Supplementary Table 1 Antimicrobial resistance pattern of *E. coli* during 1st October 2012- 30th September 2014 for all the indications studied

Antibiotics	1st Oct 2012-30th Sep 2013	1st Oct 2013-30th Sep 2014	p value
	No. isolates resistant/ No. isolates tested (% resistance)		
Amikacin	2/36 (5)	10/41 (24)	0.029
Amoxicillin-clavulanic acid	31/35 (88)	34/41 (83)	0.532
Ampicillin- sulbactam	23/31 (74)	32/40 (80)	0.561
Cefixime	28/34 (82)	34/40 (85)	0.758
Cefoperazone	29/29 (100)	32/32 (100)	-
Cefoperazone- sulbactam	4/30 (13)	14/34 (41)	0.024
Cefotaxime	8/8 (100)	6/6 (100)	-
Ceftriaxone	31/36 (86)	31/40 (77)	0.335
Ciprofloxacin	28/37 (76)	32/39 (82)	0.495
Colistin	0/2 (0)	1/15 (7)	-
Cotrimoxazole	14/33 (42)	20/30 (67)	0.053
Gentamicin	18/37 (49)	25/41 (61)	0.274
Levofloxacin	17/31 (55)	31/39 (79)	0.027
Meropenem	0/7 (0)	5/23 (22)	0.304
Nitrofurantoin	0/17 (0)	8/19 (42)	0.003
Norfloxacin	13/17 (76)	12/17 (70)	1
Ofloxacin	11/15 (73)	14/18 (78)	1
Piperacillin- tazobactam	5/29 (17)	16/34 (47)	0.025
Ticarcillin-clavulanic acid	15/28 (53)	21/29 (72)	0.14

Supplementary Table 2 Antimicrobial resistance pattern of *K. pneumoniae* during 1st October 2012-30th September 2014)

Antibiotics	1st Oct 2012-30th Sep 2013	1st Oct 2013-30th Sep 2014	p value
	No. isolates resistant/ No. isolates tested (% resistance)		
Amikacin	4/14 (28)	19/37 (51)	0.210
Amoxicillin-clavulanic acid	11/14 (78)	34/35 (97)	0.065
Ampicillin sulbactam	11/14 (78)	34/35 (97)	0.065
Cefixime	9/13 (69)	32/37 (86)	0.213
Cefoperazone	9/9 (100)	30/31 (97)	1
Cefoperazone- sulbactam	4/11 (36)	28/34 (82)	0.006
Cefotaxime	2/2 (100)	5/5 (100)	-
Ceftriaxone	10/14 (71)	33/37 (89)	0.192
Ciprofloxacin	8/13 (61)	32/36 (89)	0.043

Colistin	0	0	-
Cotrimoxazole	6/12 (50)	19/21 (90)	0.015
Gentamicin	8/14 (57)	23/36 (64)	0.750
Levofloxacin	5/10 (50)	25/37 (67)	0.460
Meropenem	3/6 (50)	20/30 (67)	0.645
Nitrofurantoin	3/7 (42)	23/30 (77)	0.163
Norfloxacin	7/8 (87)	16/16 (100)	0.333
Ofloxacin	7/8 (87)	13/13 (100)	0.381
Piperacillin- tazobactam	4/11 (36)	27/34 (79)	0.020
Ticarcillin-clavulanic acid	8/10 (80)	24/28 (86)	0.644

PROPOSED ANTIBIOTIC POLICY FOR GASTROENTEROLOGY DEPARTMENT, AIMS, BASED ON CULTURE AND SENSITIVITY PATTERN OF BACTERIAL ISOLATES OBTAINED IN VARIOUS INFECTIONS

