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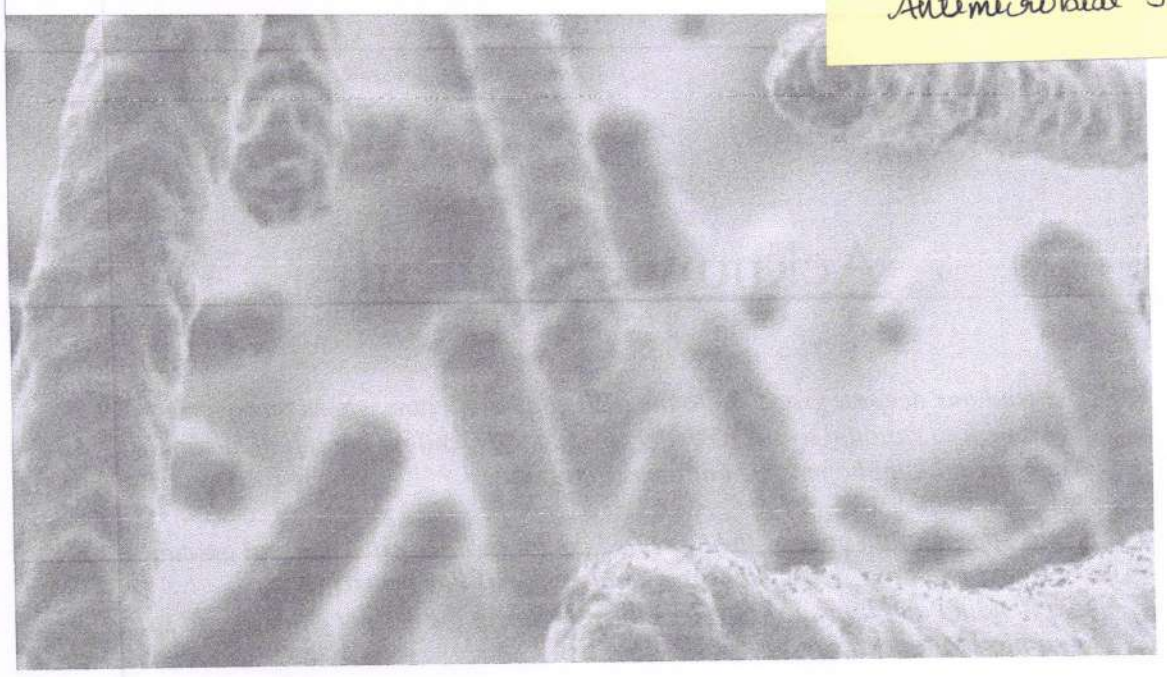
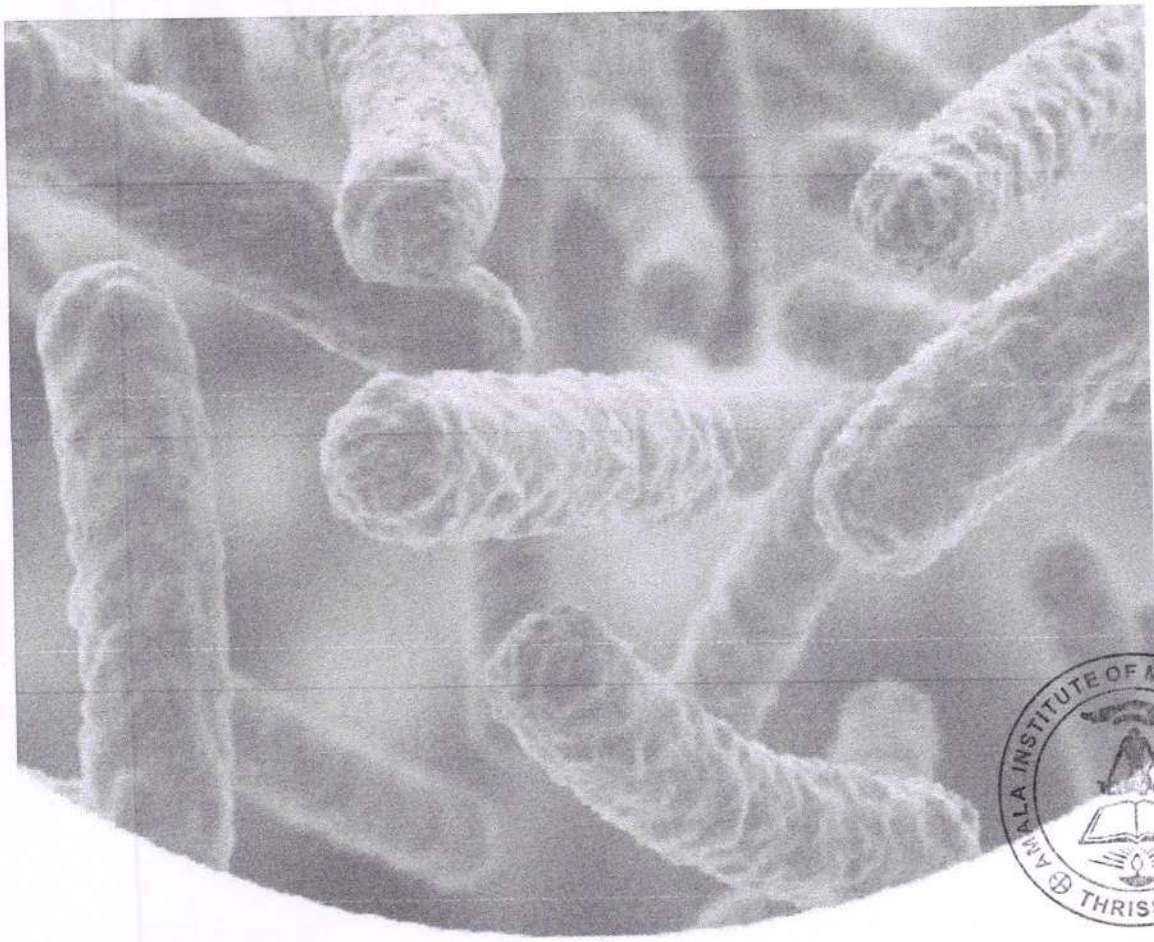
Antimicrobial Policy.



ANTIMICROBIAL POLICY
2025-2026



AMALA INSTITUTE OF MEDICAL SCIENCES THRISSUR

Acknowledgement

We extend our deepest gratitude to the dedicated clinicians whose unwavering commitment to rational use of antimicrobials and relentless pursuit of medical advancement have shaped this antimicrobial policy.

Special appreciation goes to the esteemed doctors whose expertise and guidance have illuminated our path. Their invaluable insights have enriched our understanding and informed our decisions, ensuring the utmost efficacy and safety in antimicrobial prescription.

We extend heartfelt thanks to the esteemed heads of departments for their continuous support and encouragement throughout the development of this policy. In particular, we express our gratitude to the Microbiology for their indispensable contributions, invaluable expertise, and unwavering dedication to combating antimicrobial resistance.

To all those who have played a part, directly or indirectly, in shaping this policy, we offer our sincerest appreciation. Your collective efforts have been instrumental in advancing patient care and promoting the responsible use of antimicrobials.

With gratitude,
Departments of Infectious Diseases & Antimicrobial Stewardship

INDEX

FEBRILE NEUTROPENIA

SYNDROME	COMMON ORGANISMS	PREFERRED REGIMEN/ FIRST LINE TREATMENT	ALTERNATIVE REGIMEN	DURATION	REMARKS
Febrile Neutropenia Neutropenia is defined as an absolute neutrophil count (ANC) of less than 500/µL, or less than 1000/µL with an anticipated decline to less than 500/µL in the next 48-hour period. Neutropenic fever is a single oral temperature of 38.3° C (101° F) or a temperature of greater than 38.0° C (100.4° F) sustained for more than 1 hour in a patient with neutropenia.	Low Risk (MASCC >21, No comorbidities, normal RFT, LFT, neutropenia <7 days) Aerobic GNB, Streptococcus Viridians	Ciprofloxacin 750mg BD PO + Amoxicillin - clavulanate 875 mg BD PO	Clindamycin if allergic to penicillin	• If cultures are negative for gram-positive organisms stop Teicoplanin after 48 hours. • Review blood cultures after 48 hours. • For patients who were commenced on initial meropenem, step down to piperacillin/tazobactam or Cefoperazone/Sulbactam at 48 hours if there is no specific indication to continue cover for multi-resistant organisms. • Discontinue empiric antibiotics in patients who have negative blood cultures at 48 hours, who have been afebrile for at least 24 hours and who have evidence of marrow recovery [ANC>500/microL] • Duration of treatment with sensitive antibiotic for BSI is 7-10 days, provided adequate source control is achieved • Longer duration if patient is symptomatic, organism persisting or source control is inadequate.	• Follow Up Blood cultures to be collected at 24 hrs if the patient is still febrile and again at 48 hrs if remaining febrile. • Febrile at 4-5 days: Reassess and consider further investigations and imaging Consider switching to higher antibiotics. Access for fungal/ viral etiology
	Moderate Risk (MASCC >21 , IP at time of fever) -consider GNB including Pseudomonas	Piperacillin Tazobactam 4.5 g Q6H	-Cefepime 2g Q8H		
	High Risk (MASCC <21, neutropenia > 7 days, deranged LFT, RFT altered mental status, hypoxia) Aerobic GNB including Pseudomonas, GP including MRSA and Enterococcus species	Meropenem 1 g IV Q8H (can consider high dose Meropenem 2g Q8H over 3 hours) -Consider adding Teicoplanin Consider • Teicoplanin 10 mg/kg Q12H x 3 days followed by Q24H in -AML on induction -Hemodynamically unstable patients -Skin/soft tissue/ catheter site infections -High risk • Initiate on Meropenem 40 mg/kg Q8H - Previous ESBL infection/colonisation • Polymixin B /Colistin - Hemodynamically unstable patients - patients with CRO colinisation/ prev infection	Vancomycin 15-20 mg/kg/dose Q8H OR Q12H instead of Teicoplanin Amikacin 20 mg/kg q24h		
Suspect invasive fungal infection in patients with persistent fever after 4 days of empirical antibacterial therapy	Aspergillus	Voriconazole IV 6mg/kg q12h for 2 doses then 4 mg/kg q12h or Tab 400mg Q12H first 2 doses followed by 200 mg BD if weight >40kg.	Liposomal Amphotericin B IV 3- 5 mg/kg in dextrose 5% over 2 hours q24h	6-12 weeks	-LFT monitoring if on Voriconazole - Renal modification for IV Voriconazole -RFT monitoring for Amphotericin
Patients at high risk of invasive fungal disease	Candida	Caspofungin IV 70 mg on day 1 followed by 50 mg q24h, if more than 50 kg	-Liposomal Amphotericin B IV 3- 5	Continue till 2 weeks after complete resolution of signs and symptoms	-RFT monitoring for Amphotericin

(IFD) are patients of AML, high risk ALL, relapsed acute leukemia, prolonged neutropenia, patients on high dose corticosteroids Diagnosis- Based on imaging, culture, host factors and fungal biomarkers			mg/kg in dextrose 5% over 2 hours q24h -Fluconazole if susceptible spp		
	Mucormycosis	Liposomal Amphotericin B IV 5-10 mg/kg in dextrose 5% over 2 hours q24h	Posaconazole if susceptible (preferred as step down therapy only)	4-12 weeks/ till neutropenia resolves	-RFT monitoring for Amphotericin -Surgical intervention and debridement when needed
	Antifungal prophylaxis in high risk	Posaconazole Delayed release tablets 300 mg BD two doses followed by 300 mg OD, for patients > 40 kg.	Fluconazole	Till neutropenia resolves in high risk patients for fungal infection.	-TDM for Posaconazole - caution in patients with qtc prolongation

