Good Evening Pharmacists!

Case No. 3

Andreas von Ameln-Mayerhofer Sindelfingen-Boeblingen General Hospital Pharmacy Dept & Antimicrobial Stewardship Team Germany

Day 1 (Admission)

65 year old woman (170cm, 71kg)

- with known oncology history (vulvectomy + radiotherapy 9 months ago)
- now subfebrile temperatures, wound pain, swollen (right) leg
- RR 113/61; heart rate 62/min; Temp. 37.3°C; SpO2 96%; respir. freq 13/min
- blood-analysis:

WBC	12.7 G/L	[4.4-12.5]
CRP	28 mg/dl	[0.0-0.6]
Na+	123 mmol/L	[133-145]
K+	4.4 mmol/L	[3.6-5.2]
eGFR	>90	(ckd-epi)
GPT/ALT	24 U/L	[0-35]

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- further examination: deep vein thrombosis in the right leg + relapse of primary tumor

=> Start of anticoagulation therapy

Medication

Enoxaparin 80mg s.c. 1-0-1

Pregabalin 25mg p.o. 1-0-2

Metamizole 1000mg p.o. 1-1-1-1

Fentanyl 37µg/h patch every 3rd day

Movicol 1-1-0

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- plus infection (putative SSTI / wound infection)?
 - => Start of (empiric) antibiotic therapy

Ampicillin-Sulbactam 2/1g i.v. 1-1-1

- deep vein thrombosis being treated
- but still CRP & WBC high, temperature > 35°C

WBC	12.4 G/L	[4.4-12.5]
CRP	26 mg/dl	[0.0-0.6]
Na+	133 mmol/L	[133-145]
K+	3.8 mmol/L	[3.6-5.2]
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Microbiology (wound swabs) material sent to mibi dept.

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on ward round there was some peculiar *scent of.... Lime Tree!*plus *green-coloured* wound dressing...

QUESTION 1:

- deep vein the What does this typical scent mean?
- but still CRP a) occurence of *Staphylococci*
 - WBC b) occurence of *Candida*
 - CRP c) occurence of *Pseudomonas*
 - Na+
 - K+
 - eGFF
- d) occurence of anaerobic bacteria
- e) occurence of *clostridium difficile*

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 - CRP (c) occurrence of **Pseudomonas** !!!
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Na+

K+

QUESTION 2:

- deep vein the Now if it is Pseudomonas infection => what to do now?

- but still CRP a) Ampicillin-Sulbactam is OK => continue with therapy
 - WBC b) change therapy to Linezolid i.v.
 - c) change therapy to Tigecyclin i.v.
 - d) change therapy to Piperacillin-Tazobactam i.v.
 - eGFF e) change therapy to Meropenem i.v.
 - f) change therapy to Ceftolozan-Tazobactam i.v.

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WBC

CRP

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Na+

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eGFF

e) change therapy to Piperacillin-Tazobactam i.v.

f) change therapy to Ceftolozan-Tazobactam i.v.

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Decision is dependent on local resistance status!

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=> PSEUDOMONAS AERUGINOSA!

- deep vein thrombosis being treated
- but still CRP & WBC high, temperature > 35°C => suspected infection site!
- suspected Pseudomonas infection

=> Switch of antibiotic therapy to **Meropenem**

- deep vein thrombosis being treated
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- suspected Pseudomonas infection

=> Switch of antibiotic therapy to Meropenem 3 x 2g i.v. t.i.d. (= 6g/d)

THERAPEUTIC DRUG MONITORING ("TDM") of meropenem

- Day 2 of meropenem-therapy

Two blood probes measured by means of HPLC-DAD (gradient Tris pH 8 / MeOH, λ = 300nm)

=> 34 and 13.9 mg/L

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..... What does this mean now?



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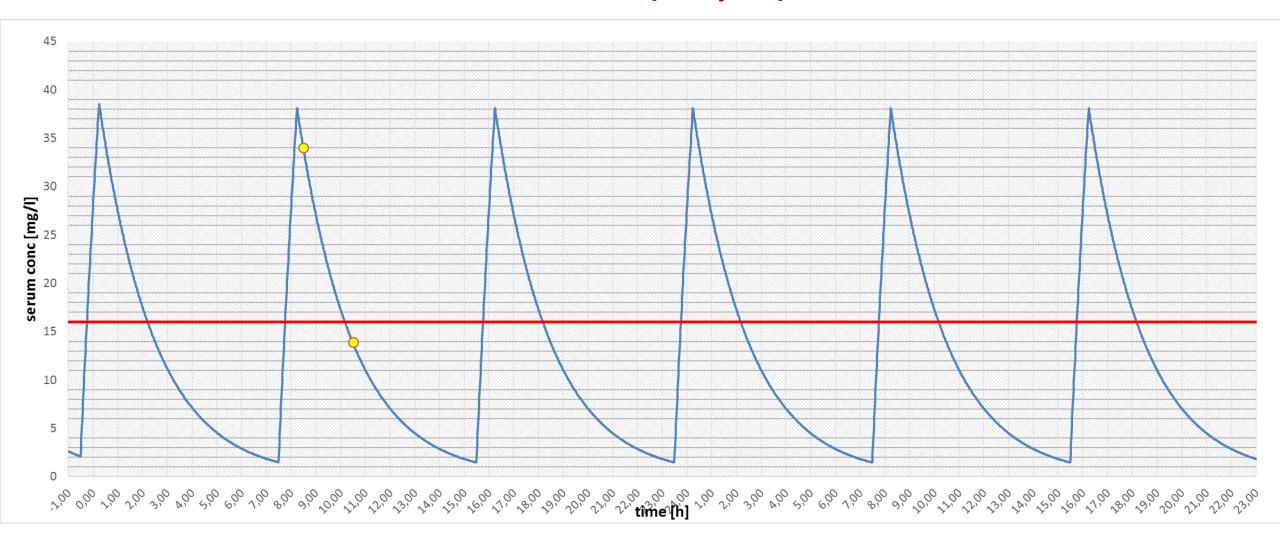
..... What does this mean now?