Sl. No.	Clinical condition/ Diagnosis	Common causative agents	Treatment with dose and duration	Comments
1	**Spontaneous bacterial peritonitis (SBP)** (Ascitic fluid PMN count $\geq$ 250 cells/mm^3 without an evident intra-abdominal or surgically treatable source of infection)	*Escherichia coli, Klebsiella pneumoniae*	Inj. cefoperazone-sulbactam* 2gm BD for 5 days. **Alternative regimens**: Inj. Piperacillin tazobactam* 4.5gm TID or Inj. Amikacin* 5-7.5mg/kg/day TID	• *E. coli* was the causative bacteria in SBP for 39.2% of cases and *K. Pneumoniae* in 13.7% of cases. • 65% of *E. coli* isolates and 60% of *klebsiella* isolates were found to be susceptible to Cefoperazone- sulbactam. • Though the susceptibility of *E. coli* and *K. pneumoniae* to amikacin was 74 and 87% respectively, it was suggested as alternative regimen because of its renal toxicity and the need to adjust the dose as per the degree of renal impairment. • *E. coli* and *K. pneumoniae* showed >50% resistance towards cephalosporins [cefixime, ceftriaxone, cefoperazone and cefotaxime] except cefoperazone-sulbactam.
2	**Cholangitis**	*Escherichia coli, Klebsiella pneumoniae*	Inj. cefoperazone- sulbactam* 2gm BD **Alternative regimens**: If no improvement in 48 hrs changed to Inj. Meropenem* 1gm q8h	• 47.6% of infections in cholangitis caused by *E. coli* and 27.6% caused by *K. pneumoniae* • Cefoperazone -sulbactam has sufficient anti anaerobic activity also. • Though aminoglycosides have high sensitivity, their biliary penetration is poor [<10%]. • 61% of *E. coli* isolates and 28% of *K. pneumoniae* isolates were susceptible to cefoperazone - sulbactam. • Though the susceptibility of meropenem to *E. coli* was 82% and *K. Pneumoniae* 45, it is suggested as a second line agent because its use is restricted to prevent emergence of resistance.

3	**Cholecystitis**	*Escherichia coli*	Inj. Piperacillin-tazobactam* 4.5gm q8h Or Inj cefoperazone- sulbactam* 2gm BD	• The duration should be tailored as per clinical improvement. • 66.6 % of infection in cholecystitis caused by *E coli.* • *E. Coli* shows 100% sensitivity to inj. Piperacillin-tazobactam and inj. Cefoperazone-sulbactam. • Gall bladder and bile cultures should be sent in all cases of acute cholecystitis except Grade I.
4	**Pancreatitis**	*K. pneumoniae* *E coli*	Inj. Ciprofloxacin* 400mg q12h **Alternative regimen** Inj. Meropenem* 1gm q8h	• 25% of infections in pancreatitis was caused by *K. pneumoniae* and 16.6% caused by *E .coli.* • *Klebsiella* was 100% sensitive to meropenem and Ciprofloxacin while *E. Coli.*67% sensitive to meropenem • Carbapenems, fluroquinolones and metronidazole have high penetrating power into pancreatic necrotic tissue. • Prophylactic antibiotic therapy not recommended.
5	**Gastroenteritis**	*Salmonella typhimurium*	Inj. Ciprofloxacin* 500mg BD **Alternative regimen** Inj. Ofloxacin* 500mg BD for 5-7 days	• All the isolates of gastroenteritis were *Salmonella typhimurium.* • In healthy host with mild to moderate symptoms, no antimicrobial therapy needed as it encourages the proliferation and leads to the excretion of bacteria into the stool.
6	**Urinary tract infection associated with GI disorders**	*Escherichia coli* *Klebsiella pneumoniae*	Inj. Cefoperazone- sulbactam* 2gm BD **Alternative regimen** Tablet Nitrofurantoin 100mg BD for 7days (Not effective in patients with Crcl<40ml/min.)	• *E. coli* was the causative bacteria in 56.3% of UTI cases and 43.7% of cases caused by *K. pneumoniae.* • 89% of E. coli and 33% of *K.pneumoniae* were susceptible to nitrofurantoin • Fluroquinolones [ciprofloxacin, Ofloxacin and Gentamicin] shows <50% of susceptibility. • For complicated and recurrent UTI, inj. amikacin 250mg BD may be appropriate because it is more effective than cefoperazone-sulbactam.

*The antibiotics need dosage adjustment in renal impairment