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|  | ***Put it in Practice*** |

**Penicillin Pathway**

Identify in as much detail as possible the reaction associated with the last exposure to a penicillin:

*Ensure the patient was actually exposed to a penicillin. Some patients have reported relatives’ penicillin “allergies” as their own. Determine if a penicillin was then tolerated after the index reaction.*

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| **Why did they get the penicillin?***Rashes, fevers, headaches, upset stomach are all common symptoms that frequently occur during viral infections mistreated with penicillins.***What was the route of exposure?***Serious IgE-mediated reactions are more common with parenteral exposures compared to oral exposures.* **How long ago was the last penicillin exposure?***Even true IgE-mediated penicillin allergy can disappear with time. If the reaction was compatible with an IgE-mediated allergy and occurred less than 3 months ago, the chance of positive testing increases.***When was the reaction?***Onset of reaction within a few hours (< 6 hours) more commonly indicates an immediate reaction (IgE). Delayed onset reactions occurring days or weeks into the course may range in level of severity.***What was the reaction?** *Ensure there was an actual reaction. Note the features of any rashes. Note if lesions last hours (hives) or longer than a day (not hives). Note any systemic symptoms. Note any laboratory abnormalities.*  |

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| Delayed onset skin rash, joint stiffness, fever *(Serum sickness)*Delayed onset rash, more than 10% of body surface area blistered, with mucosal lesions*(Stevens-Johnson syndrome)*Fever, exhaustion, blood in urine, confusion, fatigue, nausea, water retention*(Acute Interstitial Nephritis)*Delayed onset rash, fever, eosinophilia, inflammation of internal organs, swelling of lymph nodes*(DRESS syndrome)*Paleness, fatigue, fever, confusion, dizziness, weakness, hemoglobin less than 8 gm/dl*(Hemolytic anemia)***Extremely rare serious drug-associated reactions*****Delayed onset*** | Hives, swelling, drop in blood pressure, shortness of breath*(Anaphylaxis)*Hives*(Allergy)***Relatively rare IgE-mediated allergy*****Immediate onset*** | Itching without rashHeadachesGI upsetFeverDelayed onset non-hive rashes without any skin peeling or blisteringEMR lists “allergy”, but patient deniesFamily history of problem with same medication**Relatively common non- immunologically mediated or benign T-cell mediated*****Delayed onset*** |

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Identify the appropriate diagnostic evaluation and therapy:

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| **Avoid using penicillins****OK** to:Use any cephalosporins or carbapenems or aztreonam-or-Use alternative agent based on culture results of suspected bacterial pathogen | **All should have penicillin allergy testing****OK** to:Use any cephalosporins or carbapenems or aztreonam-or-Use alternative agent based on culture results of suspected bacterial pathogen | **All should have direct oral amoxicillin challenge****OK** to:Use any cephalosporins or carbapenems or aztreonam-or-Use alternative agent based on culture results of suspected bacterial pathogen |