CNS INFECTIONS

SYNDROME	COMMON ORGANISMS	PREFERRED REGIMEN/ FIRST LINE TREATMENT	ALTERNATIVE REGIMEN	DURATION	REMARKS
Acute bacterial Meningitis (ABM)	Pneumococcus, Meningococcus, Hemophilus influenza, Klebsiella pneumoniae, E coli, Staphylococcus	Ceftriaxone 2g IV Q12H + Vancomycin 1g IV Q12h		10-14days	Antibiotics should be started as soon as the possibility of bacterial meningitis becomes evident, ideally within 30 minutes. Do not wait for CT scan or LP results.
Acutebacterial Meningitis in Elderly (>55 yrs), Alcoholics, Immune compromised	Above + Listeria monocytogenes	Add Inj.Ampicillin 2gm IV Q 4 H to above regimen	Meropenem 2gm IV Q 8 H + Vancomycin 1gm IV BD	14 days	Give inj dexamethasone 15- 20 minutes prior to giving the first dose of antibiotic . Continue in pneumococcal meningitis in adults and Hemophilus influenza meningitis in children.The dose is 0.15 mg/kg every 6 hours for 48 hours -96 hours (10 mg 6 hourly in adults)
Acute Encephalitis	HSV, VZV, EBV, CMV, Nipah	Acyclovir 10-15 mg/kg IV Q8H		14-21 days	Acyclovir has activity against HSV & VZV encephalitis only. If alternative diagnosis proved, stop acyclovir

Health Care Associated Meningitis/ Ventriculitis	Acinetobacter, Pseudomonas, Klebsiella Staphylococcus aureus/ CONS	Methicillin sensitive Staphylococcus	Primary therapy: Cloxacillin 2 gm IV Q 6 H	Alternative therapy: Ceftriaxone 2 gm IV Q 12 H / Cefazolin 2g IV Q 8 H	Empirical therapy depends on local flora but usually includes high dose meropenem with vancomycin. Therapy should be modified based on culture reports. Surgical drainage of pus and removal of hardware may be needed. For carbapenem resistant pathogens, intraventricular / intrathecal therapy with colistin/ polymyxin B/ aminoglycosides is indicated. Get ID consultation
		Methicillin resistant Staphylo coccus	Primary therapy: Vancomycin 15 mg/kg (max 2 gm) IV Q 8 H	Alternative therapy: Linezolid 600 mg IV BD / Cotrimoxazol e 3-6 mg/kg TID if susceptible	
		Non ESBL gram negative	Primary therapy: Ceftazidime 2 gm IV Q 8 H	Alternative therapy: Cefepime 2g IV Q 8 H	
		ESBL gram negative	Primary therapy: Meropenem 2 gm IV Q 8 H	Alternative therapy: Imepenem cilastatin 500 mg IV Q6H/ Cefepime 2g IV Q 8 H	Follow MDR protocol. Get ID consultation
		Carbapenem resistant gram negative	Systemic Colistin/ Polymyxin B with (depending upon susceptibility) high dose tigecycline/minocycline/ fosfomycin/ cotrimoxazole/quinolones/chloramphenicol With intraventricular/ intrathecal colistin/ polymyxin / aminoglycoside.		
Brain Abscess	Streptococci, Bacteroides, Enterobacteriacea eStaphylococcus aureus	Ceftriaxone 2g IV Q12H + Metronidazole 500 mg IV Q6H	Meropenem 2gm IV Q 8 H Add Vancomycin 2gm/ day IV Q 12 H if MRSA suspected	for at least 4-6 weeks and till radiologic resolution/sta bilization	Exclude TB, Nocardia, Aspergillus, Mucor (If fungal etiology confirmed, Add Amphotericin B/ Voriconazole) If abscess <2.5cm & patient neurologically stable, await response to antibiotics. Otherwise, consider aspiration/surgical drainage and modify antibiotics as per sensitivity of aspirated/ drained secretions.
Acute meningoencephalitis	Strep. pneumoniae, Neisseria meningitides HSV, VZV, EBV, CMV, Nipah, Naegleria	Ceftriaxone 2g IV Q12H + Vancomycin 1g IV Q 12 H + Acyclovir 10-15 mg/kg IV over 1-hour Q8H		10-14 days. If the diagnosis of HSV is made a treat for 14-21 days	
CSF Shunt Infections	Propionibacterium acnes,S. aureus, Coagulase negative staphylococci	Ceftriaxone 2g IV Q12H +	Meropenem 2g IV Q 8 H+ Vancomycin 1g IV Q 12H	The total duration of antimicrobial therapy varies from 7-10	Shunt removal &/or replscement may be needed. Get ID consultation

		Vancomycin 1g IV Q 12H		days for CONS to 10-14 days for S. aureus and gram negative bacilli.	

INFECTIVE ENDOCARDITIS

Empirical Treatment

SYNDROME	COMMON ORGANISMS	PREFERRED /FIRST LINE REGIMEN	ALTERNATIVE REGIMEN	DURATION	REMARKS
Native Valve IE (No h/o skin/soft tissue infection or abscesses, IV drug abuse, CVC line or recent cardiac/prosthetic valve replacement)	VGS, Enterococci, Nutritionally Variant Streptococci (NVS), Streptococcus gallolyticus	Ampicillin-sulbactam 3g q6h IV + Gentamicin 1 mg/kg q8h IV	Ampicillin 2 g IV in q4h + Ceftriaxone 2 g IV q24h + Gentamicin 1 mg/kg q8h OR Vancomycin 25 mg/kg loading dose followed by 30 mg/kg per 24 h IV in 2-3 equally divided doses + Gentamicin 1 mg/kg q8h IV	4 weeks	Gentamicin used for synergy Advantage of Ampicillin sulbactam over CP/Ampicillin: AS Covers βlactamase producing Enterococci & HACEK Group of organisms Combination of ceftriaxone with Gentamicin does not cover Enterococcus
Native Valve IE (Risk factors for S. aureus)	MSSA, CA-MRSA, HA MRSA	Vancomycin 25 mg/kg loading dose followed by 30 mg/kg per 24 h IV in 2-3 equally divided doses + Gentamicin 1 mg/kg q8h IV	High dose Teicoplanin (10-12 mg/kg three doses 12 h apart f/b OD)/ Daptomycin 10 mg/kg q24h (for Right-sided IE) Or 8-10 mg/kg q24h (For left- sided IE) + Gentamicin 1 mg/kg q8h	4-6 weeks	If MSSA identified, change to : Cloxacillin or Cefazolin
Prosthetic valve	Staphylococci (including methicillin-resistant S. aureus), Streptococci, Enterococci,and Gram-negative organisms	Vancomycin (25 mg/kg loading dose followed by 30mg/kg per 24 h IV) + Gentamicin 1 mg/kg q12h + Rifampicin 300-600 mg q12H po/IV	—	6 weeks	

Definitive antimicrobial treatment for IE

COMMON ORGANISMS	SYNDROME		PREFERRED/FIRST LINE REGIMEN	ALTERNATIVE REGIMEN	DURATION	REMARKS
		Penicillin-susceptible (MIC ≤0.12 µg/mL)	Penicillin G 12 to 18 million units per 24 hours IV either continuously or in 4 or 6 divided doses	Alternatives Ampicillin 2 g IV in q4h	4-week	Beta-lactam-intolerant patients: Vancomycin[6] 30 mg/kg per 24 hours IV in 2 divided doses

Oral streptococci and Streptococcus gallolyticus group, NVS	Native Valve IE			Or Ceftriaxone 2 g/day i.v. in 1 dose		
		Relatively penicillin-resistant strains MIC >0.12 mcg/mL and <0.5 mcg/mL	Penicillin G 24 million units per 24 hours IV in 4 or 6 divided doses or continuous infusion + Gentamicin 3 mg/kg per 24 hours IV or IM in 1 dose for 2 weeks	Ampicillin 12 g per 24 hours (200 mg/kg per 24 hours) in 6 divided doses for 4 weeks or Ceftriaxone¥ 2 g per 24 hours IV or IM in 1 dose for 4 weeks plus Gentamicin 3 mg/kg per 24 hours IV or IM in 1 dose for 2 weeks	4 week	Vancomycin 30 mg/kg per 24 hours IV in 2 divided doses for 4 weeks plus Gentamicin 3 mg/kg per 24 hours IV or IM in 1 dose for first 2 weeks
		Resistant to penicillin MIC ≥0.5 mcg/mL	Penicillin G 24 million U/day i.v. either in 4–6 doses or continuously + Gentamicin 3 mg/kg/day i.v. or i.m. in 1 dose	Amoxicillin 2 g/day i.v. in 6 doses or Ceftriaxone 2 g/day i.v. in 1 dose + Gentamicin 3 mg/kg/day i.v. or i.m. in 1 dose	4 week	Vancomycine 30 mg/kg/day i.v. in 2 dosese plus Gentamicin 3 mg/kg per 24 hours IV or IM in 1 dose for first 2 weeks
	Prosthetic valve	Penicillin Susceptible (MIC ≤0.12 mcg/mL	penicillin G 12 to 18 million units per 24 hours IV in four or six divided doses or continuously for six weeks	Amoxicillin 100 to 200 mg/kg per 24 hours IV in four or six divided doses for six weeks or Ceftriaxone¶ 2 g per 24 hours IV in one dose for six weeks	6 week	Vancomycin 30 mg/kg/day i.v. in 2 dosese
		Resistant to penicillin MIC ≥0.5 mcg/mL	Penicillin G 24 million U/day i.v. either in 4–6 doses or continuously + Gentamicind 3 mg/kg/day i.v. or i.m. in 1 dosed	Amoxicillin 2 g/day i.v. in 6 doses or Ceftriaxone 2 g/day i.v. in 1 dose + Gentamicind 3 mg/kg/day i.v. or i.m. in 1 dosed	6 week	Vancomycin 30 mg/kg/day i.v. in 2 dosese + Gentamicin 3 mg/kg/day i.v. or i.m. in 1 dose
Enterococci	Native & Prosthetic Valve	Beta-lactam and gentamicin-susceptible strains	Ampicillin 12 g/day i.v. in 4–6 doses + Ceftriaxone 4 g/day i.v. in 2 doses	Ampicillin 12 g/day i.v. in 4–6 doses + Gentamicinc 3 mg/kg/day i.v. or i.m. in 1 dose	6 weeks (Gentamicin for 2 weeks)	
		High-level aminoglycoside resistance	Ampicillin 12 g/day i.v. in 4–6 doses + Ceftriaxone 4 g/day i.v. or i.m. in 2 dose	Amoxicillin 200 mg/kg/day i.v. in 4–6 doses + Ceftriaxone 4 g/day i.v. or i.m. in 2 dose	6 weeks	
		Beta-lactam resistant Enterococcus spp. (E. faecium)	Vancomycin 30 mg/kg/day i.v. in 2 doses + Gentamicin 3 mg/kg/day i.v. or i.m. in 1 dose		6 weeks (Gentamicin for 2 weeks)	
		Vancomycin-resistant Enterococcus spp.	Daptomycin 10–12 mg/kg/day i.v. in 1 dose + Ampicillin 300 mg/kg/day i.v. in 4–6 equally divided doses	Daptomycin 10–12 mg/kg/day i.v. in 1 dose + Fosfomycin 12 g/day i.v. in 4 doses/Ceftaroline 1800 mg/day i.v. in 3 doses/Ertapenemg 2 g/day i.v. or i.m. in 1 dose	6 weeks	