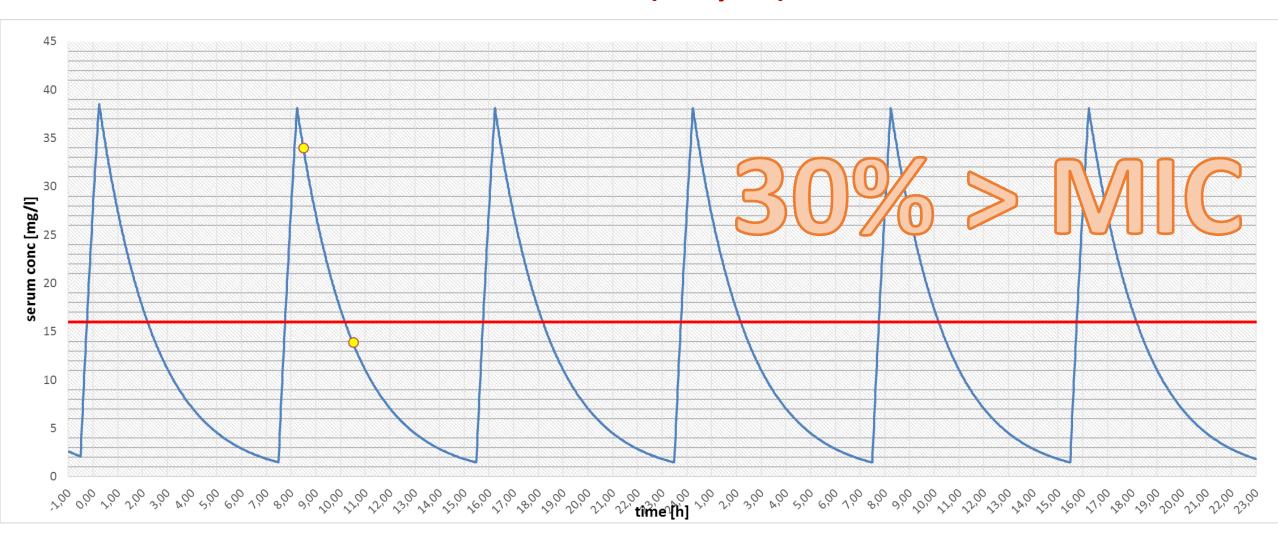


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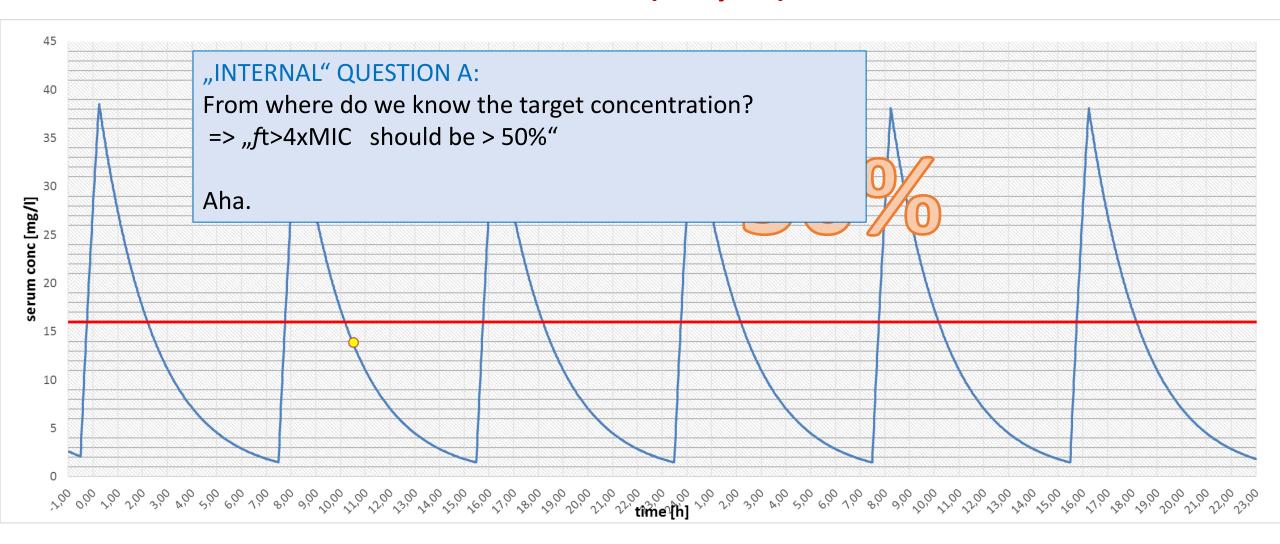
=> we perform a plasma-conc.-simulation!



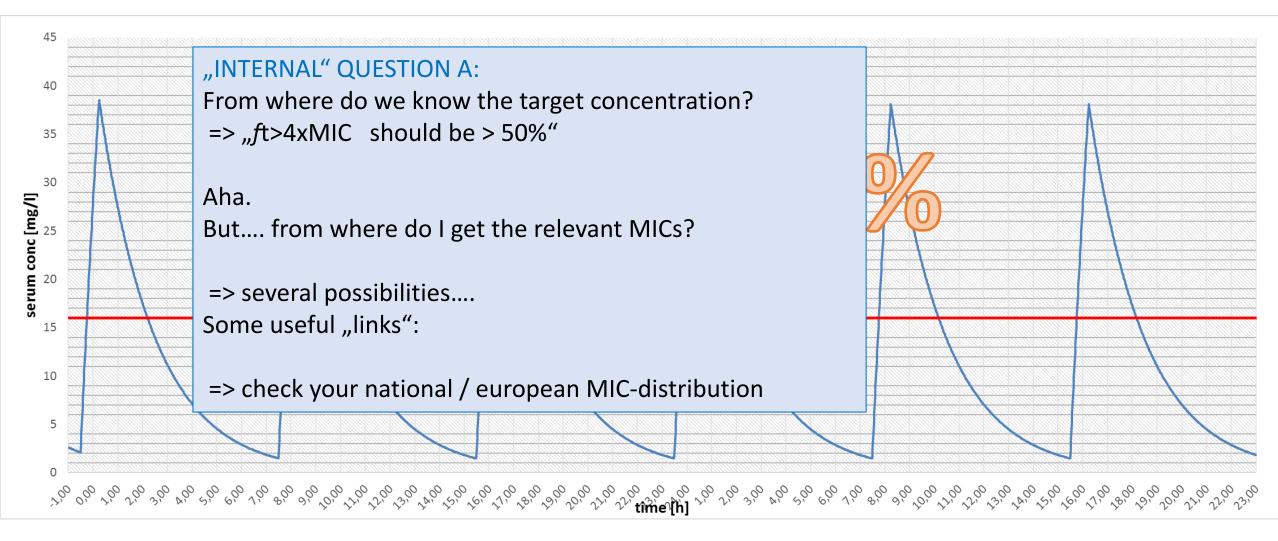
Measured concentrations embedded within the plasma curve simulation => target set at 50% of time above 4 x MIC ("ft>4MIC")



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"INTERNAL" QUESTION A:

From where do we know the target concentration? => "ft>4xMIC" should be > 50%"

Aha.

