

**Chelation for Thalassaemia Major Patients (a clinician's perspective)**

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<b><i>Chelator</i></b> 排鐵鉗合劑	<b><u>Desferal</u></b> <b><u>(Desferioxamine)</u></b>	<b><u>Deferiprone</u></b>	<b><u>Combination therapy</u></b> <b><u>Desferal + deferiprone</u></b>	<b><u>Deferasirox (Exjade)</u></b>
<b><i>Dosage and administration</i></b> 份量及用法	30– 40 mg/Kg/day prolonged subcutaneous injection 5 to 7 days per week; may need higher dose	75- 100 mg/Kg/day By oral, 3 times per day	Desferal 30 – 40 mg/Kg/day 2 to 7 days per week; Deferiprone 75- 100 mg/Kg/day By oral, 3 times per day	20 – 30 mg/Kg/day By oral, once per day; May need higher dose
<b><i>Limitations in efficacy</i></b> 成效之限制	poor compliance because the drug administration is cumbersome and demanding	Insufficient data for the use in children < 12 years of age; Definite risk of neutropenia and agranulocytosis;	Same limitations as desferal and deferiprone respectively	Lacking long term treatment results
<b><i>Advantage in efficacy</i></b> 成效之優點	Long history of use	Can remove iron from heart	Same as desferal and deferiprone respectively	Preliminary studies show it can remove iron from heart ; Can be used for child > 2 yr
<b><i>Safety</i></b> 安全性	Very safe; Long history of use Major side effects uncommon such as bone abnormalities and neurotoxicity	Significant risk (5%) of neutropenia and agranulocytosis which can lead to serious infection; mandate weekly blood monitoring	Same as desferal and deferiprone respectively	Safe as major complications uncommon; Post-marketing report on cases of serious hepatic, renal toxicities and cytopenia though not sure about the contributory role of deferasirox in some

				(FDA); Lacking long term safety data
<b>Choice</b> 選擇	Gold standard: First line drug (International Thalassaemia Foundation TIF guidelines)	Second line drug for patients who fail to achieve adequate chelation or develop significant complications with first line therapy (TIF guidelines and Italian guidelines)	Institutional experience More data emerging	First line drug (TIF guidelines); Second line drug for patients who fail to achieve adequate chelation or develop significant complications with first line therapy, prefer deferasirox to deferiprone (Italian guidelines)
<b>FDA</b> 美國食品及藥 物管理局	approved	Not approved	Deferiprone not approved	Approved
<b>Remarks</b> 評論	Despite being the gold standard drug, it is not a good drug because of difficult administration; many patients still develop complications as a result of inadequate iron chelation	Threat of neutropenia is real; Lacking usage data for young children	Still need to use subcutaneous desferal injection albeit less frequent; Still run the risk of neutropenia in using deferiprone	Urgent indication locally for patients who cannot use deferiprone as second line drug because of serious complications with deferiprone

**Reference:**

1. Guidelines for the Clinical Management of Thalassaemia, 2<sup>nd</sup> edition 2007 International Thalassaemia Federation
2. Italian Society of Hematology practice guidelines for the management of iron overload in thalassaemia major and related disorders. Hematologica 2008 May 93(5): 741 – 752
3. FDA Drug Safety Newsletter, Volum1, Number 1, 2007