Staphylococci	Native Valve	Methicillin-susceptible staphylococci	Cloxacillin12 g/day i.v. in 4–6 doses Or Cefazolin 6 g/day i.v. in 3 doses		4–6 weeks	Cefazolin can replace cloxacillin in patients with non–immediate-type hypersensitivity reactions to penicillin
		Methicillin-resistant staphylococci	Vancomycin 30–60 mg/kg/day i.v. in 2–3 doses	Daptomycin 10 mg/kg/day i.v. in 1 dose + Cloxacillin 12 g/day i.v. in 6 doses Or Ceftaroline 1800 mg/day i.v. in 3 doses Or Fosfomycin 8–12 g/day i.v. in 4 doses	4–6 weeks	
	Prosthetic valve	methicillin-susceptible staphylococci	Cloxacillinc 12 g/day i.v. in 4–6 doses Or Cefazolin 6 g/day i.v. in 3 doses + Gentamicin 3 mg/kg/day i.v. or i.m. in 1 (preferred) or 2 doses + Rifampin 900 mg/day i.v. or orally in 3 equally divided doses		6 weeks (Gentamicin for 2 weeks)	Cefazolin can replace cloxacillin in patients with non–immediate-type hypersensitivity reactions to penicillin
		methicillin-resistant staphylococci	Vancomycin 30–60 mg/kg/day i.v. in 2–3 doses + Gentamicind 3 mg/kg/day i.v. or i.m. in 1 (preferred) or 2 doses + Rifampin 900–1200 mg/day i.v. or orally in 2 or 3 divided dose	Vancomycin 30–60 mg/kg/day i.v. in 2–3 doses	6 weeks (Gentamicin for 2 weeks)	
HACEK	Native Valve / Prosthetic valve		Ceftriaxone¶ 2 g per 24 hours IV in one dose for 4 weeks$^{\Delta}$	Ampicillin$^{\diamond}$ 12 g per 24 hours IV in six divided doses + Gentamicin$^{\text{¥}}$ 3 mg/kg per 24 hours IV or IM in two or three divided doses	4 weeks (NVE 6 weeks (PVE)	

ENT INFECTIONS

SYNDROME	COMMON ORGANISM	PREFERRED / FIRST LINE THERAPY	ALTERNATIVE REGIMEN	DURATION	REMARKS
Malignant otitis externa	P. aeruginosa(in >90% cases)	Piperacilin+Tazobactam 4.5gm IV Q 6h OR Ciprofloxacin 500 mg IV BD	Ceftazidime 2g IV Q 8 H OR Imipenem 1 g IV Q TID OR Meropenem 1 g IV TID	6-8 Weeks	

Acute otitis media	S.pneumoniae, H.influenzae, Morexella, catarrahalis.	Amoxicillin+clavulanate 1.2 G IV BD OR Cefpodoxime 100 mg PO BD / Cefuroxime Axetil 250mg PO BD	Ceftriaxone 2 g IV OD for 3days antibiotics	Duration of treatment: If age<2 years: 10 days If age>2years : 5-7 days	
Mastoiditis	a) Acute Mastoiditis S.pneumoniae, S.aureus, H.infiuenzae,P.aerugin osa.	• Cefotaxime 1-2gm IV 8 hrly • Ceftriaxone 2gm IV OD			
	b) ChronicMastoidi tis Polymicrobial	Piperacillin-tazobactam 4.5g IV Q 8 H	Meropenem 1gm IV Q8 H		
Acute Pharyngitis/ tonsillitis	Exudative/ Diffuse Erythema Mostly viral Group A,C,G Streptococcus,Infectiou s mononucleosis	Azithromycin 500 mg PO OD	Clindamycin 300-450 mg PO Q 6-8 H	5 Days	
	Membranous pharyngitis C.diptheriae	Erythromycin 500mg IV QID OR PenicillinG 50,000units/kg IV BD			• Diptheria antitoxin: Horseserum<48hrs:20,000-40,000units, • Nasopharyngeal membranes: 40,000- 60,000 units >3days & bull neck: 80,000- 1, 20,000units
	Epiglotitis (Supraglotis) H.influenzae, S.pyogenes, S.pneumoniae ,S.aureus.	Cefotaxime 1g IV TID OR Ceftriaxone 2g IV OD	Levofloxacin 10mg/kg IV OD + clindamycin 7.5mg/kg IV Q 6 H		

RESPIRATORY INFECTIONS

SYNDROME	COMMON ORGANISMS	PREFERRED REGIMEN/ FIRST LINE TREATMENT	ALTERNATIVE REGIMEN	DURATION	REMARKS
Community acquired pneumonia			Azithromycin 500 mg p.o. OD Doxycycline 100 mg .BID Levofloxacin 750 mg p.o. OD	5-7days	Beta lactam is preferred over macrolides due to high prevalence of macrolide resistance in S. pneumoniae in India.
CURB 1 or outpatients without co-morbidities	Respiratory viruses, Strep pneumonia, Mycoplasma, Chlamydophila pneumoniae	Co Amoxiclav 625mg TID (or 1gm PO BD)	Cefuroxime/ Cefpodoxime +	5-7 days	Add Cap Oseltamivir 75 mg BD 5 days if

CURB 1 outpatients with co-morbidities (CHD, liver, renal or lung disease, diabetes mellitus, malignancies, alcoholism or use of immunosuppressive drugs) or use of antimicrobial in 3 months	Respiratory viruses, Strep pneumonia, Mycoplasma, Chlamydophila pneumoniae	Co-amoxiclav + macrolide(azithromycin/clarithromycin)/doxycycline	macrolide/doxycycline		influenza suspected
CURB score 2	Respiratory viruses, Strep pneumonia, Mycoplasma pneumonia, Chlamydophila pneumonia, Legionella	Ceftriaxone 2 g i.v. OD+ Azithromycin 500 mg i.v. OD/ doxycycline 100mg BD x 5 – 7 days (+/- Oseltamivir 75 mg p.o. BID x 5 days as indicated)	Cefotaxime 2gm IV q8h / Amoxclav 1.2 gm IVq8h + macrolide/doxycycline	5-7 days	The empiric addition of oseltamivir in patients with CAP should be considered in the setting of an influenza outbreak Discontinue oseltamivir if PCR negative Continue if clinical suspicion of influenza high
CURB 3 or more or any severe CAP in ICU without any comorbidities -	Strep pneumonia, Legionella, Klebsiella pneumonia, H .influenzae, Respiratory viruses, primarily influenza	Ceftriaxone 2 g IV OD+ Azithromycin 500 mg IV/PO OD/ Doxycycline 100mg BD x 5 – 7 days (+/- Oseltamivir 75 mg PO BID x 5 days as indicated)	Cefotaxime 2 gm thrice daily IV / Piperacillin-Tazobactam 4.5 g IV Q8H + Azithromycin 500 mg IV/PO OD x 5 – 7 days	5-7 days	If CA MRSA is suspected then Vancomycin or Teicoplanin may be added
Inpatient ICU with risk for GNBs including Pseudomonas (Chronic respiratory disease (COPD, bronchiectasis, asthma, chronic bronchitis), neurologic disorders, enteral tube feeding and immunocompromised states) without severe sepsis /septic shock	Strep pneumonia, Legionella, Klebsiella pneumonia, H .influenzae, Respiratory viruses, primarily influenza	Piperacillin- Tazobactam 4.5 g IV Q8H + Azithromycin 500 mg IV/PO. OD / Doxycycline 100mg BD x 7 days (+/- Oseltamivir 75 mg PO BID x 5 days)	Cefepime/Meropenem 1g Q8H with macrolide/Doxycycline		
Inpatient ICU with risk for GNBs including Pseudomonas with severe sepsis /septic shock			Meropenem 1 gm thrice daily IV	Azithromycin 500 mg i.v. OD / Doxycycline 100mg BD x 7 days (+/- Oseltamivir 75 mg p.o. BID x 5 days)	
Ventilator associated pneumonia				8-10 days	

Antimicrobials (to be started after obtaining cultures) If hemodynamic instability- (systolic BP <90 mm Hg) requiring inotropes	E. coli, Proteus, Pseudomonas aeruginosa, Acinetobacter spp.	Meropenem 2 g IV TID +/- Inj Polymyxin B 15 lac units followed by 7.5 lac units BD			
If no hemodynamic instability:	E. coli, Proteus, Pseudomonas aeruginosa, Acinetobacter spp.	Meropenem 1 g i.v. TID + Amikacin 15 mg/kg i.v. OD c. Modify once culture and sensitivity reports available		8-10 days	
Acute bacterial pharyngitis	Group A streptococcus (GAS), Respiratory viruses	Amoxicillin 500 mg p.o.TIDx5-7 days	Azithromycin 500 mg p.o. OD x 5 days	5-7 days	Limit antibiotic prescriptions to patients who are most likely to have GAS infection (identified by Centor criteria - fever, no cough, tonsillar exudates, & tender anterior cervical lymphadenopathy) The large majority of adults with acute pharyngitis have a self-limited viral illness, for which supportive care (analgesics, antipyretics, saline gargles) only is needed
Acute epiglottitis	H. influenzae	Ceftriaxone 1 – 2 g i.v. OD x 7 days			Airway management
Acute bronchitis	Viral	Symptomatic treatment only			
Acute bacterial rhinosinusitis	Strep. pneumoniae H. influenzae M. catarrhalis	Amoxicillin- Clavulanate 1 g p.o. BID		7 days	
Acute bacterial exacerbation of COPD (presence of at least 2 of the following 3 symptoms: a. Increased dyspnea, b. Increased sputum volume, and c. Increased sputum purulence)	Strep. pneumoniae, H. influenzae, M. catarrhalis, Respiratory viruses	Amoxicillin- Clavulanate 1 g p.o BID/625 mg TID	Azithromycin 500 mg p.o. OD Doxycycline 100 mg p.o. BID	7 days	• Start oseltamivir if clinical suspicion of influenza
Bronchiectasis, acute exacerbation (increased cough, sputum volume and purulence)	H. influenzae, S. pneumoniae, P. aeruginosa	Piperacillin- tazobactam 4.5 g Q8H IV		7-10 days	
Lung abscess	Anaerobes (Peptostreptococcus, Prevotella, Bacteroides (usually not B. fragilis), And Fusobacterium Spp.)	Amoxicillin-sulbactam 3g Q6H IV	Piperacillin/Tazobactam 4.5 g Q6H/Q8H	Till clinical and radiological resolution; (usually 1-3 months)	Switch to oral on improvement (C. Amoxicillin-clavulanate)
Empyema	Streptococcus, Klebsiella, . H.influenza, anaerobes	Inj Piperacillin-tazobactam 4.5 g Q6H Suspected MRSA: add vancomycin/ Teicoplanin)	Meropenem 1g TDS IV	Till satisfactory radiological resolution	-Evaluate for tuberculosis -Drain

		Modify antibiotics once culture reports available		(3-6 weeks or more)	

