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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 rash  Headaches  GI upset  Fever  Delayed onset non-hive rashes without any skin peeling or blistering  EMR lists “allergy”, but patient denies  Family 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 |