepatotoxic and chronic alcoholics should handle me with caution.
My toxic metabolite can get neutralized by the usage of a mucolytic agent.
Guess who am I?

2] I had been extensively used in a common hyper- responsive respiratory condition.
I'm derived from Tea leaves and structurally similar to Caffeine.
I have a narrow safety margin and more prone to cause convulsions and cardiac arrythmias.
I serve as a bronchodilator.
Guess who am I?

3] My existence has been described by the emergence of a hemorrhagic disease in cattle fed with spoiled sweet clover hay, in 1924.
Initially, I was used as a rat poison.
My action is closely associated with a fat- soluble vitamin in the human body.
I'm teratogenic in nature.
I'm active orally and has been used for prophylaxis and treatment of several thrombotic conditions.
Guess who am I?

4] I've been derived from a bacteria and act against Fungal and Protozoal infections.
Due to my severe Nephrotoxic nature, my systemic use is restricted and being used topically and via targeted delivery.
I can act by creating micropores on the target cell membrane.
Nowadays I've been prescribed for severe and refractory infections.
Guess who am I?

5] I'm a colorless, odorless and non- inflammable gas.
Even though I'm a less potent anesthetic, I have a major role in General anesthesia due to my unique properties.
I'm a good analgesic and have been used for dental and obstetric analgesia.
Guess who am I?

6] I belong to the antibiotic class obtained from soil actinomycetes.
I can act by impairing bacterial protein synthesis and has broad spectrum of action.
My use is restricted in pregnancy and in children due to defective bone and teeth development.
Be cautious about sunlight exposure due to the risk of phototoxicity.
I'm the drug of choice for the Rickettsial and Chlamydial infections.
Guess who am I?

7] I'm an anticancer drug with cell cycle- synthetic phase- specific activity.
I have chemotherapeutic effect against Choriocarcinoma and Acute Lymphoblastic Leukemia.
I'm an immunosuppressive agent as well and commonly used in Rheumatoid Arthritis and Psoriasis.
My major adverse effect is Megaloblastic anemia and can be ameliorated by using rescue Folinic acid.
Guess who am I?

Answer Clues
1.lomatecaraP 2. enillyhpoehT 3. nirafraW
4. B-niciretohpmA 5. edixo suortiN
6. enilcycyxoD 7.etaxertohteM

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ILLUSTRATIONS-COVER PAGE AND BACK PAGE DR ROSE NINNYA