901. HEALTH SERVICES AND OUTCOMES RESEARCH - NON-MALIGNANT CONDITIONS: POSTER I | DECEMBER 3, 2015

A Cost-Utility Analysis of Deferiprone Compared to Desferrioxamine and Deferasirox for the Treatment of Chronic Myocardial Iron Overload in Thalassemia Patients

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Abstract

Background: In thalassemia major (TM) three iron chelators are available to treat chronic iron overload due to blood transfusions: subcutaneous desferrioxamine (DFO), oral deferiprone (DFP) and oral deferasirox (DFX).

Aims: This study evaluated the relative cost effectiveness of the three chelators in monotherapy.

Methods: The cost-effectiveness model used is an Italian adaptation within the MIOT (Myocardial Iron Overload in Thalassemia) project of the previously built and published UK model (Bentley A et al. Pharmacoeconomics 2013;31:807-22). Based on literature and MIOT data, it was assumed that all the monotherapies had a comparable effect on and liver iron. Data about adverse events (AE) and cardiac morbidity were taken from the MIOT Network.

Four different efficacy-based scenarios were explored in respect to cardiac morbidity and mortality using Markov-type models.

Cost data were updated to reflect the Italian market: the tariffs applied in Veneto Region in the year 2014 were considered for the drugs, the administration of desferrioxamine and the monitoring. In Italy Veneto Region was proved to be one of the most upright region in the health costs management. Incremental costs and quality-adjusted life-years (QALYs) were calculated for each treatment, with cost effectiveness expressed as incremental cost per QALY.

Results: Within the MIOT project, none of the AE considered in the UK model (neutropenia, agranulocytosis, Franconi syndrome, hepatitis) were detected for the 193 TM patients who had been received the same chelator for at least 18 months and were considered as reference group.

The table shows costs and QALYs in the different modelled scenarios. For the first three scenarios a 5-year period was considered per patient while for the last scenario a 1-year time

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all scenarios, providing greater QALY at a lower cost. There was a higher QALY gain with DFX compared with DFO, but at a greater cost.

Conclusions: The results of this analysis indicate that, from an Italian perspective, DFP is the most cost-effective treatment available for managing chronic iron overload in β-thalassaemia patients. Use of DFP in these patients could therefore result in substantial cost savings.

Table 1.

	Drug cost	Administration costs	Monitoring costs	AE costs	Total costs	QALYs
Scenario 1: iron chelators impact cardiac morbidity and mortality. Time horizon: 5 years.						
DFP	€14,815 (€15,704)	€0 (€0)	€1,277 (€1,354)	0	**€16,092 (€17,058)**	**3.962 (4.200)**
DFX	€158,122 (€167,508)	€0 (€0)	€1,495 (€1,583)	0	**€159,618 (€169,091)**	**3.876 (4.106)**
DFO	€55,009 (€58,274)	€12,034 (€12,748)	€788 (€835)	0	**€67,831 (€71,857)**	**3.285 (3.479)**
Scenario 2: iron chelators impact only cardiac mortality. Time horizon: 5 years.						
DFP	€14,815 (€15,704)	€0 (€0)	€1,277 (€1,354)	0	**€16,092 (€17,058)**	**3.962 (4.200)**
DFX	€158,122 (€167,508)	€0 (€0)	€1,495 (€1,583)	0	**€159,618 (€169,091)**	**3.888 (4.119)**
DFO	€55,009 (€58,274)	€12,034 (€12,748)	€788 (€835)	0	**€67,831 (€71,857)**	**3.294 (3.490)**
Scenario 3: iron chelators impact only cardiac morbidity. Time horizon: 5 years.						
DFP	€14,815 (€15,704)	€0 (€0)	€1,277 (€1,354)	0	**€16,092 (€17,058)**	**3.962 (4.200)**
DFX	€161,155 (€170,820)	€0 (€0)	€1,524 (€1,615)	0	**€162,679 (€172,435)**	**3.951 (4.187)**
DFO	€56,064 (€59,427)	€12,264 (€13,000)	€803 (€851)	0	**€69,132 (€73,278)**	**3.348 (3.548)**
Scenario 4: iron chelators are all equivalent. Time horizon: 1 year. No discount.						
DFP	€3,141	€0	€271	0	€3,412	0.840
DFX	€34,164	€0	€334	0	€34,498	0.840

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Discounted value[a] (Undiscounted value)

Author notes

Disclosures

Pepe: *ApoPharma Inc:* Speakers Bureau; *Novartis:* Speakers Bureau; *Chiesi:* Speakers Bureau.

Topics: deferasirox, deferiprone, deferoxamine, iron overload, myocardium, thalassemia, costs and benefits, iron chelating agents, chelating agents, adverse event

Author notes

* Asterisk with author names denotes non-ASH members.

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Abstract

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