

Supplementary Materials

Study the association between virulence genes and antibiotic resistance in hypervirulent *Klebsiella pneumoniae* isolates

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Table S1. List of primers utilized in the investigation and their cycling conditions.

Genes	Primer sequence 5'→3'	Primer Conc. pMol/ reaction	Amplicon Size (bp)	Reference	Annealing Temp.	Cycles
<i>K1</i>	F- GTA GGT ATT GCA AGC CAT GC	10	1046 bp	(Lin <i>et al.</i> ,2015)	50°C for 1 min	35
	R- GCC CAG GTT AAT GAA TCC GT					
<i>K2</i>	F- CAACCATGGTGGTCGATTAG	20	531 bp	(Compain <i>et al.</i> ,2014)	50°C for 1.5 min	35
	R- TGGTAGCCATATCCCTTTGG					
<i>iutA</i>	F- GGGAAAGGCTTCTCTGCCAT	20	920 bp	(Compain <i>et al.</i> ,2014)	55°C for 1.5 min	30
	R- TTATTCGCCACACGCTCTT					
<i>P-rmpA</i>	F- TAC TTT ATA TGT AAC AAG GAT	20	441 bp	(Fang <i>et al.</i> , 2007)	56°C for 1 min	35
	GTA AAC ATA G					
	R- CAG TAG GCA TTG CAG CAC					
	TGC					
<i>C-rmpA</i>	F- TGG CAG CAG GCA ATA TTG TC	20	1006 bp	(Lin <i>et al.</i> ,2015)	53°C for 1 min	35
	R- GAA AGA GTG CTT TCA CCC CCT					
<i>MagA</i>	F- GGTGCTCTTTACATCATTGC	20	1283 bp	(Compain <i>et al.</i> ,2014)	55°C for 1.5 min	35
	R- GCAATGGCCATTGCGTTAG					

Table S2 Frequency of *K. pneumoniae* isolates by clinical specimen type.

Type of specimens (clinical)	No. of isolates	Percentage from 132 between the groups	NO. of CKp	Per.%	NO. of HvKp	Per.%
Urine	61	46.2%	59	96.7%	2	3.3%
Respiratory secretions	28	21.2%	27	96.4%	1	3.6%
Blood	19	14.4%	19	100%	0	0
Wound swab	11	8.3%	11	100%	0	0
Burn infection swab	4	3.0%	2	50%	2	50%
Stool	3	2.3%	3	100%	0	0
Abscess	1	0.8%	1	100%	0	0
Umbilical swab	1	0.8%	1	100%	0	0
Lavage	1	0.8%	1	100%	0	0
Tissue biopsy	1	0.8%	1	100%	0	0
H.V.S	1	0.8%	1	100%	0	0
Foly tip swab	1	0.8%	1	100%	0	0
Total	132	100%	127	96.2%	5	3.8%

Table S3 Antibiotic resistance profile of *K. pneumoniae* in this study.

Sources	NO. 132	TI	TIM	PI	PTZ	CAZ	FEP	ATM	IMI	MEM	AMK	GEN	TOB	MIN	CIP	SXT
Urine	61	58	49	58	27	40	28	40	21	17	17	7	15	12	16	39
Respiratory secretions	28	27	24	26	19	22	17	18	17	11	18	18	15	16	18	20
Blood	19	19	15	16	11	11	9	12	8	8	9	10	10	6	7	14
Wound swab	11	11	11	11	9	9	9	9	8	6	8	7	7	5	10	7
Burn swab	4	4	4	4	4	4	4	4	3	3	2	4	4	3	3	4
Stool	3	3	1	2	0	0	0	0	0	0	0	0	0	0	0	0
Others	6	6	6	5	3	4	3	3	3	3	2	1	3	1	2	2
Total of resist isolates	128	110	122	73	90	70	86	60	48	56	47	54	43	56	86	128
% resist isolates	97%	83%	92%	55%	68%	53%	65%	46%	36%	42%	36%	41%	33%	42%	65%	97%
Total of sensitive isolates	4	22	10	59	42	62	46	72	84	76	85	78	89	76	46	4
%	3%	17%	8%	45%	32%	47%	35%	54%	64%	58%	64%	59%	67%	58%	35%	3%
P value	0.001	0.001	0.001	0.002	0.002	0.06	0.001	0.07	0.001	0.003	0.003	0.002	0.001	0.002	0.001	0.001

TI = Ticarcillin, TIM = Ticarcillin /Cavulanic acid, PI = piperacillin, PTZ = Piperacillin/Tazobactam, CAZ =ceftazidime, FEP = cefepime, ATM = Aztreonam, CIP Ciprofloxacin, SXT=Trimethoprim/Sulphamethoxazole. IMI=Imipenem, MEM = Meropenem, AMK =Amikacin, GEN= Gentamycin, TOB = Tobramycin, MIN= minocycline
Not : Others included abscess, Umbilical swab, lavage, tissue biopsy, H.V.S, Foley tip swab)

Table S4 Association of virulence genes, antibiotic susceptibility patterns, specimen's type, and clinical presentations in *K. pneumoniae* isolates.

<i>K. p</i> Isolates ID	Virulence gene profile						Sources type	Patient's Age	Antibiotics susceptible pattern	Clinical presentation/isolate collected from Ward or clinic
	<i>K1</i>	<i>K2</i>	<i>iutA</i>	<i>prmp</i>	<i>Crmp</i>	<i>magA</i>				
NA1	-	+	-	-	-	-	urine	3 months	MDR	UTI / outpatient
NA2	+	-	+	-	-	-	urine	3 months	Non-susceptible isolate	UTI / outpatient
NA3	-	+	-	-	-	-	urine	1 month	NMDR	UTI / outpatient
NA6	-	+	+	-	-	-	urine	10 years	XDR	UTI / outpatient
NA24	-	+	-	-	-	-	Wound swab	3.5 months	XDR	Wound infection post colostomy/ inpatient
NA38	+	-	-	-	-	-	urine	16 years	XDR	UTI / outpatient
NA45	-	+	-	-	-	-	Blood	29 years	PDR	Chest infection suspected / ICU
NA51	-	+	-	-	-	-	wound swab	42 years	XDR	Wound infection/ inpatient
NA59	-	+	-	-	-	-	Sputum	73 years	PDR	Inpatient
NA92	-	+	-	-	-	-	ETT swab	35 year	XDR	sign of Lt. lung collapse/ICU
NA96	-	-	+	-	-	-	ETT swab	32years	XDR	Chest infection / ICU
NA105	-	+	-	+	-	-	Burn infection swab	25 years	MDR	Burns Specialist Hospital/ inpatient
NA106	-	-	+	-	-	-	Burn infection swab	33years	XDR	Burns Specialist Hospital/ inpatient
NA110	+	-	-	-	-	-	Blood	8 Days	Non-susceptible isolate	Inpatient
NA130	-	+	-	-	-	-	Urine	11 years	Non-susceptible isolate	UTI / outpatient
NA138	-	+	-	-	-	-	Stool	40 years	Non-susceptible isolate	Diarrheae / outpatient

K. p: *Klebsiella pneumoniae* , I D(NA) : Identification Number Code for *K. pneumoniae* isolate