But.... from where do I get the relevant MICs?

=> several possibilities....

Some useful "links":

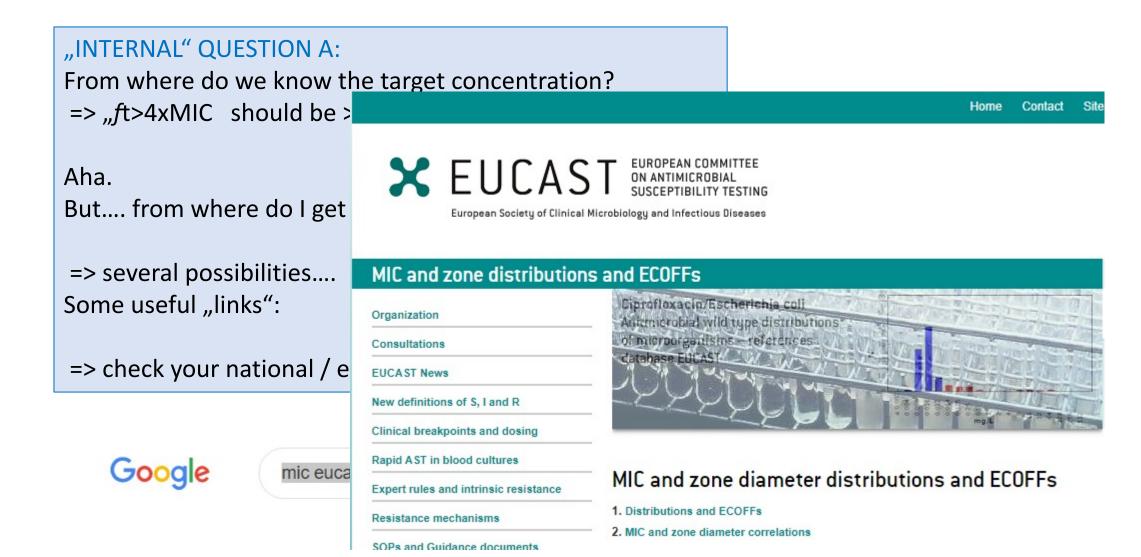
=> check your national / european MIC-distribution

