A Multicenter, Randomized, Open-label Trial Evaluating Deferasirox Compared with Deferoxamine for the Removal of Cardiac Iron in Patients with Beta-thalassemia Major and Iron Overload (CORDELIA)


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BACKGROUND

Patients with beta-thalassemia major and iron overload can develop iron-related complications including cardiac fibrosis and heart failure. Iron chelation therapy may be beneficial in reducing iron overload and preventing iron-induced cardiomyopathy. Deferasirox (DFX) is a new iron chelator that has been shown to be effective in reducing myocardial iron burden in patients with beta-thalassemia major. As compared with deferoxamine (DFO), DFX is administered orally and has improved gastrointestinal tolerability.

METHODS

The primary efficacy endpoint was the ratio of the Gmean myocardial T2* after 1 year of treatment with DFX divided by the ratio of baseline myocardial T2*. Secondary endpoints included the ratio of Gmean liver iron concentration (LIC) after 1 year of treatment with DFX divided by the ratio of baseline LIC. Study entry criteria included age ≥ 10 years and LIC ≥ 20 mg Fe/g dry weight (dw). Total study population was 193 patients. All patients had abnormal myocardial T2* at baseline and were randomized to receive DFO (n=98) or DFX (n=95) therapy. Patients were treated for up to 2 years. The study was a multinational, prospective, randomized, open-label, parallel-group design. Placebo-controlled studies have shown a decrease in myocardial T2* >20 ms for DFO treatment of about 10 ms (12–16% decrease).

OBJECTIVE

The study compared DFO and DFX therapy for myocardial iron removal as assessed by change in myocardial T2*.

RESULTS

Liver iron concentration (LIC) was lower in the DFX cohort compared to the DFO cohort (Table 1). Baseline LIC was similar in both groups. LIC decreased by 20% in the DFX cohort and by 13% in the DFO cohort. Median LIC at baseline was 20 mg Fe/g dw in both groups and was similar overall between groups for myocardial iron removal as assessed by change in T2* was demonstrated.

Safety

Nine patients discontinued therapy due to AEs. Three deaths occurred during the study: one due to heart failure, one due to arrhythmia, and one due to stroke. In addition, 16 patients discontinued therapy due to drug-related AEs: 8 in the DFX cohort and 8 in the DFO cohort. The most common drug-related AE was diarrhea (12.5% of patients in the DFX group vs 11.5% of patients in the DFO group). There were no statistically significant differences between the treatment groups in the frequency of AEs during the study.

REFERENCES


