

Louth: Antimicrobial Guidelines - Louth Hospitals: Antimicrobial Guidelines: Penicillin Hypersensitivity

Types of Drug Hypersensitivity Reactions

Drug hypersensitivity reactions (DHR) may be either immunoglobulin E (IgE)-mediated (immediate) or non-IgE-mediated (non-immediate) hypersensitivity reactions.

Type of DHR	Immediate	Non-immediate
Time of onset	< 1 hour usually; Always < 6 hours	> 24 hours usually; Always > 1 hour
Mechanisms	IgE-mediated	IgG, IgM, T cells
Examples of Manifestations	Urticaria Angioedema Rhinitis Conjunctivitis Bronchospasm GI symptoms Anaphylaxis	Delayed urticaria Maculopapular eruptions Fixed drug eruptions Vasculitis Toxic Epidermal Necrolysis Stevens-Johnson Syndrome Acute generalised exanthematous pustulosis DRESS Hepatitis Tubulointerstitial nephritis Cytopenias Drug fevers

Incidence of Penicillin and Related Hypersensitivity

Cross-reactivity between penicillins and first and early second-generation cephalosporins has been reported to occur in up to 10%, and for third-generation cephalosporins in 2–3%, of penicillin-allergic patients. In patients with a history of immediate-onset hypersensitivity to penicillins, there is approximately 1% risk of immediate-onset hypersensitivity to meropenem.

Choice of Antibiotics in Penicillin and Related Hypersensitivity

Penicillins and cephalosporins are contraindicated in patients with a history of immediate-onset or severe hypersensitivity reactions to penicillin. Cephalosporins may be used with caution in patients with a history of non-immediate penicillin hypersensitivity reactions.

Aztreonam may be used with caution in patients with a history of immediate or non-immediate penicillin hypersensitivity - aztreonam may be less likely than other beta-lactams to cause hypersensitivity in penicillin-sensitive patients.

Meropenem may be used with caution and close clinical monitoring in patients with a history of immediate or non-immediate penicillin hypersensitivity after risk/benefit consideration.

Documentation of Penicillin and Related Hypersensitivity

Penicillin hypersensitivity and the nature of the reaction should be recorded both in the patient's medical notes and on the drug chart. It is crucial to differentiate between immediate-onset and delayed-onset penicillin hypersensitivity reactions as there are significant implications for antimicrobial selection specific to each reaction type. The patient should be informed of the reaction and any necessary future precautions where appropriate. This is the responsibility of the clinician in charge of the patient.

References

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