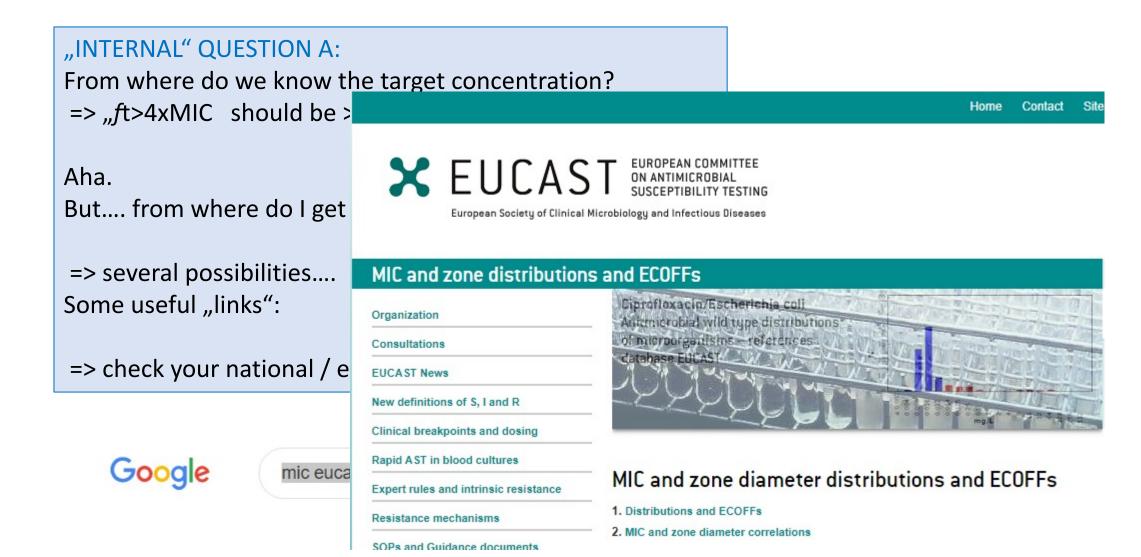














MIC EUCAST

Amikacin	0	0	0	0	0	0	0	93	374	975	5478	6313	2979	998	104	152	19	5	0	14	17490	16
Ampicillin-sulbactam (ratio)	0	0	0	0	0	0	0	1	21	3	5	7	16	24	80	3468	0	0	0	1	3625	-
Aztreonam	0	0	0	0	1	2	6	8	62	90	524	1295	537	434	230	62	41	1	0	11	3293	16
Cefepime	0	0	0	- 1	1	1	99	152	793	3787	10519	7295	6110	4438	3779	113	38	12	0	12	37138	8
Cefotaxime	0	0	0	0	2	3	2	2	10	13	21	93	412	419	274	155	79	14	0	6	1499	32
efpirome	0	0	0	0	0	0	0	1	9	135	262	154	77	38	16	6	6	0	0	4	704	-
efpodoxime	0	0	0	0	0	0	8	0	3	1	0	0	1	2	2	7	414	0	0	1	438	-
eftazidime	0	0	0	- 1	4	8	31	292	966	5975	12322	6271	2738	1712	815	751	167	117	106	84	32276	8
eftazidime-avibactam	0	0	0	0	0	0	0	1	20	96	82	42	20	22	17	16	8	0	0	3	324	-
eftobiprole	0	0	0	- 1	4	-11	- 11	67	446	2209	2134	1437	1373	1435	98	168	0	0	0	21	9394	8
Eftolozane	0	0	0	0	0	0	1	39	848	940	454	461	198	45	49	673	0	0	0	8	3708	4
Eeftolozane-tazobactam	0	0	0	0	0	0	8	150	1738	1528	737	533	225	68	82	645	2	8	0	17	5724	4
Leftriaxone	0	0	0	0	0	0	0	79	135	239	374	868	2008	2961	4489	21738	9	11	0	6	32911	-
Ciprofloxacin	0	0	19	42	535	3046	9357	4590	3291	1930	1510	887	939	526	519	729	140	28	105	83	28193	0.5
linafloxacin	0	0	0	0	12	36	147	336	165	104	51	36	27	0	0	0	0	0	104	2	1018	2
	0.002	0.004	0.008	0.016	0.03	0.06	0.125	0.25	0.5	1	2	4	8	16	32	64	128	256	512	Distributions	Observations	ECOFF
Colistin	0	0	0	0	0	4	17	103	1538	9273	8012	411	43	58	14	5	13	0	6	22	19497	4
Doripenem	0	0	0	9	80	587	1667	2194	2196	1439	795	878	662	596	45	7	0	0	0	17	11155	1
ravacycline	0	0	0	2	1	1	2	4	13	39	62	464	677	215	45	0	1	0	0	5	1526	32
rtapenem	0	0	0	1	1	1	4	4	20	38	102	131	131	99	37	44	0	0	0	2	613	2
osfomycin	0	0	0	0	0	0	0	0	8	2	30	55	56	97	236	468	239	19	40	5	1250	-
Satifloxacin	0	0	0	0	4	85	116	493	2289	1179	831	443	489	357	66	16	2	6	106	8	6482	-
Semifloxacin	0	0	0	0	44	54	405	678	279	179	86	58	95	14	8	10	0	0	0	5	1910	2
Sentamicin	0	0	0	1	5	6	73	449	1411	4741	9173	4729	1613	862	302	511	88	153	169	53	24286	8
mipenem	0	0	1	4	8	85	294	1197	8391	24813	12841	4363	4221	6906	651	388	22	39	108	90	64332	4
Canamycin	0	0	0	0	0	0	1	0	0	2	4	2	2	16	48	150	115	98	0	1	438	-
evofloxacin	0	0	0	0	19	98	387	2884	4692	2464	1745	1203	470	289	237	296	87	0	0	11	14871	2
feropenem	0	0	7	41	147	2632	6017	10882	11987	8805	5197	3791	3265	3959	392	443	33	14	0	74	57612	2
Moxifloxacin	0	0	0	1.	17	19	86	236	758	1924	976	620	671	208	180	182	443	8	0	9	6329	4
letilmicin	0	0	0	0	0	2	4	8	53	175	235	192	74	36	9	1	7	42	25	5	863	4

=											MIC	EUCAS	ıΤ									
Amikacin	0	0	0	0	0	0	0	93	374	975	5478	6313	2979	998	104	152	19	5	0	14	17490	16
Ampicillin-sulbactam (ratio)	0	0	0	0	0	0	0	1	21	3	5	7	16	24	80	3468	0	0	0	1	3625	-
Aztreonam	0	0	0	0	1	2	6	8	62	90	524	1295	537	434	230	62	41	1	0	11	3293	16
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Eefpirome	0	0	0	0	0	0	0	1	9	135	262	154	77	38	16	6	6	0	0	4	704	-
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Ceftazidime-avibactam	0	0	0	0	0	0	0															
Ceftobiprole	0	0	0	1	4	1/	11			1	∕IIC d	istril	outic	nc[۱	√lero	pene	em/	Pse	udor	monas]		8
Ceftolozane	0	0	0	0	0			25,0	. ——													4
Ceftolozane-tazobactam	0	0	0	0	0				A													4
Eftriaxone	0	0	0	0	0	1			\triangle													-
Ciprofloxacin	0	0	19	42	535	3046												<u> </u>				5
Clinafloxacin	0	0	0	0	12	36	7									I	- !	1				-
	0.002	0.004	0.008	0.016	0.03	0.06	0.125	15.0								ı						OFF
Colistin	0	0	0	0	0	4	17	15,0									I	I				4
Doripenem	0	0	0	9	80	587	1667															1
Eravacycline	0	0	0	2	1	1	2	10.0						-	Ш	\ _						2
Eravacycline Ertapenem	0	0	0	1	1	1	2	10,0						H	H			- <u>i</u> - <u>i</u> - <u>i</u>				2
				1 0	1 0	1 0		10,0										 		1		2
Ertapenem	0	0	0	1		1 1 0 85	4	10,0 5,0														
Ertapenem Fosfomycin	0	0	0	1	0		0															2
Ertapenem Fosfomycin Gatifloxacin	0 0	0 0 0	0 0 0	1 0 0	0	85	4 0 116	5,0														
Ertapenem Fosfomycin Gatifloxacin Gemifloxacin	0 0 0 0	0 0 0 0	0 0 0 0	1 0 0	0 4 44	85 54	4 0 116 405	5,0														
Ertapenem Fosfomycin Gatifloxacin Gemifloxacin Gentamicin mipenem	0 0 0 0	0 0 0 0	0 0 0 0	1 0 0 0	0 4 44 5	85 54 6	4 0 116 405	5,0	602 0	,ph _008	, 016	83° 10°	6 72 m	5 250	900	20	\(\frac{1}{2}\)	3 %	> ,60	220 640 29	po 60 150	3
Ertapenem Fosfomycin Gatifloxacin Gemifloxacin Gentamicin	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	1 0 0 0 1	0 4 44 5 8	85 54 6 85	4 0 116 405 73 294	5,0	2002 0'0	by 0'0g	, 0010	,032 00	50A 0,225	5 0,250	, 65.	20	20 &	2 %	3 %	320 6A0 72	8° 256° 532°°	3 4
Ertapenem Fosfomycin Gatifloxacin Gemifloxacin Gentamicin Imipenem Kanamycin	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0 0	1 0 0 0 0 1 4 0 0	0 4 44 5 8 0	85 54 6 85 0	4 0 116 405 73 294	5,0	2002 OC	ò _y 0′0g	, 0070	2032 OC	56A 0,72'	50250) os;	20,	20 &	0, %	3 %	320 6A0 325	\$0 2560 572°0	2
Ertapenem Fosfomycin Gatifloxacin Gemifloxacin Gentamicin Imipenem Kanamycin Levofloxacin	0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0 1	1 0 0 0 1 4 0	0 4 44 5 8 0	85 54 6 85 0	4 0 116 405 73 294 1 387	5,0	2002 OC	δ _V 0'όα	0016	,032 o c	50ª 0,2°	50,25	, 05.00	20	2' &	0,	3 760	32° 64° 72°	30 2560 5720	3 4
Ertapenem Fosfomycin Gatifloxacin Gemifloxacin Gentamicin Imipenem Kanamycin Levofloxacin Meropenem	0 0 0 0 0 0 0	0 0 0 0 0 0 0	0 0 0 0 0 0 1 0 0	1 0 0 0 1 4 0 0	0 4 44 5 8 0 19	85 54 6 85 0 98 2632	4 0 116 405 73 294 1 387 6017	5,0	53	30 ^A 0,00 ⁸	235	192	74	15 0750 36	9	20	20 &	42	25	32° 60° 329	863	2