OBSTETRICS AND GYNECOLOGICAL INFECTIONS

DEFINITIVE THERAPY

SYNDROME	COMMON ORGANISM	PREFERRED/FIRST LINE	ALTERNATIVE REGIMEN	DURATION	REMARKS
Puerperal sepsis / Septic abortion/ chorioamnionitis	Streptococci (A, B, D), S.aureus,E.coli, Enterobacteriaceae includingKlebsiella,Enterobacter,Citrobacter, Pseudomonas aeruginosa,Proteus mirabilis,Gardnerellavaginalis,Bacteroides,Clostridium perfringens.	Cefotaxim 1 g Q 8 hrly+metronidazole 500 mg Q 8 hrly+ gentamicin 60mg IV 8 hourly			If the patient is in septic shock, consider meropenem with or without amikacin plus vancomycin, or Teicoplanin to cover MRSA . Get ID consultation
Pelvic Inflammatory disease (mild to moderate)	N.gonorrhoeae, C. trachomatis , anaerobes, enteric Gram negative bacilli, Bacteroides, GBS, GAS, S. Aureus	Tab. Cefixime400 mg orally STAT + Tab. Metronidazole 400 mg tds + Cap. Doxycycline100 mg bd	Levofloxacin 500 mg ODwith Metronidazole 400 mg Q 8 hrly OR Ceftriaxone 250 mg IM single dose + Doxycycline orally 100 mg BD with or without Metronidazole500 mg BD	For 14 days	Rule out genitourinary tuberculosis before prescribing levofloxacin
Pelvic Inflammatory disease(severe) eg turbo-ovarian abscess, pelvic abscess		Cefotaxim1 g Q 8 hrly/ Ceftriaxone 2g iv OD + metronidazole 500 mg Q 8 hrly + Doxycycline 100 mg BD	Ampicillin sulbactam/Piperacillin tazobactam + Doxycycline		transition to oral once clinically stable and after culture sensitivity report. Get ID consultation
Bacterial vaginosis	Gardnerella vaginalis	Oral Metronidazole400 mg BD, OR Intravaginal clindamycin Crea m 2% x 7 days	Tinidazole2 g orally OD X 2 days/ 1 g orally OD X 5 days		For 5-7 days

Surgical Prophylaxis For Gynecological Procedures

SYNDROME	COMMON ORGANISMS	PREFERRED REGIMEN/ FIRST LINE TREATMENT	ALTERNATIVE REGIMEN	DURATION	REMARKS
Vaginal delivery	Group B Streptococci (GBS)	Ampicillin 2 gm IV followed by 1g IV 4-6 hourly	Cefazolin 2 g IV followed by 1 g 8 hourly Beta lactam allergy- Vancomycin1 gm IV 12 hourly	till delivery	For GBS prophylaxis in women who do not know their GBS status in the following situations: • Preterm labour (< 37 wks) • Prolonged rupture of membranes (>18 hrs) • Fever during labor or chorioamnionitis • History of the previous baby with GBS infection • Bladder or kidney infection due to GBS
4th Degree Perineal Tear	S. aureus,Enterobacteriaceae, Anaerobes	Ampicillin 2 gm IV +	Cefazolin1 g IV/Cefuroxime 1.5g IV +	Single dose	Beta lactam allergy- Clindamycin 600-900 mg IV

		metronidazole 500 mg IV	metronidazole 500 mg IV OR Amoxicillin-clavulanic acid 1.2 g IV		
Preterm Pre-Labour Rupture Of Membranes	Enteric gram-negative bacilli, Ureaplasma, mycoplasma	Ampicillin 2 g IV followed by 1 gm 4-6 hourly for 48 hours followed by Oral amoxycillin500 mg 8 hourly for 5 days+oral erythromycin333 mg 8hourly for 7 days		7 days	
Caesarean delivery	GBS, Staphylococci, Enterococci	Cefazolin 2gm IV+ Azithromycin 500 mg IV Cefazolin (3gm IV) if the patient is >100kg	Beta lactam allergy-clindamycin600-900mg IV + gentamicin1.5mg/kg IV	Only single dose recommended	
Rescue cervical encerclage	Vaginal flora	Inj ampicillin2gm IV single dose		Only single dose recommended	
Hysterectomy (AH, VH, laparoscopic) and surgeries for pelvic organ prolapse and/or stress urinary incontinence	Staphylococci, Enterococci, Bacteroides spp	Cefazolin2gm IV	Cefuroxime 1.5 g IV+/ metronidazole 500 mg IV	single dose	If allergic to cephalosporin, use clindamycin600 mg IV + gentamycin60 mg IV.
Laparoscopy (uterus and/or vagina not entered) / Hysteroscopy / Ectopic pregnancy	S. Aureus	Cefazolin2 gm IV		Only single dose recommended	
Abortions (medical and surgical)	Chlamydia, Neisseria gonorrhoeae	Cefazolin2 gm IV		Single dose	No prophylaxis for missed / incomplete abortion
Hysterosalpingogram	Chlamydia, Neisseria gonorrhoeae	Doxycycline100 mg orally before the procedure		Single dose	Doxycycline continued twice daily for 5 days if there is a history of PID or fallopian tubes are dilated at the procedure.

OPTHALMIC INFECTIONS

SYNDROME	COMMON ORGANISMS	PREFERRED REGIMEN/ FIRST LINE TREATMENT	ALTERNATIVE REGIMEN	DURATION	REMARKS
EYE LID INFECTIONS					
Hordeolum Externum & Internum	S. aureus	Topical eye ointments 3-4 times per day Ofloxacin / Moxifloxacin, Azithromycin, Chloramphemicol		7 Days	• Hot fomentation 3-4 times per day • Systemic NSAIDs & antibiotics indicated depending on severity

Hordeolum With Preseptal Cellulitis	S. aureus	• Tab Amoxicillin + clavulanic acid 625 mg TID • Tab Azithromycin 500 mg OD • Tab Ciprofloxacin 500 mg BD /Tab Ofloxacin 200 mg BD		5 days	• Anti-inflammatory T. Diclofenac sodium 50 mg bid for three or four days. • When pus points drained by I & D or epilation in cases of hordeolum externum
Squamous Blepharitis	S. aureus	• Antibiotic eye ointment: Azithromycin, Ofloxacin, Moxifloxacin • Steroid + antibiotic combination Chloramphenicol(1%) + Hydrocortisone (0.5%) eye ointment • Chloramphenicol &polymyxin B sulphate eye ointment • Steroid eye ointment Loteprednol eye ointment Flurometholone eye ointment		7 Days	Lid hygiene - Clean eyelid margin with eye lid cleaner
Ulcerative Blepharitis	S. aureus	T. Cephalexin 500 mg QID/ T. Amoxicillinclavulanic acid 625 TID/ T. Levofloxacin 500 mg OD / T. Azithromycin 500 mg OD/ Cap. Doxycycline 100 mg BD /		5-7 Days	• Lid margin care with baby shampoo & warm compresses 24hourly. • Artificial tears if associated with dry eye.
Chalazion		• Topical eye ointments Ofloxacin, Moxifloxacin, Azithromycin TID • T. Amoxicillin clavulanic acid 625 mg TDS , T. Azithromycin 500 mg OD		3-5 Days	• Incision & curettage under infiltration anaesthesia . • Anti-inflammatory: T. Diclofenac sodium 50 mg BD for 3-4 days
CONJUCTIVAL INFECTIONS					
Bacterial Conjunctivitis	S.aureus, S. pneumoniae,H.influenzae	• Ofloxacin or Moxifloxacin E/D 0.5% 1 drop q2h(while awake) x 2 days followed by q4h/q8h/ Gatifloxacin 0.3%/ Moxifloxacin0.5% eye drops q2h • Chloramphenicol 1% eye ointment at bed time • Crystalline penicillin eye drops (freshly prepared) (1/10000)		7 Days	Use dark goggles
Adeno Viral Conjunctivitis		• Artificial tear eye drops 2 hrly • Ofloxacin/ Gatifloxacin/ Moxifloxacin drops TID • Flurometholone/ Loteprednol eye drops TID to be tapered.			Severe adeno viral conjunctivitis with pseudo membrane , uveitis and sub epithelial keratitis
Vernal Kerato Conjunctivitis		• Flurometholone/Loteprednol drops to treat acute phase Prophylaxis • Tacrolimus eye ointment at bed time			• Disodium cromoglycate drops / Olopatidine 0.1% eye drops,

		• Cyclosporin eye drops 2-3 times per day			Ketorolac drops 2-3 times per Day • Use dark goggles • Artificial tear drops 4-6 times day
Ophthalmia Neonatorum		• Within the 1st 48 hrs ✓ Inj Ceftriaxone , Gentamicin / Moxifloxacin eye drops 1 hrly (till discharge decreases) , followed by QID ✓ Bacitracin eye oint. QID • 48-72 hrs ✓ Gentamicin/ Tobramycin eye drops q 2 hrly ✓ Neomycin – Bacitracin eye oint. QID • 5-7 days Acyclovir eye oint. 5 times a day • After 1 weekErythomycin eye oint./ Chloramphenicol eye oint. QID		7-14 days	
CORNEAL INFECTIONS					
Acute Bacterial Keratitis	S.aureus, S.pneumoniae, S.pyogenes, Haemophilusspp	• Moxifloxacin eye drops 0.5%/ Gatifloxacin 0.5% q1h x 48 hrs, then tapered as per response. • Fortified Cefazolin 5%/ Vancomycin 5% eye drops • Fortified Amikacin eye drops 1.3% • Atropine sulphate 1% eye ointment twice a day • Homatropine eye drops 2% four times per day • Systemic antibiotic T.Ciprofloxacin 750 mg BD		5 Days	
Fungal Keratitis	Aspergillus, Fusarium, candida	• Natamycin 5% eye drops q1h / q2h tapered depending on response • Freshly prepared Voriconazole eye drops • Freshly prepared Amphotericin (0.15 %) eye drops • Itraconazole 1% eye ointment • Systemic antibiotic : ✓ T.Ketoconazole 200 mg BD ✓ T. Fluconazole 150 mg alt. days ✓ Cap.Itraconazole 100 mg OD		14 Days	• Homatropine drops/ atropine ointment • Empirical therapy not recommended
Herpetic Keratitis		• Acyclovir eye ointment 3 % - 5 times a day/Ganciclovir 0.15 % • T. Acyclovir 800 mg – 5 times • T. Valacyclovir 1mg TID • Fluromethalone / Pred Forte eye drops in Disciform keratitis and uveitis		10- 15 Days	• Homatropine drops 2% - 4 times a day • Lubricant eye drops • Topical antibiotics to prevent super added bacterial infection
ORBITAL INFECTIONS					

Orbital Cellulitis	S.pneumoniae,H.influenzae, M.catarrhalis,S.aureus Group A Streptococcus, Occasionally Gram Negative bacilli post trauma.	• Inj.Cefotaxime– 1gm BD IV • Inj.Amikacin 500 mg BD or 250 mg 8th hrly IV OR • Inj. Cloxacillin 2 gm IV q4h • Inj.Ceftriaxone 2 gm IV q24h(1g IV BD) • Inj.Metronidazole 500 mg IV q12h OR • Inj.Vancomycin 1 gm IV q12h • Inj.Levofloxacin 750 mg OD • Inj.Metronidazole 1 gm Q 24 h x 1 week followed by oral antibiotics as per the improvement			• NSAIDs • If MRSA suspected substitute cloxacillin with vancomycin
Congenital Dacryocystitis		Tobramycin or Ofloxacin eye drops TID after massaging (if pus is regurgitating on massaging)			• Probing under GA if not cured after 9 months of age • Digital massaging 3 times per day for 9 months (Crigglers massage)
Endophthalmitis bacterial : (post – occularsurgery)	S.epidermidis, S.aureus, Streptococci, enterococci, Gram negative bacilli	• Intravitreal antibiotics (InjVancomycin 1 g BD + Injceftazidime 2 g Q 8 hr)	InjVancomycin 1 g BD + InjMeropenem 1 g TID		• Immediate vitrectomy
Endophthalmitis Mycotic (Fungal)	Candida sp AspergillusSp	• Intravitreal amphotericin B 0.005-0.01 mg in 0.1 ml • Systemic therapy: Amphotericin B 0.7 – 1 mg/kg + Flucytosine 25 mg/kg QID	Liposomal Amphotericin B 3-5 mg/kg OR Voriconazole	4-6Weeks	Patients with chorioretinitis and ocular involvement other than endophthalmitis often respond to systemically administered

