




University of
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Balancing Adverse Effects in the Case of MRSA Septicemia

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Client Summary	Relevant Medications									Laboratory Values								
<p>Client is a full code, 70 year old female who presented to the ER with extreme nausea, vomiting, and diarrhea and a fever of 102.4°F. She was admitted with a primary diagnosis of septicemia secondary to an infected surgical wound in her lower back that dehisced after a fall. Her past medical history includes paroxysmal A-fib, depression, hypertension, hyperlipidemia, osteoporosis, and polymyalgia rheumatica.</p>	Drug	Dose	Time	Route	Indication	PK/PD	Assessment	Care	Teaching									
	Daptomycin	108 mL	0900, daily	IV	Lipopeptide Antibiotic	Excreted through kidneys, binds to cell membrane and interferes with bacterial cell wall synthesis	Evaluate for resolution of infection and monitor CK levels	If CK level is 5x the upper limit of normal notify the hospitalist and if it is 10x, discontinue drug.	Teach client to notify nurse if diarrhea, muscle pain, or tingling occurs.	CBC (relevant)	Result	Normal						
	Fentanyl Patch	12 mcg	q3d	Trans-dermal	Opioid Analgesic	Absorbed transdermally, agonist at Mu and kappa receptors.	Assess respiratory function, GI adverse effects and effectiveness of patch	Intervene to minimize adverse effects (GI, Respiratory rate, etc.)	Teach patient not to drink alcohol and to not change positions quickly.	WBC	10.78 (high)	4.0-9.0						
	Leflunomide	20 mg	0900, daily	PO	DMARD, treat moderate to severe RA	Metabolized in liver, excreted in kidneys. Reduces lymphatic and cytokine activity to arrest RA.	Assess laboratory values (ALT/AST) and therapeutic effects.	Monitor patient for adverse GI effects	Teach patient to not have any live vaccines during drug therapy.	RBC	3.86 (low)	3.90-4.98						
	Metoprolol Tartrate	100 mg	0900, daily	PO	Beta Blocker, Hypertension	Excreted in urine, metabolized in kidneys. Selectively blocks beta-1 receptors	Assess HR and BP before administering drug	Do not administer drug if HR < 50 bpm and BP < 90/50	Teach client to be cautious with rapid position changes	HCG	11.1 (low)	12.0-15.5						
	Ondansetron	4 mg	q8h	IV	Serotonin-3 receptor antagonist, emesis/nausea	Metabolized by the liver, protein bound, blocks 5-HT receptors in the CTZ.	Assess effectiveness of therapy, vital signs, and GI effects.	If arrhythmias develop, do not give ondansetron dose.	Teach patient to report any tremors, do not take with grapefruit juice.	HCT	35.4	35-35						
	Pantoprazole Na	40 mg	0900, daily	IV	Proton Pump Inhibitor, To resolve Gastric Reflux	Metabolized in liver, suppresses last phase of H+/K+ ATPase system to reduce gastric acidity.	Assess for daily control of GERD and monitor for adverse effects.	Ensure adequate nutrition is met if N/V/D are present and contact provider if persistent.	Teach patient to not chew drug, do not take with grapefruit juice	MCV	91.7	81-93						
	Saccharomyces Boulardii	250 mg	0900, daily	PO	Probiotic, Diarrhea (prevention / treatment)	Resembles protective effects or normal healthy gut flora	Monitor frequency and prevalence of diarrhea	Adhere to prescribed drug therapy	Teach patient importance of taking probiotic.	MCH	28.8	28-35						
	<p>Role of the Clinical Nurse Leader</p> <p>The CNL would ensure that proper risk/benefits were discussed with clients prior to elective surgical procedures. The CNL would implement staff training surrounding proper precautions for MRSA related infection control on the unit.</p>										<p>Basic Metabolic Panel (relevant)</p> <p>Chloride 108 (high) 98-107</p> <p>Calcium 7.7 (low) 8.4-10.5</p> <p>BUN 6 6-20</p> <p>Creatinine .87 .50-1.0</p> <p>Glucose (fasting) 110 (high) 70-99</p> <p>ALT 53 7-56</p> <p>AST 37 10-40</p>							
<p>References</p> <ul style="list-style-type: none"> http://reference.medscape.com/features/slideshow/spinal-decompression http://www.nysut.org/news/2015/september/sepsis-raising-awareness-of-a-life-threatening-condition http://www.nhs.uk/conditions/Lumbardecompressivesurgery/Pages/Whatsitpage.aspx http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3296877 http://www.snmw.ch/docs/pdf200x/2008/43/smw-12319.pdf 										<p>Diagnostic Tests</p> <table border="1"> <thead> <tr> <th>Culture</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Dehisced Surgical Wound</td> <td>MRSA positive</td> </tr> <tr> <td>Blood</td> <td>MRSA positive</td> </tr> </tbody> </table>			Culture	Result	Dehisced Surgical Wound	MRSA positive	Blood	MRSA positive
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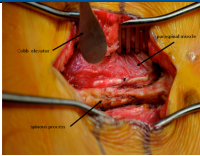
Client Summary

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Pathophysiology

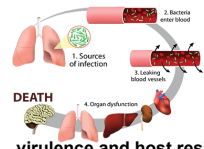
Lumbar Decompression Surgery:

Lumbar decompression surgery is an elective back surgery used to improve symptoms caused by pressure on the nerves in the spine. In the case of this patient two vertebrae were fused together in order to stabilize and strengthen the spine.



Septicemia:

Sepsis is a systemic inflammatory response to an infection related to bacteria in the blood stream. The pathogen virulence and host resistance regulate how intense the inflammatory response is.



Septicemia can be life threatening and difficult to treat (particularly in the case of Methicillin-resistant Staphylococcus aureus (MRSA)). In severe cases the inflammatory response can lead to blood clots and leaking vessels resulting in poor blood flow, organ failure, shock, or death.