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kztreonam	0	0	0	0	1	2	6	8	62	90	524	1295	537	434	230	62	41	1	0	11	3293	16
efepime	0	0	0	1	1	1	99	152	793	3787	10519	7295	6110	4438	3779	113	38	12	0	12	37138	8
efotaxime	0	0	0	0	2	3	2	2	10	13	21	93	412	419	274	155	79	14	0	6	1499	32
Cefpirome	0	0	0	0	0	0	0	1	9	135	262	154	77	38	16	6	6	0	0	4	704	-
efpodoxime	0	0	0	0	0	0	8	0	3	1	0	0	1	2	2	7	414	0	0	1	438	-
Eftazidime	0	0	0	1	4	8	31	292	966	5975	12322	6271	2738	1712	815	751	167	117	106	84	32276	8
eftazidime-avibactam	0	0	0	0	0	0	0						_	-					_	_		-
Ceftobiprole	0	0	0	1	4	17	11			Λ	∕IIC d	listril	butio	on [N	Vlero	pene	em /	Pse	udor	nonas]		В
Ceftolozane	0	0	0	0	0			25,0			ng	_	4			1		-1		100	_/	4
eftolozane-tazobactam	0	0	0	0	0				\4		UF				X	4			h		g/L	4
										· • 7												-
Eftriaxone	0	0	0	0	0	9															01 -	_
etrnaxone Ciprofloxacin	0	0	19	42	535	3046			\- <u></u>						_			$\overline{}$			6 / -	.5
				100		3046 36			-			,,									67 -	.5
Ciprofloxacin	0	0	19	42	535		0.129	15.0				,					 	- ! !			<i>01</i> -	.5
Ciprofloxacin	0	0	19 0	42 0	535 12	36	0.125 17	15,0				<i>,</i>					 				<i>6</i> , -	.5 - DFF
Ciprofloxacin Clinafloxacin	0 0 0.002	0 0 0.004	0 0.008	0 0.016	535 12 0.03	36 0.06		15,0				,,									<i>01</i> -	.5
Ciprofloxacin Clinafloxacin Colistin	0 0 0.002 0	0 0 0.004 0	19 0 0.008	42 0 0.016 0	535 12 0.03	36 0.06 4	17	15,0				,,					 				<i>O</i> / -	.5
Ciprofloxacin Colistin Ooripenem	0 0 0.002 0	0 0 0.004 0	0 0.008 0	42 0 0.016 0	535 12 0.03	36 0.06 4	17 1667					,					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				0 / -	.5
Ciprofloxacin Cinafloxacin Colistin Coripenem Cravacycline	0 0 0.002 0 0	0 0.004 0 0	0 0.008 0 0	42 0 0.016 0	535 12 0.03	36 0.06 4	17 1667 2															.5
Ciprofloxacin Colistin Coripenem Gravacycline Crtapenem	0 0.002 0 0 0	0 0.004 0 0 0	0 0.008 0 0 0	42 0 0.016 0 9 2	535 12 0.03 0 80 1	36 0.06 4 587 1	17 1667 2 4															.5
Ciprofloxacin Cinafloxacin Colistin Ooripenem Gravacycline Grapenem Gravacycline Grapenem Grapenem	0 0.002 0 0 0 0	0 0.004 0 0 0 0	0 0.008 0 0 0 0	42 0 0.016 0 9 2 1	535 12 0.03 0 80 1 1 0 0	36 0.06 4 587 1 1	17 1667 2 4	10,0										1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				.5
Ciprofloxacin Clinafloxacin Colistin Ooripenem Gravacycline Grapenem Gosfomycin Satifloxacin	0 0.002 0 0 0 0	0 0.004 0 0 0 0	0 0.008 0 0 0 0 0	42 0 0.016 0 9 2 1 0	535 12 0.03 0 80 1 1 0 4	36 0.06 4 587 1 1 0	17 1667 2 4 0 116	10,0 5,0														.5
Ciprofloxacin Cinafloxacin Colistin Coripenem Cravacycline Crapenem Cosfomycin Satifloxacin Semifloxacin	0 0.002 0 0 0 0 0	0 0.004 0 0 0 0 0 0	19 0 0.008 0 0 0 0 0 0	42 0 0.016 0 9 2 1 0	535 12 0.03 0 80 1 1 0 4 44	36 0.06 4 587 1 1 0 85 54	17 1667 2 4 0 116 405	10,0 5,0 0,0														.5 DFI 4 1 2 -
Ciprofloxacin Cinafloxacin Colistin Coripenem Gravacycline Grapenem Gosfomycin Gatifloxacin Gemifloxacin Gentamicin	0 0.002 0 0 0 0 0 0	0 0.004 0 0 0 0 0 0	19 0 0.008 0 0 0 0 0 0	42 0 0.016 0 9 2 1 0 0	535 12 0.03 0 80 1 1 0 4 44 5	36 0.06 4 587 1 1 0 85 54	17 1667 2 4 0 116 405 73	10,0 5,0 0,0						5 75								.5 DFI 4 1 2 -
Ciprofloxacin Cinafloxacin Colistin Coripenem Gravacycline Grapenem Gosfomycin Genifloxacin Genifloxacin Gentamicin mipenem	0 0.002 0 0 0 0 0 0	0 0.004 0 0 0 0 0 0 0	19 0 0.008 0 0 0 0 0 0 0	42 0 0.016 0 9 2 1 0 0 0	535 12 0.03 0 80 1 1 0 4 44 44	36 0.06 4 587 1 1 0 85 54 6 85	17 1667 2 4 0 116 405 73	10,0 5,0 0,0	000000000000000000000000000000000000000					50,25						320 640 3		.5 DFI 4 1 2 -
Ciprofloxacin Cinafloxacin Colistin Coripenem Gravacycline Grapenem Gosfomycin Gostifloxacin Gemifloxacin Gentamicin mipenem Canamycin	0 0.002 0 0 0 0 0 0 0	0 0 0.004 0 0 0 0 0 0 0	19 0 0.008 0 0 0 0 0 0 0 0	42 0 0.016 0 9 2 1 0 0 0 1 4	535 12 0.03 0 80 1 1 0 4 44 5 8	36 0.06 4 587 1 1 0 85 54 6 85 0	17 1667 2 4 0 116 405 73 294	10,0 5,0 0,0						50,25								.5 - DFI 4 1 .2 - - - - 3
Ciprofloxacin Cinafloxacin Colistin Coripenem Cravacycline Crapenem Cosfomycin Costifloxacin Coemifloxacin Coemimorin Contamicin Con	0 0.002 0 0 0 0 0 0 0	0 0.004 0 0 0 0 0 0 0 0 0	19 0 0.008 0 0 0 0 0 0 0 0	42 0 0.016 0 9 2 1 0 0 0 1 4 0 0	535 12 0.03 0 80 1 1 0 4 44 5 8 0	36 0.06 4 587 1 1 0 85 54 6 85 0 98	17 1667 2 4 0 116 405 73 294 1	10,0 5,0 0,0						50,25								.5 DFI 4 1 2 -
Ciprofloxacin Cinafloxacin Colistin Coripenem Gravacycline Grapenem Gosfomycin Gentamicin Gentamicin mipenem Canamycin Genamycin Gevofloxacin	0 0.002 0 0 0 0 0 0 0 0 0	0 0 0.004 0 0 0 0 0 0 0 0	19 0 0.008 0 0 0 0 0 0 0 0 0 0 0 7	42 0 0.016 0 9 2 1 0 0 0 1 4 0 0 4	535 12 0.03 0 80 1 1 0 4 44 5 8 0 19	36 0.06 4 587 1 1 0 85 54 6 85 0 98 2632	17 1667 2 4 0 116 405 73 294 1 387 6017	10,0 5,0 0,0						15 0 255 36								.5 - DF 4 1 .2 -