GASTROINTESTINAL & HEPATOBILIARY INFECTIONS

SYNDROME	COMMON ORGANISMS	PREFERRED /FIRST LINE REGIMEN	ALTERNATIVE REGIMEN	DURATION	REMARKS
Acute gastroenteritis	Viral (Noro, Caliciviruses, Rotaviruses), Entero- toxigenic and entero- pathogenic E. coli, Staph aureus, Bacillus cereus	Antibiotics not indicated			•Rehydration •Symptomatic treatment
Acute dysentery	Shigella spp, Shigatoxigenic E coli, Enteroinvasive E coli, Campylobacter spp, Yersenia spp	Tab Ciprofloxacin 500 mg BD	Inj Ceftriaxone 2g IV OD Cefixime 200 BD Azithromycin 500 OD	3-5 days	
Cholera	V. Cholerae	Cap Doxycycline 300mg	Tab Azithromycin 1 g	Single dose	Rehydration
Amebic dysentery	E. histolytica	Tab Metronidazole 500 mg TID		5 days	

Giardiasis	Giardia lamblia		Tab Metronidazole 250 mg TID		5 days	
	Campylobacter		Tab Azithromycin 1g OD		3days	
Hospital acquired diarrhoea	Clostridium difficile	Non severe (White blood cell count ≤15,000 cells/mL and serum creatinine <1.5 mg/dL)	Oral vancomycin 125/250mg Q6H	Metronidazole 500 mg orally tid	10-14days	Metronidazole is given only if Vancomycin is not available
		Severe (White blood cell count >15,000 cells/mL and/or serum creatinine ≥1.5 mg/dL)				
		Fulminant (Hypotension or shock, ileus, or megacolon)	Vancomycin 500 mg orally or via nasogastric tube QID + Metronidazole 500 mg intravenously every TID		10-14 days	If ileus is present, additional considerations include: FMT (administered rectally) OR Rectal vancomycin (administered as a retention enema 500 mg in 100 mL normal saline per rectum; retained for as long as possible and readministered every 6 hours)
Cholangitis, Acute cholecystitis	Enterobacteriaceae, Anaerobes		Piperacillin-Tazobactam 4.5 g i.v. Q8H	Cefoperazone-Sulbactam 3g i.v. BID	7 days	Biliary drainage SOS Patients undergoing cholecystectomy should have antimicrobials discontinued within 24 h unless there is evidence of infection outside the wall of the gallbladder
Spontaneous bacterial peritonitis(community acquired)	E. Coli, klebsiella		Ceftriaxone 1g bd or Cefotaxime 2g q8h	Piperacillin tazobactam 4.5g iv tid Or Cefoperazone sulbactum 3g iv bd (if risk factors for MDR	7 days	
			Piperacillin tazobactam 4.5g iv tid	Cefoperazone sulbactum 3g iv bd		
Community acquired mild intra abdominal infections (bowel perforation)	Enterobacteriaceae, Anaerobes (Bacteroides species)		Cefoperazone-Sulbactam 3 g i.v. BID	Piperacillin Tazobactam 4.5 g iv q8h	5 - 7 days; longer if source control inadequate	Emergency surgery to eliminate source of contamination, reduce bacterial load & prevent recurrence
Community-acquired severe intra-abdominal infection	Enterobacteriaceae, Anaerobes (Bacteroides species)		Meropenem 1g tid	Imipenem 500mg 6hrly or	7-14 days	
Healthcare associated intra-abdominal infections			Imipenem 500mg 6hrly / Meropenem 1g tid + vancomycin15 to 20 mg/kg/dose			Based on the findings of intra-operative cultures cover for Enterococcus may either be stopped or changed. If multi-drug resistant organism is isolated, based on susceptibility patterns, colistin,

		every 8 to 12 hours			tigecyline may be used. Add Echinocandins or fluconazole if risk factors for Candida. Get ID consultation
Intra-abdominal abscess	Enterobacteriaceae, Anaerobes (Bacteroides species)	Cefoperazone-Sulbactam 3 g i.v. BID	Piperacillin tazobactam 4.5 g IV QID	5-7 days; longer if source control inadequate	Emergency drainage
Liver Abscess (empiric)		Ceftriaxone 2g IV OD/ Cefoperazone - sulbactam 3 g i.v. BID/ piperacillin-tazobactam 4.5 gm IV q6h + metronidazole 500 mg i.v. TID			To cover for possible bacterial and amoebic etiology subsequently The treatment should be changed as per culture report and amoebic serology
Amoebic liver abscess (suspect in patients with single abscess in right lobe of liver with no IHBRD and no primary intra-abdominal source)		Metronidazole 750 mg i.v. TID or 800 mg p.o. TID + Diloxanidefuroate 500 mg TID		10 days	Therapeutic drainage for: (1) High risk of abscess rupture; (2) left lobe liver abscess; (3) Failure to respond to medical therapy within 5-7 days (4) Cannot differentiate from a pyogenic liver abscess
Acute pancreatitis		Routine use of prophylactic antibiotics NOT recommended			Infected pancreatic necrosis/abscess should be considered in patients who •Deteriorate or fail to improve after 7– 10 days of hospitalization •CT scan with gas in the pancreas • In these patients, •CT-guided FNA for Gram stain and culture to guide use of appropriate antibiotics •Empiric antibiotics may be given
Infected Pancreatic Necrosis	Enterobacteriaciae, Anaerobes, Enterococcus	Meropenem 1g TID Or Imipenem-cilastatin 500mg 6hrly +	Add Vancomycin 15 to 20 mg/kg/dose every 8 to 12 hours if no response after 48 – 72 hours or if in shock		1.Therapy to be adjusted as per the culture and sensitivity results from pancreatic aspirate or necrosectomy. 2.Antifungal cover with fluconazole, or echinocandins may be added if risk factors for disseminated candidiasis. 3.For nosocomial infections, depending on the culture and sensitivity data, colistin/ tigecycline may be used.

SURGICAL PROPHYLAXIS

- A single preoperative dose of antibiotic is sufficient; there is no evidence for postoperative prophylactic antibiotics.
- Antibiotics are repeated if the duration of operation is > 4 hours or if blood loss is > 1 liter (except vancomycin, aminoglycoside, fluoroquinolone).
- Prophylactic antibiotics should be administered within 1 hour prior to incision.
- Prophylactic antibiotics should not be used in perianal procedures (lay open fistula, hemorrhoidectomy, lateral anal sphincterotomy).
- No role for prophylactic antibiotic in routine catheterization

GENERAL SURGERY					
SURGERY	**COMMON ORGANISMS**	**PREFERRED /FIRST LINE REGIMEN**	**ALTERNATIVE REGIMEN**	**DURATION**	**REMARKS**
1a.Clean operation without use of prosthetic implant (thyroglossal cyst excision, thyroidectomy, parotidectomy, radical neck dissection, mastectomy, adrenalectomy, hepatectomy, hydatid cyst liver without biliary communication, splenectomy, porto-systemic shunt operation) 1b. Clean operation with use of prosthetic implant(inguinal hernioplasty, incisional hernia mesh repair, aortic aneurysm repair, aorto femoral bypass).	aerobic gram-positive organisms, aerobic streptococci,staphylococci, and enterococci	1a.Cefaperazone +Sulbactam IV Adults: 1.5-2 g 1b. Cefaperazone +Sulbactam IV: Adults: 1.5-2g		2 hours before incision 2 hours before incision	
2a. Clean contaminated operation (cholecystectomy laparoscopic and open, gastrojejunostomy, gastrectomy, jejunal resection anastomosis, distal pancreatectomy, pseudocystgastrostomy, pseudocyst jejunostomy, low risk perforated peptic ulcer) 2b. Clean contaminated operation (head & neck operation where oral / upper aerodigestive tract is open, including esophageal operations).		Cefaperazone +Sulbactam IV: Adults: 1.5-2 g 2b. Cefaperazone +Sulbactam IV: Adults: 1.5-2 g	alternative: clindamycin	2 hours before incision 2 hours before incision	Evidence for prophylactic antibiotic in low risk laparoscopic cholecystectomy is thin
3. Contaminated operation(colectomy, obstructed biliary tract).	aerobic gram-positive organisms, aerobic streptococci,staphylococci, and enterococci	Cefaperazone +Sulbactam IV: Adults: 1.5-2 g (cefoperazone)	Alternative: clindamycin	2 hours before incision	Surgeries on obstructed Biliary system should also add Inj. Amikacin 15mg /Kg.

4. Dirty (fecal peritonitis, anastomotic leakage)					Antibiotics are not "prophylactic" here. Choice of antibiotics will depend if organ dysfunction is present or not. Specimens for culture and sensitivity should be taken at operation. If organ dysfunction is present broad-spectrum antibiotics will be chosen initially and de-escalate once culture / sensitivity results are available.
5.Colorectal Surgery Colorectal surgery Cefaperazone +Sulbactam IV: Adults: 1-2 g	Enteric gram-negative bacilli, anaerobes, enterococci	Cefaperazone +Sulbactam IV: Adults: 1.5-2 g		2 hours before incision	
6.Hernia Surgery Hernia	Aerobic gram-positive organisms	Cefaperazone +Sulbactam IV: Adults: 1.5-2 g		2 hours before incision	
7. .Head & Neck surgery 7a.Clean Including thyroidectomy 7b.Clean- contaminated	 Anaerobes, enteric gram-negative bacilli, S. aureus	None Cefaperazone +Sulbactam IV: Adults: 1.5-2 g		 2 hours before incision	
8.Mastectomy Clean	Aerobic gram-positive organisms	Cefaperazone +Sulbactam IV: Adults: 1.5-2 g		2 hours before incision	
Use of Levofloxacin and Linezolid should be limited only if all other antibiotics are resistant. Kindly avoid empirical use of them since both belongs to MDR TB drugs category					

VASCULAR SURGERY					
PROCEDURE	**COMMON ORGANISMS**	**PREFERRED/FIRST LINE REGIMEN**	**ALTERNATIVE REGIMEN**	**DURATION**	**REMARKS**
Pre-carotid endarterectomy, femoral reconstruction AAA open repair or EVAR		**Cefazolin 1-2g IV 30min before procedure Repeated dosing** 1-2g q8h for 24 h	Cefuroxime 1.5g IV Repeated dosing 1.5g IV q12h for 24h		
Endovascular procedure : • Prior access-site prosthesis • Repuncture of a recent access site • Prosthetic/device reintervention (secondary intervention) Existing remote peripheral arterial device (e.g : prior stents, grafts)		Cefazolin 1-2g IV	Cefuroxime 1.5g IV	Single prophylactic dose	

Before reoperation involving an existing prosthetic graft/ patch		Vancomycin 1g IV 30-60 min before incision Repeated dosing 1g IVq12h , 24-48h			
Known patient MRSA colonization or prolonged or recurrent hospital stay (high MRSA risk)		Vancomycin 1g IV before incision/procedure			
Alternatives for pencillin, Cephalosporin, Vancomycin allergies		Levofloxacin 500mg IV before procedure and daily for 24-48h or Clindamycin 900mg IV before procedure and then 450-900mg q8h for 24-48h	Daptomycin 4mg/kg IV before procedure and daily for 24-48h		
Varicose vein		No preop antibiotics except when complicated by lymphedema or ulcer			
Peripheral Vascular Disease		Cefuroxime 1.5g IV, redosing interval 4hrs	Ampicillin Sulbactam 3g IV, redosing interval 2hrs		

