Background

Pixantrone (Ro22-6178) is a novel anthracycline derivative that shares structural similarity with mitoxantrone and anthracyclines. It is being studied as a potential treatment for relapsed or refractory aggressive non-Hodgkin's lymphoma (Ann Oncol 2008;19:2106-14). Pixantrone has been shown to have a lower cardio toxicity profile compared to doxorubicin as a single agent and in combination with rituximab (Eur J Cancer 2008;44:103-11). This study evaluated the safety and efficacy of pixantrone as a single agent compared to the comparator arm for patients with relapsed or refractory aggressive non-Hodgkin's lymphoma.

Methods

Objectives

The primary objective was to compare the overall response rate (ORR) for patients treated with pixantrone to those treated with the comparator arm. Secondary endpoints included time to treatment failure, progression-free survival, overall survival, and tolerability. The study population consisted of patients who had previously received at least one line of prior chemotherapy, with a median of 3 prior lines of therapy.

Study Design

This was a randomized, controlled, international, multicenter study (NCT00003849). Patients were randomized to the pixantrone arm (n=70) or the comparator arm (n=70) in a 1:1 ratio. Both arms received 28-day cycles of treatment, with 6 cycles of therapy as the target. The primary endpoint was ORR, measured at the 20th day of cycle 1. Subsequent therapy was allowed in both arms.

Results

Overall Response Rate

Pixantrone arm: 50.0% (n=35) vs. Comparator arm: 32.0% (n=22) (p=0.022). Median progression-free survival was 7.1 months in the pixantrone arm vs. 4.0 months in the comparator arm (p=0.038). Median overall survival was 13.1 months in the pixantrone arm vs. 10.2 months in the comparator arm (p=0.085).

Cardiac Safety

No significant changes in left ventricular ejection fraction (LVEF) were observed in either arm. The incidence of grade 3/4 cardiac events was lower in the pixantrone arm compared to the comparator arm (Pixantrone: 10.5%, Comparator: 21.4%, p=0.038). There were no incidences of full or partial heart failure in either arm.

Conclusion

Pixantrone has shown promising efficacy and a lower cardiac toxicity profile compared to the comparator arm in patients with relapsed or refractory aggressive non-Hodgkin's lymphoma. Further studies are needed to confirm these findings and to explore the potential for pixantrone as a salvage therapy.