"INTERNAL" QUESTION A:

From where do we know the target concentration? => "ft>4xMIC" should be > 50%"

Aha.

But.... from where do I get the relevant MICs?

=> several possibilities....

Some useful "links":

=> check your national / european MIC-distributions

```
"INTERNAL" QUESTION A:
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But.... from where do I get the MIC?
=> several possibilities....
Some useful "links":
=> check your national / european MIC-distributions
=> check your own microbiology lab (if possible)
```

"INTERNAL" QUESTION A:

From where do we know the target concentration? => "ft>4xMIC" should be > 50%"

MiBi-results:

Aha.

But.... from where do I get the MIC

=> several possibilities....
Some useful "links":

=> check your national / europear

=> check your own microbiology I

Erregernachweise

K1 zahlreich Streptococcus dysgalactiae

(C/G-Strep.)

(2 zahlreich Pseudomonas aeruginosa (3 zahlreich Fusobacterium nucleatum

Fusobacterium nucleatum ist ein strikter Anaerobier und ist an infektiösen Prozessen im orofazialen Bereich und bei pleuropulmonalen Infektionen (nekrotisierende Pneumonie, Lungenabszess) beteiligt. Gegen Fusobakterien sind β-Laktame + BLI, Carbapeneme und Metronidazol wirksam. Infektionen mit Anaerobiern sind häufig Mischinfektionen. Eine antibiotische Therapie sollte immer je nach Lokalistation erfolgen und die Begleitflora abdecken (ggf. Kombinationstherapie).

Kein Nachweis von Pilzen (Sprosspilze, Schimmelpilze).

Antibiogramm	K1	мнк	K2	мнк	1.	/ d = (
3MRGN			R		o.1:	(day 6
Penicillin G	S	<=0.06				
Ampicillin	S		R		A:	
Piperacillin	S		R	32.0	w the targe	et concentration?
Amoxic./Clav.sre.	S		R		e > 50%"	
Ampicillin/Sulbactam	S		R			Erregernachweise
PiperacTazobactam			S	16.0	tet the MIC	K1 zahlreich
Cefazolin	S					K2 zahlreich
Cefuroxim	S		R			K3 zahlreich
Cefpodoxim	S		R			 Fusobacterium n infektiösen Proze
Cefotaxim	S		R		/ europea	pleuropulmonale Lungenabszess)
Ceftriaxon	S		R		robiology l	BLI, Carbapenen
Ceftazidim			R	8.0		Anaerobiern sind sollte immer je na
Meropenem	S		1	4.0	/ =	abdecken (ggf. K
Gentamicin	н	<=64.0	S	4.0		Kein Nachweis vo
Amikacin			S	4.0	Ī	
Tobramycin			S	<=1.0		

(day 6)

MiBi-results:

zahlreich K1

Streptococcus dysgalactiae

(C/G-Strep.)