NEUROSURGERY					
SYNDROME	**COMMON ORGANISMS**	**PREFERRED/ FIRST LINE**	**ALTERNATIVE REGIMEN**	**DURATION**	**REMARKS**
Clean cases (< 4 hrs)	Staphylococcus aureus, S.epidermidis	Amoxicillin &clavulanic acid 1.2 g IV BD		Single dose	IV prophylaxis ≤ 60 minutes prior to skin incision / intervention.
Clean contaminated cases(4- 6 hrs or when there is a breach in sterility)	Staphylococcus aureus, S.epidermidis	Amoxicillin &clavulanic acid 1.2 g IV BD		For 48 hrs	
Contaminated cases(>6 hrs)	Staphylococcus aureus, S.epidermidis,Anaerobes	Amoxicillin &Clavulanic acid IV 1.2 g + Metronidazole 500 mg IV Q8 H		For 48 hrs	
Dirty cases(eg: Suspected meningitis Penetrating head injuries)	Staphylococcus aureus, S.epidermidis, Anaerobes,Gram Negative bacilli	Ceftazidime 2gm IV TDS+Clindamycin 600mg IVTDS		For 72 hrs	Further Antibiotic Therapy Based On C/S Reports

GASTROSURGERY					
COMMON SURGERY	**COMMON ORGANISMS**	**PREFERRED /FIRST LINE REGIMEN**	**ALTERNATIVE REGIMEN**	**DURATION**	**REMARKS**
Esophago-gastroduodenal surgery Procedure involving entry into lumen of gastrointestinal tract	*Enteric gram negative bacilli *Gram-positive cocci.	Cefazolin. <120 Kg:1gIV >120 Kg: 2 g IV	Cefotaxime 2g TID	3 doses	Redose interval 4hours
Esophago-gastroduodenal surgery	*Enteric gram negative bacilli	Cefazolin. <120 Kg:1gIV >120 Kg: 2 g IV	Cefotaxime 2gTID	3 doses	Redose interval 4hours

Procedures not involving entry into lumen of gastrointestinal tract (selective vagotomy, antireflux)	*Gram-positive cocci.				
2.Biliary tract surgery (including pancreatic) Laparoscopic procedure (low risk) Open procedure or laparoscopic procedure (high risk)	2a. N/A Enteric gram-negative bacilli, Enterococci, Clostridia	No antibiotics needed Cefazolin <120 kg: 1 g IV >120 kg: 2 g IV	Piperacillin Tazobactum 4.5g QID	3 doses	High risk laparoscopic: -Age >70 years, acute cholecystitis, non-functioning gall bladder, or common bile duct stones 2b.Redoseinterval : hours
Obstructed biliary system	Enteric gram negative bacteria	Cefazolin <120 kg: 1 g IV >120 kg: 2 g IV + Amikacin15mg/kg	Piperacillin tazobactum 4.5g QID	3 doses	Redose interval :4 hours for Cefazolin
3.Small intestine surgery	3a.Non obstructed Enteric gram-negative bacilli, Gram-positive cocci 3b. Obstructed Enteric gram-negative bacilli, Anaerobes, Eenterococci	*Cefazolin <120kg:1gIV >120kg:2gIV *Cefazolin <120kg:1gIV >120kg:2gIV + Metronidazole 500 mg IV	Piperacillin tazobactum 4.5g QID	3 doses	Redose interval: 4 hours for Cefazolin
4.Colorectal Surgery	Enteric gram-negative bacilli, Anaerobes, Enterococci	*Cefazolin <120kg:1 gIV >120kg:2gIV + Metronidazole500 mg IV	Cefotaxime 2g TID	3 doses	Redose interval: 4 hours for Cefazolin
5.Hernia Surgery Hernia	Aerobic gram-positive organisms	Cefazolin <120kg:1 gIV >120kg:2gIV	Cefotaxime 2gTID	3 doses	
Whipples operation and CBD exploration		Piperacillin tazobactum 4.5g QID		3 doses	

CARDIAC SURGERY					
CARDIAC SURGERY	**COMMON ORGANISMS**	**PREFERRED /FIRST LINE REGIMEN**	**ALTERNATIVE REGIMEN**	**DURATION**	**REMARKS**
Cardiac procedures: coronary artery bypass, cardiac device insertion procedures (eg, pacemaker	Staphylococcus aureus, Staphylococcus epidermidis	Cefazolin <120 kg: 2 g IV	Cefuroxime 1.5 g IV 4 hours Or	Cefazolin single IV dose begun within 60 minutes	Cefazolin is preferred over cefuroxime, given increasing resistance to second-generation cephalosporins

implantation), placement of ventricular assist devices		≥120 kg: 3 g IV	vancomycin [8] 15 mg/kg IV (max 2 g) Or Clindamycin 900 mg IV	before the procedure Vancomycin should be started within 60 to 120 minutes before the initial incision	If vancomycin is used, the infusion should be started within 60 to 120 minutes before the initial incision to have adequate tissue levels at the time of incision and to minimize the possibility of an infusion reaction close to the time of induction of anesthesia. Clindamycin may be used for patients unable to tolerate the other agents listed.
	For procedures in which enteric gram-negative bacilli are common pathogens		Gentamicin 5 mg/kg IV Or Aztreonam 2 g IV, or a Or Ciprofloxacin 400 mg IV or Levofloxacin 500 mg IV	Fluoroquinolone should begin 120 minutes before surgical incision .	In obese patients who weigh 20 % above their ideal body weight, the gentamicin dose should be calculated using the ideal body weight plus 40 percent of the difference between the actual and ideal weights Gentamicin as a single 5 mg/kg dose has been observed to be more effective for SSI prevention

GENITOURINARY & RENAL INFECTIONS

SYNDROME	COMMON ORGANISMS	PREFERRED/ FIRST LINE REGIMEN	ALTERNATIVE REGIMEN	DURATION	REMARKS
Asymptomatic bacteriuria (positive urine culture from an individual without symptoms or signs of UTI)	E. coli	No antimicrobial needed			Screening for and treatment of asymptomatic bacteriuria is indicated for 1. Pregnant women 2. Patients undergoing urologic procedures in which mucosal bleeding is anticipated
Acute uncomplicated cystitis in women (dysuria and frequency in healthy, adult, non- pregnant women with normal urinary tract no structural or functional abnormalities)	E. coli, Klebsiella pneumonia, other enteric GNB, Staph saprophyticus, Enterococcus spp	Nitrofurantoin 100 mg p.o.BID 5-7 days	Fosfomycin 3.0 gm single dose Or Co-trimoxazole ds 1 tab BD for 3 days or Amikacin 15mg/ kg/day once daily IVor IM for 3 days (should monitor kidney function)		Fosfomycin and nitrofurantoin should be avoided when there is suspicion of pyelonephritis or prostatitis / presence of systemic features of infection. Fosfomycin susceptibility to being requested for, and used only for Gram-negative MDR organism
Acute Pyelonephritis (no underlying GU disease)	E. coli, Klebsiella pneumoniae, Pseudomonas aeruginosa, Proteus, Staphylococcus, Enterococcus spp	Piperacillin-Tazobactam 4.5 g i.v. q6h	Cefoperazone sulbactum 3g IV BD or Imipenem 1 gm 8 hourly IV or Meropenem 1 g IV TID or Amikacin 15mg/kg/day once daily IV/IM (should monitor the kidney function)	Mild to moderate cases – 7 days Severe cases – 14 days	In case of amikacin, monitor renal function In severe sepsis /septic shock carbapenems are preferred Add Vancomycin/Teicoplanin if in septic shock Definitive therapy based on culture and susceptibility report
UTI with underlying GU disease (e.g., neurogenic bladder, renal	E. coli, Proteus, Pseudomonas aeruginosa	Piperacillin Tazobactam 4.5 g i.v. q6h	Cefoperazone sulbactum 3g IV BD or Meropenem 1 g i.v. TID	14 days	Definitive therapy based on culture and susceptibility report

stones, hydronephrosis etc.)					
Acute prostatitis	Enterobacteriaceae (E.coli, Klebsiella sp.)	Ciprofloxacin 200mg iv BD 5-7 days followed by Tab ciprofloxacin 500mg bd 3weeks	Piperacillin tazobactam 4.5 g IV 6 hrs Or Trimethoprim Sulfamethoxazole (160-800mg) BD or Cefoperazonesulbactum 3gm IV BD	4 weeks	Change according to culture and sensitivity pattern Prolonged treatment upto 4-6 weeks needed for prostatitis
Epididymoorchitis	*N. gonorrhoeae* and *C. trachomatis*	Ciprofloxacin 200mg iv BD 5-7 days followed by Tab ciprofloxacin 500mg bd 3weeks	Cefoperazone sulbactum 3gm IV BD or Piperacillin tazobactam 4.5 g IV 6 hrs	4 weeks	
Catheter associated UTI	E. coli, Proteus, Pseudomonas aeruginosa, Acinetobacter spp.	Piperacillin Tazobactam 4.5 g i.v. q6h	Cefoperazone sulbactum 3g IV BD or Meropenem 1 g i.v. TID	7 – 14 days	Do not send urine culture from an asymptomatic patient with indwelling urinary catheter Urinalysis for pyuria NOT useful in diagnosing CAUTI Treat only when patient has symptoms attributable to UTI Urine sample for culture should be obtained either through a new catheter (after removing the indwelling catheter), or through sample port near junction of drainage tubing and Foley catheter Do not send samples from the drainage bag Remove urinary catheter Replace urinary catheter only if essential; consider alternatives (e.g., condom catheter, intermittent catheterization etc.)

Hemodialysis Catheter-Related Bloodstream Infections				
ORGANISMS	**PREFERRED/FIRST LINE REGIMEN**	**ALTERNATIVE REGIMEN**	**CATHETER LOCK**	**REMARKS**
Staphylococcus, Gram Negative Bacilli	Vancomycin 20 mg/kg loading dose infused over the last one to two hours of hemodialysis (HD) and ceftazidime 1	Daptomycin 9 mg/kg given over the last 30 minutes of HD IV once on A/D (thrice weekly)	Vancomycin/ceftazidime/heparin: Vancomycin (1 mL of 5 mg/mL in normal saline solution) +	Gentamicin carries a substantial risk of ototoxicity Daptomycin may be used as an alternative to vancomycin in vancomycin-allergic patients or in cases of

	gm IV once on A/D (thrice weekly) (immediately after HD on dialysis days) Continue vancomycin 1 gm over the last hour of each subsequent HD session and ceftazidime 1 gm immediately after HD while awaiting blood culture results and antibiotic	(immediately after HD on dialysis days) Gentamicin 1 mg/kg IV once on A/D (thrice weekly) (immediately after HD on dialysis days) may be used as an alternative to ceftazidime	ceftazidime (0.5 mL of 10 mg/mL in normal saline solution) + heparin (0.5 mL of 1000 units/mL solution)	vancomycin-resistant enterococci (VRE)
Gram Negative Bacilli	Ceftazidime 1 gm IV once on A/D (thrice weekly) (immediately after HD on dialysis days)		Ceftazidime/heparin: Ceftazidime (1 mL of 10 mg/mL in normal saline solution) + heparin (1 mL of 1000 units/mL solution)	
Methicillin sensitive Staphylococcus aureus	Cefazolin 2 gm IV once on A/D (immediately after HD on dialysis days)		Cefazolin/heparin: Cefazolin (1 mL of 20 mg/mL in normal saline solution) + heparin (1 mL of 1000 units/mL solution)	
Methicillin resistant Staphylococcus aureus	Vancomycin 1 gm IV once on A/D (thrice weekly) (immediately after HD on dialysis days)infused over the last hour of HD,	daptomycin 9 mg/kg over the last 30 minutes of HD	Vancomycin/heparin: Vancomycin (1 mL of 5 mg/mL in normal saline solution) + heparin (1 mL of 1000 units/mL solution)	MRSA infections that are consistent with uncomplicated CRBSI may be treated with systemic antibiotics in conjunction with an antibiotic catheter lock and do not necessarily require catheter removal or exchange. The authors recommend using clinical judgment based on the patient's clinical status and local antibiogram results to determine appropriate catheter management

