

DATE/TIME	<b>Piperacillin/Tazobactam (Zosyn) Desensitization Protocol</b>
	<b>DO NOT USE: U, u, IU, MS, MSO<sub>4</sub>, 1.0 (trailing zero), .5, QD, QOD, MgSO<sub>4</sub></b> <b>INSTEAD USE: Unit, Morphine, 1, 0.5 (leading zero), Daily, Every other day, Magnesium</b>
	<b>1. Initiation of Protocol Requirements:</b> <input checked="" type="checkbox"/> Admit patient to ICU: _____ <input checked="" type="checkbox"/> Patient <b>MUST</b> be full code for the desensitization procedure and thru the next full dose is administered. If patient is DNR/DNI, the primary team should discuss with the patient or legal guardian whether they are willing to reverse the status to FULL CODE for the duration of the procedure. <input type="checkbox"/> Consult UM Allergist <input type="checkbox"/> If patient is taking a beta blocker, HOLD beta blocker for 24 hours before protocol is administered.
	<b>2. Monitoring Requirements:</b> <input checked="" type="checkbox"/> Monitor and chart vital signs and oxygen saturation prior to the first dose and prior to each dose escalation (5min during dose and 10minutes after each dose = every 15 minutes). <input checked="" type="checkbox"/> Assess breath sounds prior to first dose, prior to each dose escalation, and upon complaints of respiratory symptoms including dyspnea or chest tightness. <input checked="" type="checkbox"/> Notify ICU fellow/attending or allergist at: _____ and hold subsequent doses until further orders if any of the following signs or symptoms occur: a. Oral: pruritus of lips, tongue, and palate, oral "tingling", edema of lips and tongue, metallic taste in the mouth. b. Skin: localized or generalized itching, flushing, hives, swelling (angioedema), morbilliform rash. c. GI: abdominal cramps or pain (colic), nausea, vomiting, diarrhea, loss of bowel control d. Respiratory: nasal congestion or sneezing, rhinorrhea, tightness in the throat, hoarseness, "barky" cough, difficulty swallowing, dyspnea, chest tightness, wheezing, stridor, drop in oxygen saturation, cyanosis, respiratory distress. e. Cardiovascular: tachycardia (increase >15 beats/min), dysrhythmia, mild hypotension, bradycardia, profound hypotension, cardiac arrest. f. Neurological: change in activity level, anxiety, "light headedness", feeling "impending doom", loss of consciousness <input checked="" type="checkbox"/> If allergic reaction occurs call physician at phone number listed above and administer the following agents in the listed sequence: a. Give 0.3mg (0.3mL) of 1:1000 epinephrine IM x1. May repeat Q5Min x2 as needed for allergic reaction. b. After epinephrine, Give 0.9% NaCl 1000mL IV bolus x 1 as needed for systemic reaction. c. After 0.9% NaCl, give Methylprednisolone 125mg IV x 1 dose PRN for systemic reaction. d. After Methylprednisolone, administer diphenhydramine 50mg IV X 1 PRN systemic reaction. e. After diphenhydramine, administer ranitidine 150mg IV x1 PRN systemic reaction.
	<b>3. Drug Desensitization Procedures:</b> <input checked="" type="checkbox"/> Start with bag labeled solution #1. <input checked="" type="checkbox"/> Give each dose over 5 minutes. Then, allow a 10 minute monitoring period for signs/symptoms of allergic reaction before giving the next dose. If tolerating, modify infusion rate and volume to be infused (VTBI) on the pump in an escalating manner per protocol. <input checked="" type="checkbox"/> Document each dose as "given" on the flowsheet on page 2 of this protocol. <input checked="" type="checkbox"/> Monitor for 30 minutes after the final dose. If no reaction occurs, start the scheduled piperacillin/tazobactam dose as follows 8 to 12 hours from the last desensitization dose as ordered by the treating physician: Piperacillin/Tazobactam _____ IV Q _____ H <input checked="" type="checkbox"/> If dose is held for more than 24 hours, notify allergist prior to re-administration of the drug.
	<b>4. Pharmacy Compounding Instructions:</b> <input checked="" type="checkbox"/> Pharmacist: Enter set named Piperacillin/Tazobactam Desensitization protocol <input checked="" type="checkbox"/> Technician: Make doses as follows: a. Solution #3: Piperacillin/Tazobactam 3.375g in 100mL D5W. Remove equivalent volume being added to bag to keep concentration consistent. <b>Label as solution #3.</b> b. Solution #2: Remove 5mL from Solution #3 and add to a 50mL bag of D5W. <b>Label as solution #2.</b> c. Solution #1: Remove 2mL from Solution #2. Place in a 100mL bag of D5W to create a piperacillin/tazobactam (6.75mg/100mL) bag. <b>Label as solution #1.</b>
	<b>Physician Name and Signature:</b> _____ <b>Date:</b> _____ <b>Physician contact phone number:</b> _____



1400 NW 12<sup>th</sup> Avenue,  
Miami, FL 33136

# Piperacillin/Tazobactam Desensitization Protocol

Dose #	Protocol Time	Actual Time Given	Rate (mL/hr)	VTBI (mL)	Infusion time	Dose (mg)	Cumulative Dose (mg)	Next Dose Due at (time)
<b>Start with Solution Bag #1 (6.75mg/100mL)</b>								
1	0:00		9	0.8	5 min	0.05	0.05	
2	0:15		18	1.6	5 min	0.1	0.15	
3	0:30		36	3	5 min	0.21	0.36	
4	0:45		72	6	5 min	0.4	0.8	
5	1hr		144	12	5 min	0.8	1.6	
Total bag infused: 23.4mL				Total bag to waste: 76.6mL				
<b>Change to Solution Bag #2 (162mg/48mL)</b>								
6	1:15		6	0.5	5 min	1.6	3.5	
7	1:30		12	1	5 min	3.3	6.5	
8	1:45		24	2	5 min	6.6	13	
9	2:00		48	4	5 min	13.2	26	
10	2:15		96	8	5 min	26.4	53	
11	2:30		192	16	5 min	52.7	105	
Total bag infused: 31.5mL				Total bag to waste: 16.5mL				
<b>Change to Solution Bag #3 (3206/95mL)</b>								
12	2:45		38	3	5 min	105.5	211	
13	3:00		75	6	5 min	210.9	422	
14	3:15		156	12	5 min	241.9	844	
15	3:30		300	25	5 min	843.8	1687	
16	3:45		600	50	10 min	1687.5	3375	
Total bag infused: 100mL				Total bag to waste: 0mL				
<b>Total Time to Desensitize: 4 hours</b>								
<b>Total Cumulative Dose: 3375mg</b>								

## References:

1. Solensky R. Drug desensitization. Immunology and Allergy Clinics of North America. 24 (2004) 425-443.
2. Castells M. Desensitization for drug allergy. Curr Opin Allergy Clin Immunol 6:476-481, 2006.



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Patient Identification Sticker