Pseudomonas aeruginosa Fusobacterium nucleatum

- Fusobacterium nucleatum ist ein strikter Anaerobier und ist an infektiösen Prozessen im orofazialen Bereich und bei pleuropulmonalen Infektionen (nekrotisierende Pneumonie, Lungenabszess) beteiligt. Gegen Fusobakterien sind ß-Laktame + BLI, Carbapeneme und Metronidazol wirksam. Infektionen mit Anaerobiern sind häufig Mischinfektionen. Eine antibiotische Therapie sollte immer je nach Lokalistation erfolgen und die Begleitflora abdecken (ggf. Kombinationstherapie).

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3MRGN			R	
Penicillin G	S	<=0.06		
Ampicillin	S		R	
Piperacillin	S		R	32.0
Amoxic./Clav.sre.	S		R	
Ampicillin/Sulbactam	S		R	
PiperacTazobactam			S	16.0
Cefazolin	S		- 2000-200-200	
Cefuroxim	S		R	
Cefpodoxim	S		R	
Cefotaxim	S		R	
Ceftriaxon	S		R	
Ceftazidim			R	8.0
Meropenem	S		1	4.0
Gentamicin	н	<=64.0	S	4.0
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o.1: (day 6)

QUESTION 3:

Pseudomonas (et al) **confirmed** (Meropenem started) and MIC = 4 mg/L

=> TARGET of mero- concentration is 4 x MIC = 16 mg/L

...

But we are at calculated 30% fT>4xMIC!

Antibiogramm	K1	мнк	K2	мнк
3MRGN			R	
Penicillin G	S	<=0.06		
Ampicillin	S		R	
Piperacillin	S		R	32.0
Amoxic./Clav.sre.	S		R	
Ampicillin/Sulbactam	S		R	
PiperacTazobactam			S	16.0
Cefazolin	S			
Cefuroxim	S		R	
Cefpodoxim	S		R	
Cefotaxim	S		R	
Ceftriaxon	S		R	
Ceftazidim			R	8.0
Meropenem	S		1	4.0
Gentamicin	н	<=64.0	S	4.0
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But we are at calculated 30% fT>4xMIC!

What shall we do now???

- a) increase dose
- b) decrease dose
- c) switch antibiotic (e.g. to ciprofloxacin)

Antibiogramm	K1	мнк	K2	мнк
3MRGN			R	
Penicillin G	S	<=0.06	-11	
Ampicillin	S		R	
Piperacillin	S		R	32.0
Amoxic./Clav.sre.	S		R	
Ampicillin/Sulbactam	S		R	
PiperacTazobactam			S	16.0
Cefazolin	S			
Cefuroxim	S		R	
Cefpodoxim	S		R	
Cefotaxim	S		R	
Ceftriaxon	S		R	
Ceftazidim			R	8.0
Meropenem	S		ı	4.0
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o.1: (day 6)

QUESTION 3:

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=> TARGET of mero- concentration is 4 x MIC = 16 mg/L

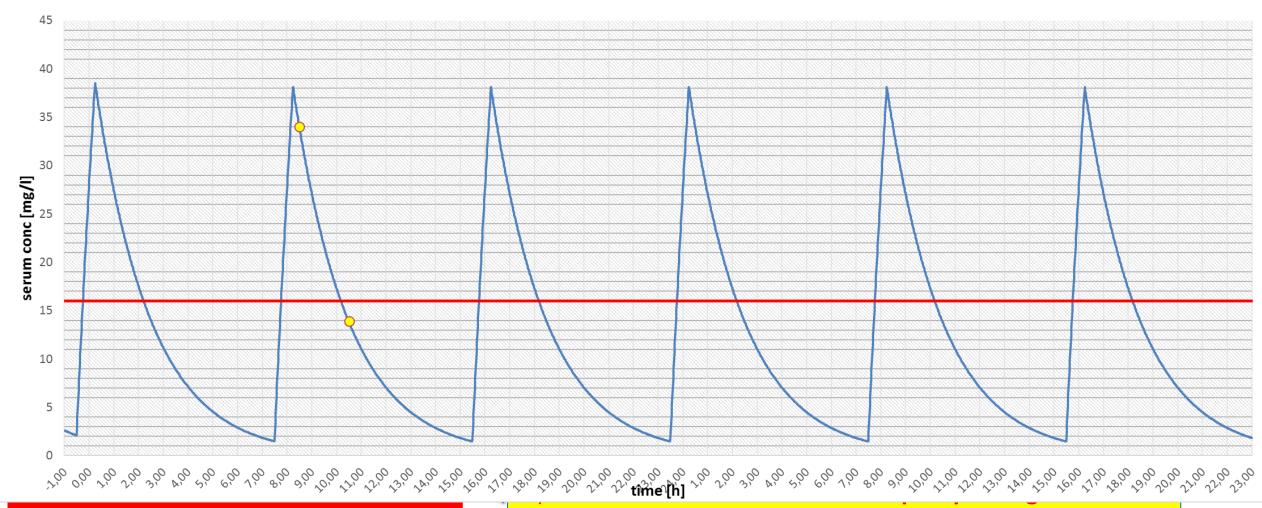
...

But we are at calculated 30% fT>4xMIC!

What shall we do now???

- a) ncrease dose => new dose: 3 x 3g i.v. meropenem
- b) decrease dose plus prolongation!
- c) switch antibiotic (e.g. to ciprofloxacin)