SKIN AND SOFT-TISSUE INFECTIONS					
SYNDROME	**COMMON ORGANISM**	**PREFERRED/ FIRST LINE**	**ALTERNATIVE REGIMEN**	**DURATION**	**REMARKS**
Cellulitis	*S.pyogenes* *S.aureus*	Penicillin G 2-24 million units/day IV Q 4-6 H	Clindamycin 600 mg IV TID , Ceftriaxone 1 g IV BD	5-7 days	• Obtain blood/ pus cultures before starting antibiotics • Consider poly-microbial pathogens in diabetics • Consider risk factors for MRSA and presence of TSS before using clindamycin

Diabetic Foot		Ampicillin 500 mg PO Q6H / Cloxacillin 500 mg PO TID + Metronidazole 500 mg IV TID + Ciprofloxacin 500 mg PO BD	Gentamicin 60 mg IV BD + IV Metronidazole 500 mg IV TID + Linezolid 600 mg IV BD	14 Days	
Carbuncle		Clindamycin 600 mg IV TID /Cefpirome 1g IV BD	Linezolid 600 mg IV BD		
Suspected MRSA	*S.aureus*	Clindamycin 600 mg IV TID / Cefpirome 1g IV BD	Linezolid 600 mg IV BD		
Recurrent Furunculosis	*S.aureus*	Clindamycin 600 mg IV TID / Cefpirome 1g IV BD	Linezolid 600 mg IV BD		
Necrotising Fasciitis	*S. pyogenes S.aureus*, anaerobes, Gram negative organisms (polymicrobial)	Penicillin G 2-24 million units/day IV Q 4-6 H /Cefpirome 1g IV BD / Dicloxacillin 500 mg IV Q 6 H Metronidazole 500 mg IV TID	• Penicillin G 2-24 million units/day IV Q 4-6 H / Ceftriaxone 1 g IV BD + Metronidazole 500 mg IV TID • Vancomycin 1 g IV BD / Linezolid 600 mg IV BD + Piperacillin-sulbactam 4.5 g IV Q6H + Metronidazole 500 mg IV TID	14 days	Early surgical debridement essential send blood & intraoperative specimens for bacterial cultures. Consider use of IVIG for streptococcal NF/TSS

BONE AND JOINT INFECTIONS

SYNDROME	COMMON ORGANISMS	PREFERRED/FIRST LINE REGIMEN	ALTERNATIVE REGIMEN	DURATION	REMARKS
Acute osteomyelitis	Empirical therapy	Vancomycin 20mg/kg loading followed by 15 to 20mg/kg q8-12h + ceftriaxone/ceftazidime/cefazolin/cefepime		6 weeks from last debridement	For optimal treatment, microbial etiology should be confirmed modify empirical regimen based on culture report
	MSSA -	Cefazolin 2 g i.v. TID Or Cloxacillin 2gm IV q6h or Ceftriaxone 2gm IV OD			
	MRSA	- Vancomycin 20mg/kg loading followed by 15 to 20mg/kg q8-12h Or Teichoplanin 12mg/kg IV 12 th hrly for 3 doses followed by 12mg/kg OD	Linezolid 600mg IV BD		
	GNBs-	Ciprofloxacin 750mg PO BD/ 400mg IV BD(if pseudomonas 400mg q8h) Or ceftriaxone 2gm iv OD/ Ceftazidime 2gm IVq8h/ Meropenem 1gm iv q8h/Ertapenem 1gm IV od			

	Enterococci-	Ampicillin 2 gm q4h or 12gm as continuous infusion Or crystalline penicillin G 20 to 24 MIU in 6 divided doses Or Vancomycin 20mg/kg loading followed by 15 to 20mg/kg q8-12h Or Teichoplanin 12mg/kg IV 12 th hrly for 2 to 3 doses followed by 12mg/kg OD			
Chronic osteomyelitis	Staphylococci, Aerobic, GNB, Streptococci Anaerobes	Avoid empiric treatment			Secondary to a contiguous focus of infection (e.g., decubitus ulcer), Osteomyelitis that develops as a result of contaminated open fractures or surgical treatment of closed fractures For optimal treatment,microbial etiology should be confirmed Orthopedic referral for bone biopsy and debridement of necrotic material Obtain cultures(bone and blood) before antimicrobials Avoid sending swab cultures form chronic discharging sinuses and ulcers
Chronic osteomyelitis with orthopedic implants		Avoid empiric antimicrobials unless patient seriously ill			For Optimal Treatment, microbial etiology should be confirmed Orthopedic Referral Obtain Cultures(bone and blood) before antimicrobials Modify initial empiric regimen based on culture report
Septic arthritis	Empirical therapy	Vancomycin 20mg/kg loading followed by 15 to 20mg/kg q8-12h + ceftriaxone/ceftazidime/cefazolin/cefepime		4 weeks change to p.o. after 2 weeks i.v. therapy	Obtain joint fluid for culture before starting antimicrobials Modify initial empiric regimen based on culture report
	Staph aureus	Cloxacillin 2 g i.v Q6H	Cefazolin 2 g i.v. TID		

Orthopedic Surgery	Aerobic gram-positive organisms	Cefazolin <120kg:1 gIV >120kg:2 gIV Redose interval:4 hours OR Inj Cefuroxime 1.5g as initial dose followed by inj cefuroxime 750mg iv q8h OR Inj Cefoperazone 1g iv as initial dose followed by 1g iv q12h			Clean surgeries including fracture repair, arthroplasty, implantation of foreign material and joint replacement. Initial dose is given 30 minutes before the surgical incision and continued for 72 hours in the absence of clinical signs of infection Use of Levofloxacin and Linezolid should be limited only if all other antibiotics are resistant. Kindly avoid empirical use of them since both belongs to MDR TB drugs category Local application of vancomycin powder in the surgical site which are prone for infection or as a part of treatment for infection For prophylaxis – not more than 2g For treatment – not more than 4g

Standard Treatment Guidelines For Drug Sensitive-TB as Per NTEP

- This regimen is for H & R sensitive TB cases and cases where the sensitivity pattern cannot be established
- Treatment is given in two phases:
  1. **Intensive phase** consists of 8 weeks (56 doses) of isoniazid (H), rifampicin (R), pyrazinamide (Z) and ethambutol (E) given under direct observation in daily dosages as per weight band categories
  2. **Continuation phase** consists of 16 weeks (112 doses) of isoniazid, rifampicin and ethambutol in daily dosages. Only pyrazinamide will be stopped in the continuation phase. The CP needs to be extended upto 24 weeks in certain forms of TB like CNS TB, Skeletal TB. In disseminated TB or slow response treating physician may extend on case to case basis.

SYNDROME	PREFERRED / FIRST LINE THERAPY	DURATION	REMARKS
Adult TB Meningitis	• Intensive Phase: 2 months of RHZE or RHZS • Continuation phase: 3 drugs-RHE	at least 10 months* treatment duration may be increased in some cases as per the clinician decision	› Preferably Dexamethasone 0.4 mg/kg/day intravenously in 3-4 divided doses during hospital stay › If not feasible, give oral Dexamethasone 0.4 mg/kg/day in divided doses or oral Prednisolone 1 mg/kg/day in a single morning dose › Discharge on oral steroids on tapering doses for total duration of 8-12 weeks › Regular follow up is essential every month for at least first 3 months & can be increased thereafter till treatment is stopped. › Monitor liver function tests
Adult Abdominal TB	• Intensive Phase: 2 months of RHZE or RHZS • Continuation phase: 3 drugs-RHE	for at least 10 months* Extend duration of treatment in cases of inadequate response	• Refer for surgical management for complications [intestinal obstruction (due to strictures), perforation] • Consider endoscopic dilatation for treatment for accessible strictures • Refer for biliary drainage in case of Jaundice due to biliary obstruction (hepatobiliary obstruction/pancreatic TB)
intra-ocular TB	ATT: 2 months of RHEZ + 7 months of RH depending on clinical response & side effects to treatment		• Add pyridoxine 10 mg/day • Corticosteroids: Topical steroids eye drops for severe anterior chamber inflammation • For treatment in children refer to paediatrician • Systemic corticosteroids for severe inflammation in consultation with Uveitis expert

Drug dosages for first-line anti- TB drugs

Drugs	Doses
Isoniazid (H)	5 mg/kg daily (4 to 6 mg/kg)
Rifampicin (R)	10 mg/kg daily (8 to 12 mg/kg)
Pyrazinamide (Z)	25 mg/kg daily (20 to 30 mg/kg)
Ethambutol (E)	15 mg/kg daily (12 to 18 mg/kg)
Streptomycin (S)*	15 mg/kg daily (15 to 20 mg/kg)

*Streptomycin is administered only in certain situations, like TB meningitis or if any first line drug need to be replaced due to ADR as per weight of the patient

Pyridoxine may be given at a dosage of 10 mg per day

Weight category	Number of tablets (FDCs)	
	Intensive Phase H: 75mg; R: 150 mg; Z: 400 mg; E: 275 mg)	Continuation Phase H: 75mg; R: 150 mg; E: 275 mg)
25 to 34 kg	2	2
35 to 49 kg	3	3
50 to 64 kg	4	4
65 to 75 kg	5	5
> 75 kg	6	6

- Fixed Dose Combinations (FDCs) refer to products containing two or more active ingredients in fixed doses, used for a particular indication(s)
- In NTEP, for Adults: 4-FDC (given in IP) consists of HRZE and 3-FDC (given in CP) consists of HRE
- During treatment if weight of the patient increases by > 5 kg and crosses the next weight band then patient should be given the next higher weight band FDC drugs

ABBREVATIONS:

- ADR: Adverse drug reaction
- ATT: Anti-Tubercular treatment
- CNS: Central Nervous system
- CP: Continuation phase
- DR-TB: Drug resistant Tuberculosis
- DS-TB: Drug sensitive Tuberculosis
- E: Ethambutol
- FDC: Fixed dose combination
- H: Isoniazid
- IP: Intensive phase
- MRI: Magnetic Resonance imaging TB: Tuberculosis
- NTEP: National TB Elimination Programme
- R: Rifampicin
- S: Streptomycin
- SAM: Severe acute malnutrition
- Z: Pyrazinamide

VIRAL INFECTIONS					
SYNDROME	**COMMON ORGANISMS**	**PREFERRED REGIMEN/ FIRST LINE TREATMENT**	**ALTERNATIV E REGIMEN**	**DURATION**	**REMARKS**
Seasonal Influenza	Human influenza A and B viruses	Oseltamivir 75 mg BD PO		5 days	• Antiviral treatment indicated for Category B & C
Varizella	Varicella-zoster virus (VZV)	Acyclovir- 800mg 5 times a day PO Or if complicated Acyclovir IV 10mg/kg/dose 8 hourly	Valacyclovir 1g TDS PO	5-7 days	• IV therapy indicated in Systemic complications, Hemorrhagic varicella, Immunosuppressed patient • Infants, children >12 years of age, adults, pregnant women and immunosuppressed patients should be treated with specific anti-viral medication because of risk of severe varicella • Maximum benefit if acyclovir initiated 24 hours of onset of rash
Herpes Zoster	Varicella-zoster virus (VZV)	Acyclovir 800mg 5 times a day PO or Valacyclovir 1g 3 times a day PO		7 days	• Start <72 hours of onset for maximum benefit, can consider if new lesions are still appearing after 72 hours/ Herpes Zoster ophthalmicus/Ramsay Hunt syndrome • Intravenous Acyclovir if multi-segmental involvement or disseminated zoster or systemic complications

