Pegasparagase: A review in acute lymphoblastic leukaemia

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Designed to treat acute lymphoblastic leukaemia, or ALL, pegasparagase is an important and effective treatment option for both paediatric and adult patients.

Pegasparagase is a modified form of the anti-ALL enzyme therapy L-asparaginase, derived mainly from E. coli. Unlike the native enzyme, pegasparagase is conjugated with polyethylene glycol, or pegylated—which offers various advantages, such as providing pegasparagase with a prolonged circulation time, allowing for less frequent administration—every two weeks. And it may reduce immunogenicity compared with native (or non-pegylated) L-asparaginase.

Extensive evidence shows that, in adults and children newly diagnosed with ALL, intramuscular or intravenous administration of pegasparagase is an effective first-line treatment as part of a multi-agent chemotherapy regimen. It is also beneficial in patients with relapsed ALL who have hypersensitivity to E. coli L-asparaginase.

Regarding tolerability, pegasparagase showed a manageable profile in paediatric and adult patients with newly diagnosed ALL; the most common adverse events were generally consistent with those observed with E. coli L-asparaginase. A similar tolerability profile was observed in patients with relapsed ALL and hypersensitivity to the native enzyme.

Given its potentially reduced immunogenicity and more convenient dosage regimen compared with native L-asparaginase, pegasparagase remains a valuable treatment option for both children and adults with ALL.

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