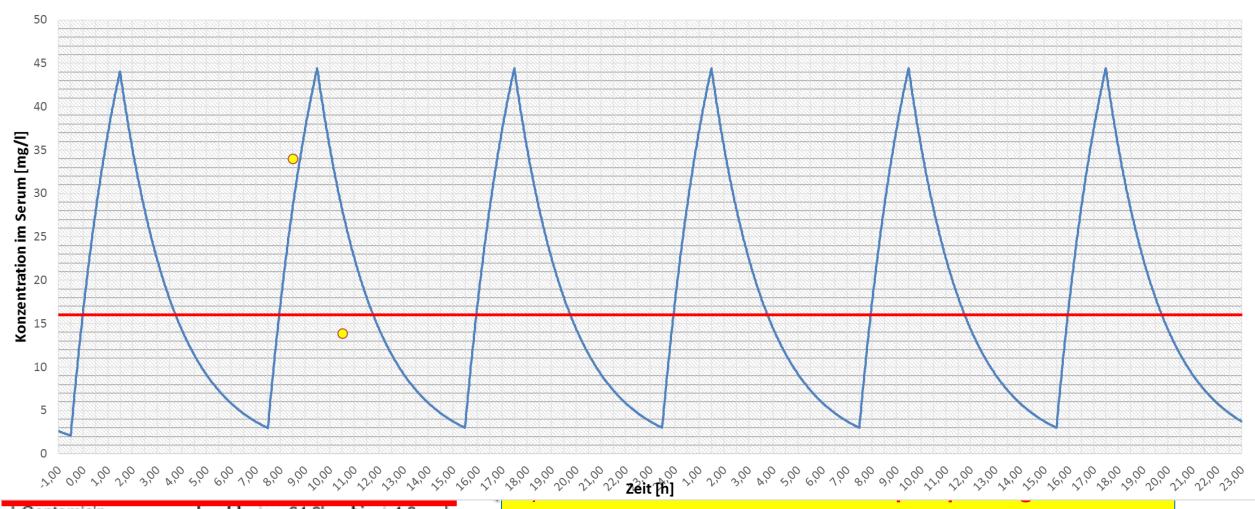
Antibiogramm	K1	МНК	K2	мнк	. 1.	/dov. 6
3MRGN			R		0.1:	(day 6



Gentamicin	R	<=64.0	S	4.0
Amikacin			S	4.0
Tobramycin			S	<=1.0

c) switch antibiotic (e.g. to ciprofloxacin)

Antibiogramm KI MHK KZ MHK	MHK 1	мнк	K2	мнк	K1	Antibiogramm
3MRGN R O. I.	0.1: (a)		R			3MRGN



Gentamicin	R	<=64.0	S	4.0
Amikacin			S	4.0
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c) switch antibiotic (e.g. to ciprofloxacin)

THERAPEUTIC DRUG MONITORING ("TDM") of meropenem

- Day 2 of meropenem-therapy => result: recommendation: "increase dosage"

increase to 3 gramm t.i.d.! (9 gramm per day)!

THERAPEUTIC DRUG MONITORING ("TDM") of meropenem

- Day 2 of meropenem-therapy => result: recommendation: "increase dosage"

increase to 3 gramm t.i.d.! (9 gramm per day)!

- Recommendation was accepted.

• • • •

SURGERY: wound revision (excision of diff. tissues plus cystectomia (with ileum conduit) ...)

=> Drop in eGFR!

=> concommitant increase in meropenem-concentration!

.... as seen in second TDM ...

Second TDM!

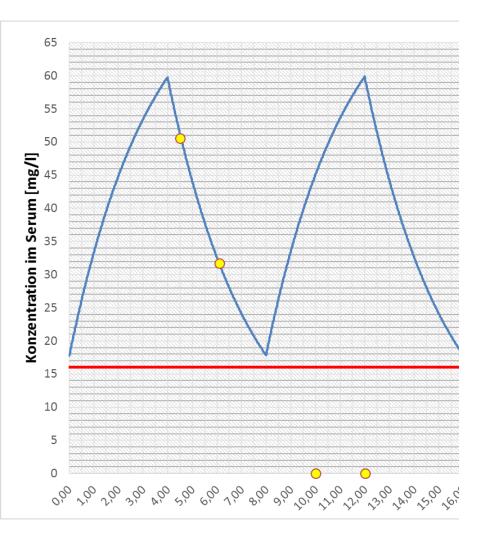
- target is still 16mg/L (nothing changed i.t. Pseudomonas susceptibility!)

But now we measure two concentrations of **50.6** and **31.7** mg/L!!!

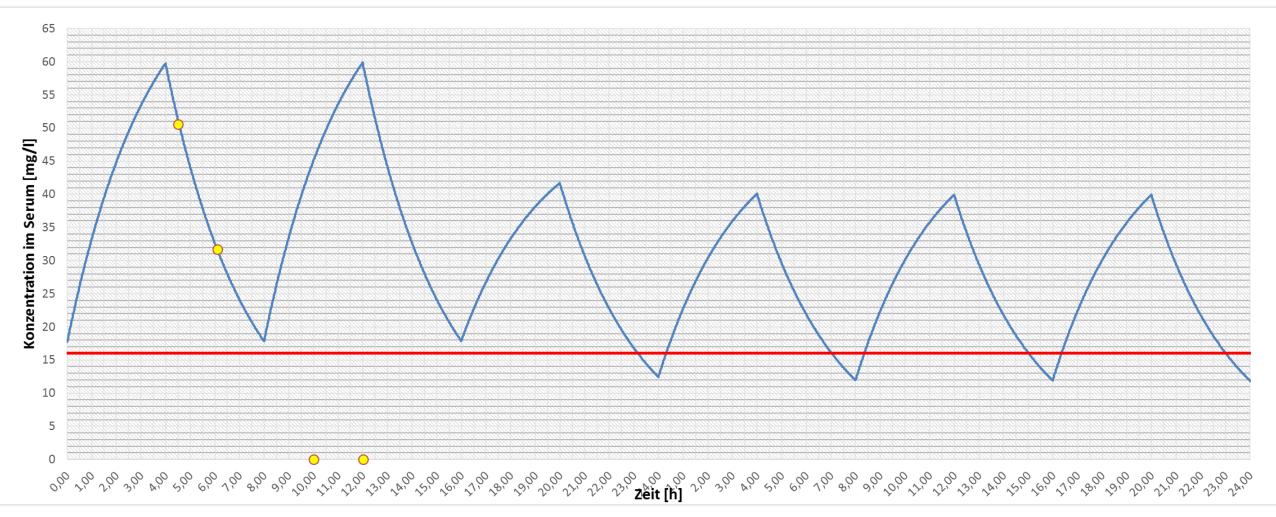
=> Overdosage!

=> cause = Drop in eGFR! New eGFR = 58 ml/min (following surgery)

Day 13: TDM no. 2



Day 13: TDM no. 2



=> DOSE REDUCTION here: to 3 x 2 gramm meropenem i.v.

Discharchge from ICU to gyn-ward.

Day 16: stop meropenem i.v

=> Infection under controll (for now...)