PARASITIC INFECTIONS

SYNDROME	COMMON ORGANISM	PREFERRED REGIMEN/FIRST LINE TREATMENT	ALTERNATIVE REGIMEN	DURATION	REMARKS
AMEBIASIS	Entamoeba histolytica	a)Amebic liver abscess metronidazole (500 to 750 mg orally three times daily or tinidazole (2 g once daily for 5 days) b) Intraluminal infection i)paromomycin (25 to 30 mg/kg per day orally in three divided doses ii)diiodohydroxyquin (650 mg orally three times daily for 20 days or diloxanide furoate (500 mg orally three times daily for 10 days for adults	Chloroquine (600 mg base daily for two days, followed by 300 mg base daily for three weeks) is an acceptable alternative agent to metronidazole for treatment of amebic liver abscess in pregnant women	a)7 to 10 days b-i)7days ii) 20 days	
ASCARIASIS	A. lumbricoides	albendazole -400 mg orally once on empty stomach) or mebendazole - adults: 500 mg orally once			Ivermectin should not be administered to pregnant or lactating individuals
ELEPHANTIASIS/FILARIASIS	Wuchereria bancrofti, Brugia malayi, and Brugia timori.	Diethylcarbamazine 6 mg/kg for 12 days	Ivermectin (200 mcg/kg) + Albendazole (400 mg) Ivermectin(200 mcg/kg) + DEC(Diethylcarbamazine)6 mg/kg) Albendazole (200 mg twice daily for 21 days) Doxycycline (200 mg daily for six weeks)	12 days Alternative regimen: 21days. In case of doxy its 6 weeks	
ONCHOCERCIASIS	Onchocerca volvulus	Ivermectin(IVM) 150 mcg/kg	Ivermectin (150 mcg/kg) + Doxycycline	IVM-6 to 12 months Alternative regimen:6weeks	DEC can cause severe post-treatment reactions and exacerbate ocular disease
TRICHURIASIS/WHIPWORM	Trichuris trichiura	combination of Albendazole 400mg and Ivermectin 200mg ; single-dose can be used		Retreatment at 6- or 12-month intervals is appropriate	
TAPEWORM INFECTION	Taenia species	Praziquantel * taeniasis and diphyllobothriasis is 10 mg/kg orally (single dose in empty stomach. *T.saginata infections 2.5 mg/kg *Hymenolepiasis is 25 mg/kg orally (single dose), followed by repeat	Albendazole is as an alternate agent (400 mg orally once daily for three days). Niclosamide 500 mg tablets that need to be chewed. Dosing consists of four tablets (500 mg) in a single dose (2 g)	Single dose	Administration of praziquantel can precipitate symptoms of occult neurocysticercosis; for this reason, it should be avoided in patients with prior neurologic symptoms
HOOKWORM	Intestinal parasites	Albendazole 400 mg orally once on empty stomach	Mebendazole 500 mg orally once	Once dosing	
TOXOPLASMA	Toxoplasma gondii	Pyrimethamine (50 to 75 mg daily) plus sulfadiazine (2 to 4 grams daily in four divided doses) plus leucovorin calcium (10 to 25 mg daily) Pyrimethamine (50 to 75 mg daily) plus clindamycin (300 mg four times daily) plus leucovorin calcium (10 to 25 mg daily)	trimethoprim-sulfamethoxazole; an alternative agent for the treatment of toxoplasmosis) or placebo for one month. Other alternative regimens include a two- to four-week course of: Pyrimethamine (50 to 75 mg daily) plus atovaquone (750 mg four times daily) plus leucovorin calcium (10 to 25 mg daily) or Pyrimethamine (50 to 75 mg daily) plus azithromycin (500 mg daily) plus leucovorin calcium (10 to 25 mg daily)	two to four weeks	In patients with a sulfonamide allergy, atovaquone alone (750 mg four times daily) should be initiated

MALARIA					
Uncomplicated malaria:	1.Plasmodium falciparum or unknown species	Chloroquine resistant or unknown resistance 1.A. Artemether-lumefantrine (1 tab: 20 mg artemether and 120 mg lumefantrine) -4 tabs oral per dose 1.B. Atovaquone-proguanil (250 mg atovaquone and 100 mg Proguanil) 4 tabs po QD	1.C.Quinine sulfate plus doxycycline tetracycline or clindamycin Quinine sulfate: 542 mg base (650mg salt) po TID x 3 or 7 days Doxycycline: 100 mg po BID x 7 days Tetracycline: 250 mg po QID x 7 days Clindamycin: 20 mg/kg/day po divided TID x 7 days 1.D.Mefloquine Dose1:684mg base(750 mg salt) PO Dose 2 at 6 to 12 h: 456 mg base (500 mg salt) PO	1.A. Three-day course: Day 1: Initial dose and second dose 8 hours later Days 2 and 3: 1 dose BID 1.B. 3 days	
Uncomplicated malaria:	Plasmodium falciparum or unknown species	Chloroquine sensitive Chloroquine phosphate Dose 1: 600 mg base (1000 mg salt) po Doses 2 to 4 (3 additional doses) at 6, 24 and 48 h: 300 mg base (500 mg salt) po per dose	Hydroxychloroquine Dose 1: 620 mg base (800 mg salt) po Doses 2 to 4 (3 additional doses) at 6, 24 and 48 h: 310 mg base (400 mg salt) po per dose.		
Uncomplicated malaria:	2.Plasmodium Vivax or P.ovale	Chloroquine sensitive Acute treatment: Chloroquine phosphate Dose 1: 600 mg base (1000 mg salt) po Doses 2 to 4 (3 additional doses) at 6, 24 and 48 h: 300 mg base (500 mg salt) po per dose Antirelapse treatment: Primaquine phosphate 30mg base po qd x 14days or Tafenoquine 300mg po x 1 dose	Hydroxychloroquine Dose 1: 620 mg base (800 mg salt) po Doses 2 to 4 (3 additional doses) at 6, 24 and 48 h: 310 mg base (400 mg salt) po per dose		
Uncomplicated malaria:	P. vivax or P. ovale	Chloroquine resistant Acute treatment: A. Artemether-lumefantrine (1 tab: 20 mg artemether and 120 mg lumefantrine) Adults: 4 tabs po per dose B. Atovaquone-proguanil (1 tab: 250 mg atovaquone and 100 mg proguanil) 4 tabs po QD x 3 days C. Quinine sulfate plus doxycycline, tetracycline, or clindamycin Quinine sulfate: 542 mg base (650 mg salt) po TID x 3 days Doxycycline: 100 mg po BID x 7 days Tetracycline: 250 mg po QID x 7 days Clindamycin: 20 mg/kg/day po divided TID x 7 days D.Mefloquine		A.Three-day course: Day 1: Initial dose and second dose 8 h later Days 2 and 3: 1 dose BID B.3days	

		Dose 1: 684 mg base (750 mg salt) po Dose 2 at 6 to 12 h: 456 mg base (500 mg salt) po			
Uncomplicated malaria	P.malariae or P.knowlesi	Chloroquine sensitive A. Chloroquine phosphate Dose 1: 600 mg base (1,000 mg salt) po Doses 2 to 4 (3 additional doses) at 6, 24 and 48 h: 300 mg base (500 mg salt) po per dose B. Artemether-lumefantrine (1 tab: 20 mg artemether and 120 mg lumefantrine) 4 tabs po per dose C. Atovaquone-proguanil (tab: 250 mg atovaquone and 100 mg proguanil) 4 adult tabs po QD x 3 days	Antirelapse treatment: Primaquine phosphate17,18,19 30 mg base po qd x 14 days Hydroxychloroquine Dose 1: 620 mg base (800 mg salt) po Doses 2 to 4 (3 additional doses) at 6, 24 and 48 h: 310 mg base (400 mg salt) po per dose D. Quinine sulfate plus doxycycline , tetracycline , or Clindamycin Quinine sulfate: 542 mg base (650 mg salt) po TID x 3 days Doxycycline: 100 mg po BID x 7 days Tetracycline: 250 mg po QID x 7 days Clindamycin: 20 mg/kg/day po divided TID x 7 days E. Mefloquine Dose 1: 684 mg base (750 mg salt) po Dose 2 at 6 to 12 h: 456 mg base (500 mg salt) po	B.Three-day course: Day 1: Initial dose and second dose 8 h later Days 2 and 3: 1 dose BID C.3days	
3.Uncomplicated malaria (pregnant women)	P. falciparum	Chloroquine resistant. All trimesters: Artemether-lumefantrine (1 tab: 20 mg artemether and 120 mg lumefantrine) Adults: 4 tabs po per dose Three-day course: Day 1: Initial dose and second dose 8 h later Days 2 and 3: 1 dose BID	If no other options, all trimesters: Mefloquine Dose 1: 684 mg base (750 mg salt) po Dose 2 at 6 to 12 h: 456 mg base (500 mg salt) po AND if P. vivax or P.ovale: Chloroquine 500 mg salt (300 mg base) weekly until delivery, then consider antirelapse treatment		
	P.vivax or P.ovale	All trimesters: Quinine sulfate plus clindamycin Quinine sulfate: 542 mg base (650 mg salt) po TID x 3 or 7 days Clindamycin: 20 mg/kg/day po divided TID x 7 days			
4.Uncomplicated malaria (pregnant women)	P.falciparum P.vivax or P.ovale P.malariae or P.knowlesi	Chloroquine sensitive A.Chloroquine phosphate Dose 1: 600 mg base (1,000 mg salt) po Doses 2 to 4 (3 additional doses) at 6, 24 and 48 h: 300 mg base (500 mg salt) po per dose; or Options above for chloroquine-resistant malaria parasites AND if P. vivax or P.ovale: Chloroquine 500 mg salt (300 mg base)	Hydroxychloroquine Dose 1: 620 mg base (800 mg salt) po Doses 2 to 4 (3 additional doses) at 6, 24 and 48 h: 310 mg base (400 mg salt) po per dose		

		weekly until delivery, then consider antirelapse treatment	Interim treatment Artemether-lumefantrine or Atovaquone-proguanil or Quinine sulfate; or Mefloquine		Antirelapse treatment with either primaquine ortafenoquine contraindicated during pregnancy

5.Severe malaria
(All species,drug susceptibility not relevant for acute treatment of severe malaria)

IV artesunate:
1 dose=2.4 mg/kg IV doses(3 in total) at 0, 12 and 24 hours

*If IV artesunate not readily available, give oral antimalarials while obtaining IV artesunate.
When IV artesunate arrives, discontinue oral antimalarial and initiate IV treatment

* If oral therapy not tolerated, consider administration via nasogastric (NG) tube or after an antiemetic.

*Reassess parasite density at least 4 hours afterthe third dose: Parasite density ≤1% and patient able to tolerate oral medications: Give a complete follow-on oral regimen.: • Artemether-lumefantrine • Atovaquone-proguanil, or • Quinine plus doxycycline or, in children 1%: Continue IV artesunate, same dose, QD up to 6 more days (for a total of 7 days of IV artesunate) until parasite density ≤1%. When parasite density ≤1%, give complete follow-on oral regimen .Parasite density ≤1% but patient unable to take oral medication: Continue IV artesunate, same dose, QD up to 6 more days (for a total of 7 days of IV artesunate) until patient able to take oral therapy

THANK YOU

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